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## Who Is World Champion?

Since Garry Kasparov of Russia and Nigel Short of England decided to play their 1993 World Championship match outside the governance of FIDE, the status of the World Championship title has been vexed.

Chessplayers like to know who their world champion is. Unlike fans of other sports like tennis or golf, which do without the concept, chessplayers tend to be historically minded and interested in the lineage of their game. The figure of the world champion, who stands at the pinnacle, is invested with a unique mythos.

tion (PCA) to administer their match and subsequent competitions, FIDE immediately declared the title of world champion vacant and removed the two prodigals from its rating list. The latter step was unprecedented. However, the title had been declared vacant before. After Alekhine died in 1946, FIDE organized the 1948 match-tournament that made Mikhail Botvinnik the new world champion. After that, FIDE's control of the title was almost universally acknowledged.

Unlike Alekhine in 1948, Kasparov in 1993 was very much alive. Nevertheless, to fill the declared vacancy, FIDE organized a match between former world champion Anatoly Karpov of Russia and Jan Timman of The Netherlands-both of whom had been defeated by Short on his way to a showdown with Kasparov. Karpov defeated Timman easily, and in the PCA match, Kasparov beat Short even more easily.

Now there were two world champions, one backed by FIDE and one by the PCA. Kasparov's match lineage and longstanding \#1 rating gave him the moral right to the title, but in the eyes of some people Karpov had a legal right.

Since 1993, FIDE and the PCA have operated parallel qualifying cycles for their respective world championships. The PCA, sponsored by the technology giant Intel Corporation, has fared relatively well financially, though dogged by shoddy organization, staff problems, and political backbiting. FIDE, on the other hand, has been hampered financially by at least two factors: the widespread public perception that its championship is no longer the "real" one because it does not involve Kasparov, and the belief by many observers that its leadership is corrupt.

The FIDE championship cycle limped along. After the usual series of qualification tournaments in 1992 and 1993, 12 candidates began the usual series of knockout matches. When this field had been pared to three, Karpov was added to the mix. Two semifinal matches were scheduled: Karpov vs. Boris Gelfand, and Gata Kamsky vs. Valery Salov. Thus FIDE introduced the odd possibility of its world champion being deposed at the semifinal stage of the cycle. If Gelfand were to win, he would not become world champion; instead he would have to play the winner of the other semifinal for the title. But Karpov averted this scenario by ousting Gelfand $+4-1=4$, while Kamsy obliterated Salov (said to be suffering from health problems) by $+4=3$. The FIDE championship match between Kamsky and Karpov was supposed to take place in 1995, but for murky reasons it was never organized this year despite several bids being offered.

The PCA cycle started with a $54-$ player qualifying tournament at Groningen in December 1993. Kasparov, of course, did not participate; he remained aloof in the traditional manner, awaiting the selection of his challenger. (It should be noted that the PCA rating list and cycle were open to all of the top players; Karpov could have played at Groningen if he desired.) The top seven finishers were joined by Short in knockout matches until two were left. The PCA candidates final match earlier this year between Anand and Kamsky (who previously eliminated Short by $+5-$ $1=1$ ) was a reprise of the FIDE quarterfinal match the year before. Then, Anand had collapsed from a two-point lead to lose in overtime. Now, after losing the first game on time he came back to beat Kamsky convincingly, $+3-1=7$, and become Kasparov's challenger.

The PCA championship match was held in September-October 1995 at a glamorous site, the observation deck of the World Trade Center in

New York City, with a prize fund of \$1.35 million from Intel. After a record eight straight draws, Anand won game 9 . Then the challenger collapsed under the burden of his own nerves and Kasparov's superior match experience. Kasparov surprised Anand by introducing the Dragon Variation to title play in game 11 and scored $+2=2$ with it en route to a final winning score of $101 / 2-71 / 2$ in the best-of-20-game match.

Kasparov pronounced himself happy with the match organization, suggested new financial incentives to discourage draws, and predicted that Intel would renew its PCA sponsor-
 tional, while Anand achieved a massive plus score in a simultaneous exhibition in Frankfurt.)

## Campomanes Out!

The long, controversial reign of Florencio Campomanes as FIDE President has ended after 13 years. The last straw for Western delegates was

## The ethically

challenged
Flipino will be remembered
most for his decision in 1985 to halt without result the first match between
Kasparov and
Karpov.
the 1994 FIDE Congress in Moscow, where amid a climate of intimidation and after procedural irregularities Campomanes got himself reelected. Rumbling dissatisfaction, capped by the failure of the Karpov-Kamsky match to take place and the revelation that Campomanes effectively paid himself a large proportion of the FIDE treasury as a bonus earlier this year, finally resulted in a 13-11 noconfidence vote by FIDE's central committee on 20 November 1995. Campomanes resigned at the general assembly that began two days later.

Campomanes will be remembered for his success in popularizing chess in developing countries, and it should be noted that the world championship prize fund reached its peak during his term. Unfortunately, the ethically challenged Filipino will also be remembered for his political machinations, for his questionable financial activities, and most of all for his decision in 1985 to halt without result the first match between Kasparov and Karpov. It was this event more than any other single factor that shaped the organization of top-level chess for the next decade, just as the cold war and the anti-Soviet crusades of Fischer and Korchnoi marked the 1970s and early 1980s.

## llyumzhinov In?

The new FIDE President, chosen for an interim term until elections are held in 1996, is Kirsan Ilyumzhinov. He is President of the Russian republic of Kalmykia, and if he is known at all in the chess world it is for buying Kasparov's 1990 world championship trophy. Called the "Caviar King," Ilyumzhinov is reputed to have amassed vast wealth from his trade in caviar, oil, and other goods, and he apparently has close ties to Karpov, who nominated him.

Will the new man be able to reverse the chess world's Balkanization? Will he care to? Rumor has it that Ilyumzhinov was expelled from the Soviet Communist Party in 1988 on
charges of being "a drug addict, a pimp, an alcoholic, a foreign-currency dealer, and an agent of the Afghan intelligence service." As one wag observed, "We need some energy and enthusiasm in the office of FIDE President, which such a person can bring." At least action is being taken: the new leadership has apparently accepted a bid for a May 1996 Kar-pov-Kamsky match in Montreal with a $\$ 1$ million prize fund, and rejected the championship "reunification" agreement proposed by the PCA.

## Reunification

Many people would like to see such a match, between Kasparov and the winner of the FIDE match. At the scandalous Moscow FIDE Congress, a controversial agreement was hammered out between Kasparov and Campomanes. The PCA would manage the world championship cycle while FIDE would be responsible for the olympiads and other traditional events. Since FIDE formerly got much of its revenue and prestige from administering the world title, one wonders how this agreement could have been implemented smoothly.

Now that FIDE has begun to regroup (a process that now must intensify rather than abate), the sticking points to unifying the titles have become more obvious. For one thing, both Karpov and Kamsky have been publicly vilifying Kasparov, who has expressed his own disdain for both of them. The potential combatants are certainly in the mood for battle, but at this stage the desire to negotiate rules of engagement is what is needed. Another problem is that Kasparov wants the champion's traditional draw odds, which neither Karpov nor the notoriously unreasonable Kamsky seems inclined to grant. Karpov has also made a practice of avoiding Kasparov ever since Karpov won the great Linares 1994 tournament with the record score of $+9=4$, $21 / 2$ points ahead of his rival. Karpov may now be shunning Kasparov to
deny him the chance for revenge. Karpov's recent verbal attacks on Kasparov may be an attempt to lay the moral groundwork for this crafty policy, which does little to advance his claims but much to disappoint chess fans hungry for another epic encounter.

Why does Kasparov need a reunification match? He has already defeated Karpov in three world championship matches (1985, 1986, 1990) while tying him 12-12 in 1987. Even the 1987 match was a sort of moral victory for Kasparov. After blundering in game 23 to fall behind 11-12, he won game 24 by what seemed at the time like sheer will. Their matches have always been close, but Kasparov has beaten Karpov whenever he has needed to. As for Kamsky, Kasparov recently dismissed him as "not a chessplayer." (Of course, those he has anointed as potential successors, such as Gelfand, Ivanchuk, and Kramnik, have yet to come near a title match.)

But all this is in the past. Now Kasparov needs to beat the FIDE champion if he wants the whole world to recognize his primacy. Much may depend on how badly he wants this. His recent confession is ominous: "From 1990 onwards I have been losing my training abilities" (New In Chess, 1995, \#7). However, in the same interview he insists, "I have serious intentions to stay concentrated on the game for a few more years ... I don't think that, if I am in normal shape, anyone can beat me in a match."

As the FIDE-PCA schism demonstrates, the title of world champion is ultimately granted by public opinion. A more objective standard is fairly calculated Elo rating. By either measure Kasparov remains on top.

## DUAL Champion

In $A C 7$ \#2 Patrick Wolff reported on his victory in the 1992 U.S. Champi-
onship. In the 1993 tournament in Long Beach, CA, Alexanders Shabalov and Yermolinsky tied for first place. In the 1994 championship, held in Key West, FL, Boris Gulko attached a unique footnote to chess history by becoming the only player ever to be champion of both the United States and the Soviet Union. He won the latter honor 17 years earlier in 1977 (with Iosif Dorfman), not long before he began a seven-year campaign, punctuated by hunger strikes, to emigrate with his family to the West. As we go to press, we have just learned that Wolff has won his second U.S. title (shared with Nick De Firmian and Alexander Ivanov, over whom he prevailed in a playoff for the championship ring) in the 1995 tournament held in Modesto, CA.

## MARK DVORETSKY

Since Timothy Hanke's article "The World's Best Chess Trainer" in AC7 \#2, Mark Dvoretsky has not been idle. His chess training software seems not yet to have appeared in a commercial version, but publishers Batsford and Henry Holt have brought out two more of his books: Opening Preparation and Technique for the Tournament Player, both co-authored by Artur Yusupov. In 1996 Dvoretsky and Yusupov's Positional Play will appear. All three books are based on lectures and other material from Dvoretsky's Moscow chess school. Dvoretsky has continued his training work with top players (including Viswanathan Anand) and has visited the U.S. frequently, but has not yet moved here as our article suggested he might. Perhaps there is more demand for his skills in Europe. It is also likely that his Western currency earnings go further in Moscow than they would in New York, London, or Dortmund.

Here in the U.S., Dvoretsky's remarks (quoted in the article) about American chessplayers and the level of chess culture in the U.S. created a

## The FiDEPCA

schism
demonstrates
that the title of
world champion
is ultimately
granted by public
opinion.

welcomes
our newest
competitor.
small furor. Joel Benjamin wrote us to dispute various statements that Dvoretsky had made about him. Benjamin says that he did indeed use some of his Samford Fellowship to get chess training. He also mentions his lifetime score of 23-10 in Olympiad and World Team play, which "includes wins over a whole lot of Europeans." Unfortunately, says Benjamin, "Russians are often incapable of taking American chess seriously ... Please don't take a typical case of Russians bashing Americans as anything approaching wisdom." While admitting "Dvoretsky is a capable trainer," Benjamin argues, "Rather than accepting Dvoretsky's words as gospel, we should take a
more critical look at him. Perhaps Hanke was a little star-struck."

On the Internet newsgroup rec.games.chess, the debate surrounding our Dvoretsky profile was even sharper. International Master Mark Ginsburg, a friend of Benjamin and his business associate on the entertaining, irreverent magazine Chess Chow (since defunct), called Dvoretsky's training methods "robotic." Ginsburg also quoted Grandmasters Kavalek and Lein, who disparaged Dvoretsky's training methods and his students' achievements.

Morgan Pehme, speaking for Dvoretsky who was his houseguest at the time, replied dismissively:

It should be noted that Mr. Ginsburg does not know Mr. Dvoretsky, nor does he know his methods and students. Moreover he is not a professional coach and he is not a strong player. Therefore, Mr. Ginsburg is in no position to competently judge Mr. Dvoretsky's teaching methods. So there is no reason to take his current comments seriously, or the future remarks which he is sure to make.

However (said Pehme), Dvoretsky regretted Kavalek's remarks, which were published in Inside Chess. Dvoretsky holds Kavalek in high regard as a player and coach. While it is true (continued Pehme) that Dvoretsky's students have fine technique, it is not true that Dvoretsky's training breeds dry technicians, as Kavalek accused. Actually, Dvoretsky's method consists in part of assessing a player's weak areas and developing them specially.

Separately, Kalev Pehme (Morgan's father) stated his admiration for both Dvoretsky and Benjamin. He also suggested that Ginsburg "take some time to work with Mark, as I believe it would improve his play considerably." He cited the bottom line:

For all of the disparagement [of Dvoretsky], the reality is that Mark's students have done well internationally, and in many cases much better
than most American players. In fact, the former Soviet players widely look down on Americans for being weak, because they are. They look at results, not talent. What is the use of talent unless put to work? Take a look at the FIDE list. For home-grown Americans, it is not a pretty sight.
No doubt these words will provoke further debate.

## NEW YORK 1927

In his article "New York 1927" in AC7\#1, Hanon W. Russell mentions the old story that Capablanca granted draws in the last three rounds to Alekhine, Nimzovich, and Vidmar so as not to influence the fight for second and third prizes. Capablanca (the story goes) even dictated several moves to his opponent Nimzovich, who had played badly enough to be in danger of losing. The article accuses Nathan Divinsky's The Chess Encyclopedia of perpetuating this "minor mythology" without documentation. (In ACF\#2 [pp. 8-9] we noted that this story might have originated with either Jack Spence's 1955 book on the tournament or with some of Capablanca's friends.)

Dr. Divinsky wrote us to praise Mr. Russell's article while taking exception to this accusation. He notes that the most important and credible source for the story is the tournament organizer himself, Norbert Lederer, who wrote in a letter to Chess Review (August 1949, p. 225):

In fairness to Capa, it should be noted that he had already secured first prize since he had a $31 / 2$ point lead with only three games to play; these were against Alekhine, Nimzovich and Vidmar. Capa announced that, in order not to appear favoring one of the three, who were all in the running for second or third prize, he would play for a draw against each of them, and he so informed me as tournament director. Needless to say, I did not relish this
attitude, but there was little I could do about it.

During his game with Capablanca, Nimzovich indulged in some fancy play and found himself in a practically lost position. Capa then not only asked me to warn his opponent, but actually had to dictate the next four or five moves which Nimzovich played with great reluctance as he suspected a double-cross. However, he did follow instructions and a draw was reached four moves later.
The reader will remember that the prize for second place in this tournament may have included a title match with Capablanca. As it happened, Alekhine finished second and the organizers had no need to do anything more, since Capablanca had already agreed in principle to meet him later that year in Buenos Aires. Little did anyone realize that New York 1927 was the last chance Capablanca would have, as world champion, to demonstrate his noblesse oblige.

## Whyld Thing

Fred Wilson reviewed The Oxford Companion to Chess, Second Edition, in AC7 \#1. Kenneth Whyld, who edited the volume with David Hooper, responded to Wilson with a thoughtful two-page letter that begins, "I read your review ... with great interest. It is a model for all reviewers.... My purpose in writing is not to argue with your views but simply to fill in a little background." In particular, Mr. Whyld denies that the book contains any "conscious anti-American bias." Some additional excerpts:

When we wrote the first edition we specifically asked the publisher if we were to introduce any bias. The answer was that we had to remember that we were writing for Englishspeaking readers and that while we should try to deal even-handedly with everyone, in the case of borderline decisions we should lean slightly to-
"Take a look at the FIDE rating
list. For
home-grown
Americans, it is
not a pretty
sight."
wards a）UK topics，and b）other En－ glish－speaking ones．This applies only in a few really marginal issues．

The biographical selection is cer－ tainly one of the most tricky areas， and no two sets of authors would make the same decisions．Many of them duck it by simply including players based on their FIDE titles．Broadly speaking people are in for one of four reasons：1）their performances as play－ ers or composers，2）their importance to chess in other ways（e．g．authors， historians etc），3）their names crop up several times elsewhere and we wanted to bring their biographical details to－ gether，or 4）because they have an in－ teresting story．

Of course，you are right in saying that some of our omissions and con－ clusions are quite debatable，and I hope they will be debated．We have debated them ourselves．

## ANAND－IVANCHUK

Joseph Tegtmeier writes about the position shown in Diagram 1，from the analysis of Anand－Ivanchuk（m／ 6）1992，on p． 26 of $A C 7$ \＃1：


2 －Anand－Ivanchuk ＂Patrick Wolff brings us down a possible line starting with 12 g 4 ，concluding that after 21 Maf4 h3 Black is OK．But why not 21 \＆f6＋昷 $\times$ f6 22 甾 $\times \mathrm{d} 5$ instead？＂

Patrick Wolff answers： ＂Thank you for your atten－ tion to my analysis．You are absolutely correct，of course， that 21 ff + ！wins，instead of 21 씁 $\times 4$ ？This was the single most difficult piece of analysis I did in the entire article，and I must admit I was simply overwhelmed by the complications．After 11 ．．．马e8（see Dlagram 2） Anand chose to shy away from 12 g 4 based on his in－ tuition，but to justify（or criticize）his decision with concrete analysis takes an
enormous amount of work！Here fol－ lows a revised analysis of the critical position．＂

12 g 4 e 513 匂b3 exf4 14 g 5
$14 \times \mathrm{Q} 4$ 包 515 g 5 气fd7 7 ．
$14 \ldots$ ．．． H 515 且 $\times \mathrm{h} 5 \mathrm{~g} \times \mathrm{h} 516$ 亿d5
 bxc 3 甾e4＋ 19 雷g1 完 5 with the ini－ tiative．

16 ．．．씁d8



 De5 is unclear，but not $18 \ldots . . \begin{gathered}\text { M } \times \mathrm{c} 2 \text { ？}\end{gathered}$

 20 甾f3 $\pm$ intending $20 \ldots$ ．．． 2 e5 21 ©f6＋and wins．After 18 ．．．©e5，if 19
 is good for Black．

## 17 甾 $\times$ h 5

 M $\times \mathrm{d} 6$［18 $0 \times h 5$（0） 5 with the initia－ tive］${ }^{\mu} \mathrm{g} 5$ is unclear） 18 h 3 Dg 6 ！ 19


 a $\times$ b2 with compensation．

17 ．．． 0 e 5
17 ．．．品 $\times 418$ alef4 is unclear； e．g．， $18 \ldots$. b6 is not good because of 19 日xf6＋！昷xf6 $20 \mathrm{~g} \times f 6$ 甾xf6 21凡e3！＋－

After 17 ．．．©e5 Black stands well， as the following variations show：
 ＊g1 $0 \times 4$ 干．
b） $18 \mathrm{al} \times \mathrm{ff} \mathrm{sg} 419$ Mh $4 \mathrm{~g} \mathrm{f} 3+20$


c） $18 \Xi \times f 4$ פg6 $19 \triangleq \mathrm{f} 6+\mathrm{m} \times \mathrm{f} 6$ and： c1） $20 \mathrm{~g} \times \mathrm{ff}$（？ ？ $0 \times f 421$ Mh6（21 Mg5＋Dg6－＋）and now Black seems to have two good lines：

$$
\text { c11) } 21 \text {... ©h5 } 22 \text { ad2 (22 }
$$


 gxe $423 \mathrm{~g} \mathrm{~g} 1+\square \mathrm{g} 4-+$ ．
c12） 21 ．．．⿹勹巳e6 22 与ิd4（22




（21 ．．．量h4 22 Mf3 ©e5 23 ㅆgf2） 22





 ғ） 27 씀 $8+$－ 0 f 8 －＋

Wolff concludes：＂I know that these complex variations are hard to follow，but I believe that in this case they are very helpful in getting to the heart of this Sicilian position．The bottom line is that Anand＇s intuition was correct，and 12 g 4 is premature．＂

## Fischer－Keres

Jonathan Yedidia has a correction to his article＂Fischer－Keres，Bled 1961＂ in $A C 7$ \＃1．

In the position shown in Dlagram 3，Fischer played 30 क्bll？and on p ． 83 the article says，＂Fischer makes the wrong choice and spoils his chance for a well－played victory．The King should be on h2，so that when Black plays 씁 $\times f 1$ ，it is not check．＂

This conclusion is correct，but some of the analysis offered in sup－ port is flawed．In particular，after 30 ＊h2 ㄹa3 31 b 5 茴xe3 32 Me5，the article considers only $32 \ldots$ ald 3 and $32 \ldots$ ．． E 1 ，missing $32 \ldots$ 名 3 ！with the idea of $\mathrm{g} 7-\mathrm{g} 5-\mathrm{g} 4$ followed by ．．． $\square \times \mathrm{h} 3$ mate，an idea pointed out by reader William Kelleher．After 32 ．．． gg3 33 c 5 g 534 c 6 数h7！（not $34 \ldots$
 （ $\mathrm{d} 7+!$ ！ 35 c 7 g 4 ，Black＇s attack comes first．

Therefore，instead of 31 b 5 ？ White should play 31 me5！immedi－ ately，so as to meet $31 \ldots \Xi \times \mathrm{e} 3$ with 32 c5！saving a precious tempo．Now $32 \ldots$ ．． Eg 333 c 6 g 534 c 7 is hopeless for Black，as is $32 \ldots$ … $\mathrm{g} 3+33 \mathrm{M} \times \mathrm{M} 3$ $\mathrm{h} \times \mathrm{g} 3+34$ 由g1 日c3 35 b 5 ！䒤×c5 36 Eld8＋©h7 37 b6．Black must try 32 … घe1 33 』xel 嫘 $\times$ el．Now after 34 c6！씁 $\times$ f1（ $34 \ldots$ ．．．쓰́xb4 35 c 7 甾b7 36 씁c5 씀c8 37 皿a6） 35 c7 씁a6（ 35 ．．．甾c4 36 甾c5； 35 … 甾c1 36 甾c5 甾f4＋

37 （61） 36 씁 7 ！Black is helpless against the threat of 37 씹d8＋followed by $38 \mathrm{c} 8 /$
坚e6 38 c 8 ／甾 쓸 $5+39$ 흡g1甾a1＋40 f 2 and White eventually brings his queens back to stop the checks．

## DuE Credit



Stuart E．Wagman writes to tell us who took the photograph of Bobby Fischer on the cover of $A C 7$ \＃1，which we credited to the Russell Collection （which generously lent it to us），and whose origin was unknown to us． Wagman testifies that his friend，Dr． Richard Cantwell of Fairfax，VA，shot it and many others of Fischer at Curaçao in 1962．We thank Dr． Cantwell for his acquiescence in our using this photo，and we wonder what the others look like．


# The Immortal Game 

Robert Hübner

Hardly any other game between two masters has been so fervently admired, so frequently published, and so industriously commented upon as the famous practice game between Anderssen and Kieseritzky played before the London 1851 tournament. I expected, therefore, to find rich material here that could be useful to me in my own ardent efforts to master the art of analysis. I set myself the task of collecting and synthesizing the earlier commentaries on this game; I hoped in this way to be able to witness the gradual progress in understanding and the growing clarity of the analytical approach.

At the end of my work I will give my opinion about the value of the earlier commentaries, but first I will turn to the game itself. The most important sources I used are listed at the end of this article.

The celebrated game between Anderssen and Kieseritzky was played on 13 May 1851, the day before the opening of the international tournament in London, according to F.L. Amelung's 1901 article in Baltische Scbacbblätter (p. 482, footnote 2). It is said that Anderssen did not take more than an hour to finish (Amelung, p. 493). The person who dubbed it the "Immortal Game" was Philipp Hirschfeld (again according to Amelung, p. 482, footnote 3; but in the 8th edition of von Bilguer's Handbuch, p. 768, it is claimed that Falkbeer invented the name; since I have no access to the sources I cannot decide where the truth lies).

[^0]I conjecture that the first author to show the game was Kieseritzky himself in his own publication La Régence, in July 1851. According to Amelung (pp. 482, 486), the game was included in the first printing of The Chess Player, also in 1851, and was very well-known throughout the 1850 s. Its earliest publication in Germany was in the second edition of von Bilguer's Handbuch (1852), again according to Amelung (p. 482).

The game score varies wildly in different publications. This is already noticeable in Amelung's 1901 article in Baltische Schachblätter. I am following the score given by Hooper and Whyld in The Oxford Companion to Chess, first edition (1984), p. 150. (The version given by D. Levy and K. O'Connell in the Oxford Encyclopedia of Chess Games, Vol. 1, 1981, p. 176, is definitely not authentic.) However, it seems extremely unlikely that Black resigned after 20 然e2 as Hooper and Whyld claim. According to Amelung in Baltische Schachblätter, Vol. 4 (1893), p. 325, what probably happened was that Kieseritzky played 20 ... 今a6 and Anderssen announced mate in three; the final combination was never played on the board.

Now I will turn your attention to the game itself.

## Anderssen-Kieseritzky, London 1851 (Offhand game) King's Gambit Accepted C33

## 

The main reason for this move (curiously not even mentioned in ECO) is to gain time for mobilization. Further, White's king bishop is more exposed on b 5 than at c 4 ; Black can win a tempo with c 7 -c6 establishing his center; and sometimes Black can hit the bishop with ... Mh5. The possibility of a Black fianchetto at b7 is often important. On the other hand, it is unimportant that the bishop is diverted from its attack on f 7 : there is no serious attack against this point to be feared in the positions under consideration, especially since the f-file is not accessible to White's rook.

It appears to me that the above-mentioned advantages are not worth a pawn and the splintering of Black's queenside, because the time saved with $\mathrm{d} 7-\mathrm{d} 5$ is for pieces not yet developed. My opinion has nothing to do with the strength of the combatants or the worth of their ideas. Even today, each new opening idea still finds its value through practical tests, and rarely do even the strongest players find the best practical moves on the spur of the moment. The last word on many opening variations is frequently overturned. No one can claim that a final assessment of the gambit under consideration has been reached. The authors who com-


ment upon it take care to withdraw to a clear van－ tage point：
＂A countergambit with undeniable authority． Black obtains a convenient post for his bishop on b7＂（Richard Réti）．

Estrin and Glaskov in their 1982 opening book Play the King＇s Gambit，Volume 1 （King＇s Gambit Ac－ cepted）comment that the countergambit also has its drawbacks，which have been insufficiently explained in other opening books，while writing in their notes to the game：＂The point of the move is to deflect the hostile bishop from the vulnerable $f 7$ square．＂

The different conceptions of the validity of the opening moves will be illustrated in the following pages by quotations．My own opinion will be supported by attempts at analysis．

## $5 \times 65$－ 6

＂Here one almost has the impression that Black intends to forget his move．As preparation for 5 ．．． $0 f 6,4$ ．．．b5 was not necessary＂ （Réti）．

Estrin and Glaskov analyze $5 \ldots \mathrm{~g} 5,5 \ldots \mathrm{~b}$ ，and $5 \ldots \mathrm{f}$ ，none of which gives Black better prospects than the move played．

6 包f3 崮h6（D 2）
＂The queen stands here very badly and is in the firing line of White＇s bishop on cl．Much better was 6 ．．．甾h5＂（Réti）．Barcza， Alföldy，and Kapu write in Die Weltmeister des Schachspiels（1975）：＂A novel but，as is subsequently shown，wrong plan．Black does not place his queen on the usual h 5 square，but prefers to keep it free for the knight and hold on to the gambit pawn．This is not consistent with


## Lionel Kieseritzky

Lionel Adelberto Bagration Felix Kieseritzky（1806－1853）， of mixed Polish and German descent，led a life in some ways similar to Anderssen＇s，in other ways tragically op－ posite．Like his famous opponent，he was a teacher of mathematics．Becoming increasingly devoted to chess，he left off teaching and became a fixture at the Café de la Régence in Paris，where he gave lessons and played for a fee．He was good in odds games against weak players，but he was less successful against masters，and is best remem－ bered for his loss to Anderssen．Two years later he was dead．According to The Oxford Companion to Chess，first edition（1984），p．165，Kieseritzky was＂a difficult man to like and when he died none would contribute to save him from a pauper＇s funeral and none stood by the grave．＂

Black＇s fifth move，and it contra－ dicts the principles of sound de－ velopment．＂

Obviously they have read Réti thoroughly，but their elaborations surprise me．First of all，it is re－ markable that Black found an un－ usual plan in a position that to the best of our knowledge has never been seen before（vide D ． Levy and K．O＇Connell，Oxford Encyclopedia of Chess Games，Vol． 1，1981，opening index，p．468）． In addition，I don＇t understand how an independent thought， whether it is realized or not，can be bad；and finally it escapes me why the chosen continuation af－ ter Black＇s fifth move doesn＇t ac－ cord with the principles of sound development．

Estrin and Glaskov say in their opening work：＂6 ．．．留h5 7 Qc3 日b7 is bad due to 8 日c4！气xe4（or $8 \ldots$ 昷） 49 d 3 昷xc3 10 bxc3 g5 11 h 4 ） 9 甾xe4！d5 10昷b5＋c611 © O 3 ！＂

The fact is that after 6 ．．．Mh ${ }^{-1} 5$ 7 ©c3 the threat 8 e 5 is powerful． After 7 ．．． m 7 it appears to me that this push is stronger than 8 ac4．After 8 e5（D 3）：
a） 8 ．．．$\times \mathrm{f} 39$ 씁 $\times \mathrm{f} 3$ 씁 $\times \mathrm{f} 3+$ $10 \mathrm{~g} \times \mathrm{f} 3$ 句h5 11 d 4 c 612 合 3 d 5 13 国e2 g5 $14 \mathrm{~h} 4 \mathrm{~h} 615 \mathrm{~h} \times \mathrm{g} 5 \mathrm{~h} \times \mathrm{g} 5$ 16 最5，and White wins．
b） 8 ．．． 0 g 49 d 4 分 $3+(9 \ldots$ g5 10 h 4 ＋－） 10 ＠$\times \mathrm{e} 3 \mathrm{fxe} 311$ Me2．White wins a pawn and has a big lead in development．
 d3 $\times \mathrm{Pf} 311$ M $\times \mathrm{f} 3$ 씁 $\times \mathrm{f} 3+12 \mathrm{~g} \times \mathrm{f} 3$ g5 13 h 4 with a winning position for White．
d） $8 \ldots$ ．．． 0 d 590 d 5 （after 9


## Adolf Anderssen

Karl Ernst Adolf Anderssen（1818－1879），a German who was born and died in Breslau，began his chess career as a problem composer，first becoming known with his publication Aufgaben für Scbachspieler（1842）． In those days there was not as sharp a distinction be－ tween＂problems＂and practical chess as nowadays．But Anderssen is now remembered for his achievements in over－the－board play．He received his training as a player in Breslau，travelling often to Leipzig and Berlin to find stronger opposition．In 1851 he was selected to represent Germany in the London tournament（gen－ erally considered the first international tournament in chess history）．

After winning London 1851，in the course of which he defeated Howard Staunton in a knockout match， Anderssen was regarded as the world＇s leading player． In 1858，after seven years of little practice，Anderssen lost a celebrated match to Morphy（ $+2-7=2$ ）．He won the London tournament in 1862．In 1866 he lost a close match $+6-8$ to the rising star Steinitz，but fin－ ished a half－point ahead of him while winning Baden－ Baden 1870.

Anderssen had a successful career as a teacher of mathematics and the German language．He was a friendly and honest man；when he died，Deutsche Schachzeitung ran his obituary in 19 black－lined pages． His most important biography is Adolf Anderssen，Der Altmeister deutscher Schachspielkunst by Hermann von Gottschall（Leipzig，1912），which includes more than 750 games．

It is clear to me that Réti does not understand anything about the position．


7 d3（？）
Much more consistent is 70 c 3 ，defending both the e 4 pawn and preparing 8 d 4 ．There can follow：
a） $7 \ldots \mathrm{~g} 58 \mathrm{~d} 4 \mathrm{~g} 79 \mathrm{e} 5$ 亿h5（Raphael－Morphy，New York 1857） 10 气e4（ 10 㒶gl？was played in the game） $10 \ldots \mathrm{~g} 411$ 气h4

b） $7 \ldots \mathrm{l}$ b 8 M M e2（after Estrin＇s and Glaskov＇s continuation of 8 d4 advantage，because Black has the rejoinder $11 \ldots$ 甾 $\times \mathrm{e} 2+12$ 웁 $\times 2$ c6 followed by $13 \ldots$ ． L 7；also worthy of at－ tention after 9 Me 2 is $9 \ldots$ f5） $8 \ldots$ ．．． 9 e5 ©h5（if $9 \ldots 0 \mathrm{~d} 5$ ，then 10 气e4 is strong） 10 Egg1 0－0 11 d4 M G b6（D 4）with sharp play； White has the better prospects．

7 ．．．气h5（？）
Here Réti remarks：＂Now one sees the purpose of 6 ．．．甾h6．Black threatens to win the exchange with $气 g 3+$ ．The threat will only work if White overlooks it；other－


4 $\square$

Analysis wise Kieseritzky has placed his queen and knight on the rim for nothing．Not even a coffeehouse player plays this badly today．But this was the style of that time．＂

It is clear to me that Réti does not understand anything about the position．Of course the threat $8 \ldots$ ．．． 0 g $3+$ gives Black a tempo；the Black knight also guards the vital pawn on f 4 without which his kingside is weak，and at the same time it allows the queen to swing over to the other side of the board（爰h6－b6）to escape the indirect threat of the white bishop on cl ．

Estrin and Glaskov recommend 7 ．．．
 fact this is better．

This continuation actually occurred in a game Anderssen－Pollmacher， 1852. Anderssen played 10 d3，after which Black

with $10 \ldots \mathrm{~g} 511 \mathrm{~h} 4 \mathrm{~g} \mathrm{~g} 8$ could have obtained a dangerous initiative（Estrin and Glaskov）．Here 10 e 5 looks stronger：
a） $10 \ldots$ ．．． 11 亿 $\mathrm{D} 2 \mathrm{~m} \times \mathrm{f} 3$（after $11 \ldots \mathrm{~g} 5$ ，the move 12 M M d 3 has the devastating threat of 13 g 4 ） $12 \mathrm{~g} \times \mathrm{f} 3$ ．White has a great attacking position．
b） $10 \ldots$ ．．．e4（weak is $10 \ldots$ d $5110 \times \mathrm{d} 5 \times \mathrm{C} 5$ 12 c 4 followed by c4－c5 at the right moment） 11包xe4 $\times 412 \mathrm{~h} 4$ ．The threat 13 g 5 simply can－ not be parried；White stands better．

After the text White plays an attractive con－ tinuation，but could have chosen a better．

## 8 勾h？（D 6）



White obviously wants to tie down the oppos－ ing queen to the defence of the knight on h 5 and plant his knight on the strong 55 square；but 8 gigl（O．Cordel）with the threat of g 4 was much stronger．
a） $8 \ldots \mathrm{~g} 59 \mathrm{~g} 4 \mathrm{f} \times \mathrm{g} 3$（ $9 \ldots \mathrm{D} 710 \mathrm{~h} 4$ is unpleasant for Black） 10 $\mathrm{h} \times \mathrm{g} 3$ ．The weaknesses in Black＇s kingside have fatal consequences．

 $11 \times f 7+$ ） 11 Me2．Black＇s lack of development and coordination
 14 亿e5 g6 15 今c4 留c7 16 e 5 ，etc．
c） $8 \ldots$ ．．． $9 \times \mathrm{a}$ 甾 $\times \mathrm{a} 610$ © $\mathrm{c} 3 \mathrm{c} 6(10 \ldots \mathrm{c} 5$ is refuted by 11今d5） 11 气e2．Black cannot hold on to his pawn on f 4 ．

8 量e2，a suggestion of R．Teschner，is far weaker because the king stands badly on e 2 and the knight on h 5 is no longer attacked by the queen；after $8 \ldots$ 甾b6 9 c3 c6 10 a6 the situation is unclear．

The move played neglects White＇s de－ velopment；the position is not yet ripe for a direct attack．Black can now change the situ－ ation to his own advantage．

## 8 ．．．씁g5

Kieseritzky，whose preservation of the game score deserves our thanks，gave $8 \ldots$ g6 as stronger in La Régence．Estrin and Glaskov agree，analyzing the following lines：
 a） 9 g 3 e 7 with better prospects for Black；

These opinions do not strike me as sound．In the first variation White can continue with 10 甾f3（weaker is 10 甾g4 c6 11 Ic4 f5 12 exf5 d5 and Black has ferocious activity），answering $10 \ldots \times h 4$ with $11 \mathrm{~g} \times \mathrm{h} 40-012 \mathrm{c} \mathrm{c} 3$（D7）and White is better．

In the second variation White can continue with 12 合d2．Black has no way of stopping White＇s bishop from reaching e3；White will play 13 甾f $f 3$ and obtain the advantage．

In Bilguer＇s Handbuch one finds already in the seventh edition
 12 M $\times \mathrm{m} 5 \times \mathrm{g} 513 \mathrm{Dc} 3$ ．White finally wins the f 4 pawn and has a big advantage in the endgame．Stronger than 11 ．．．Mg5，however，is 11 ．．．g5．Now 12 $0 \times f 4$ fails to 12 ．．．Mff；the situation is un－ clear．The continuation 11 M f 3 （instead of 11 ㅆ⿴囗十 g4） $11 \ldots$ g5 12 e 5 c 613 合 3 甾e6 14

田g1 cxb5 18 亿c7＋합d7 19 各 $\times 18$ 気c6（D 8）is not recommended for White．


With 8 ．．．g6 Black could have obtained a satisfactory game；the move played harasses the loose White pieces and is even stronger．

9 ©f5 c6（？）（D 9）
＂Since there is nothing on one side，Black again makes a move on the other wing，＂mocks Réti．

The modern treatments I consulted all pass over this move without commentary，but the old mas－ ters（especially Steinitz） felt that this position was critical： 9 ．．．g6 needs dis－ cussion．After 9 ．．．g6， 10 h 4 （D 10）is forced， because White wants to avoid losing a piece and $10 \mathrm{~g} 4 \mathrm{~g} \times f 511 \mathrm{~g} \times \mathrm{h} 5 \mathrm{f} \times \mathrm{e} 4$ is unplayable． Now Black can choose from：
a） $10 \ldots \mathrm{~g} 3+$
a1） 11 当 e 1 씁f6 12 气े $\times g 3 \mathrm{f} \times \mathrm{g} 3$ a11） 13 留 e 2 ＂with strong play for


10
Analysis White＂（von Gottschall）．
a12） 13 M ${ }^{\mathrm{M}} \mathrm{f}$（Steinitz）is still better．In my opinion，White has a decisive advantage．
a2） 11 包 $\times g 3$ 씁 $\times b 5$（ $11 \ldots$ 씁 $\times g 312$ 员h3 loses the queen） 12
 has a winning position．
b） 10 ．．．M Mf6（Deutsches Wochenschach 1893；von Gottschall）is the critical move．Black needs to meet 11 Dc3；the variation given is without any assessment，but from context one can tell that von Gottschall believes White is better．However，it seems to me that
after 11 ©c3 c6 Black does not stand worse： 12 （12 c4 allows the reply $12 \ldots \mathrm{~d} 5$ ） $12 \ldots$ ．．． 0 a6（ $12 \ldots \mathrm{~d} 6$ is not to be recommended because of 13 d5）．Now the threat is $13 \ldots$ ．．． 2 c5 14 d 6 ；after 13
 suffers from his exposed knight on 55 ；Black should stand better．

The text allows White to obtain a good game by indirectly at－ tacking the queen and to forcing it to withdraw．

## 10 g 4 ？

I have never seen a critical mark on this move．All the annotators have been dazzled by Anderssen＇s subsequent combination and have called this the move that starts it all．In my opinion，it is not the best． What are the alternatives？The continuation 10 h 4 Mg6 weakens the g3 square；after 11 昷 4 d5 Black is better．If 10 gl，which is actu－ ally given as the game continuation in Levy and O＇Connell，Oxford Encyclopedia of Chess Games，Vol． 1 （1981），p．176，Black could get a decisive advantage with $10 \ldots \mathrm{~g} 6 \Pi \mathrm{~g} 4 \mathrm{~g} \times f 512 \mathrm{~g} \times \mathrm{h} 5$ 留h4．But 10 a 4 （not 10 a because of 10 ．．．d5）is a more circumspect idea：
a） $10 \ldots \mathrm{~d} 5$
a1） 11 g 40 f 6 （ $11 \ldots \mathrm{~d} \times \mathrm{e} 412 \mathrm{~d} \times \mathrm{e} 4 \mathrm{a} 6+13 \mathrm{~g} 2$ is pleasant for
 White＇s king position is too fragile） 12 ．．．씁 $\times g 413$ 씁 $\times g 4$ 気 $\times g 414$

 for both sides．
a2） 11 씁 $f 3$ is much stronger：
a21） $11 \ldots$ 是 $\times f 512$ exf5．Now $12 \ldots$ 甾 $\times f 5$ fails to 13 g 4 ，and addition 13 M M 5 is threatened；after 12 ．．．©f6 13 M $\times f 4$ White has a winning position．
a22） $11 \ldots \mathrm{~g} 612 \mathrm{exd} 5$ 留 $\times f 513 \mathrm{~d} \times c 6$ ．The threat of $14 \mathrm{c} 7+$ is not without force．
a23） $11 \ldots \mathrm{~d} \times \mathrm{e} 412$ M $\times \mathrm{me} 4+$ 雨d8 13 ©d4．Black＇s situation is unenviable．
b） $10 \ldots$ g 611 句 3 （D 11） $0 \times \mathrm{D} 3+12$ $\mathrm{h} \times \mathrm{g} 3$ 씁 xg 313 会c3 县c5 14 筸el（14 d4
 Qe7 are weaker continuations）： b1）The try to hold on to the extra pawns does not work： 14 ．．．씁xel＋（14 ．．．
 g3 with advantage to White： $17 \ldots f \times g 318$
昷 $\times \mathrm{g} 5$ 吕g8 19 皿 $\times \mathrm{e} 7 \mathrm{~g} 2+20$ 臮f2 with a won endgame．
b2） $14 \ldots 0-015$ 씁 $\times g 3 \mathrm{fxg} 316$ h h 6 （otherwise Black continues
 even if Black＇s situation after 18 ．．．©a6 is not yet hopeless．

All the
annotators have been dazled by Anderssen＇s subsequent combination and have called 10 g 4 the move that starts it all． In my opinion，it is not the best．

After the text Black had the opportunity for a promising con－ tinuation．

$$
10 \text {... } 0 \mathrm{ff} \text { (?) }
$$

Barcza，Alföldy，and Kapu claim：＂Now Black is definitely thrown on the defensive． 10 ．．． g 6 had to be tried，although White would still have the advantage．＂

The above is almost a direct quote of Réti，which in turn is copied from von Gottschall：＂Here 10 ．．．g6 was worth consideration for Black．After the text Black remains at a disadvantage．＂

Other authors make the claim that after $10 \ldots$ cxb5 $11 \mathrm{~g} \times \mathrm{h} 5$ White has a definite positional edge（Polihroniade；Estrin and Glaskov）．

However，I believe that after $11 \ldots \mathrm{~g} 6$（ $11 \ldots$ d5 $12 \Xi \mathrm{~g}$ g ${ }_{\mathrm{g}}^{\mathrm{g}} \mathrm{f} 613$
 © c 6 matters are not so clear．


Let us look more closely at $10 \ldots \mathrm{~g} 6$ ，a very potent move．
a） $11 \mathrm{~g} \times \mathrm{h} 5 \mathrm{~g} \times 5 \mathrm{f} 12 \mathrm{~h} 4$（the continua－ tion 12 gg1 Mh 413 皿c4 fxe4 14 dxe 4 d 5 is no better for White） 12 ．．．崮f6 13 alc4 fxe $14 \mathrm{dxe} 4 \mathrm{~g} g 8$（D 12）and the White monarch is fatally exposed．
b） 11 Dd4＠g7 12 c 3 日 Od 413 cxd 4甾 $\times \mathrm{b} 514$ ©c3（ $14 \mathrm{~g} \times \mathrm{h} 5$ fails to $14 \ldots$ ．．． after which White＇s position falls apart） 14

 Black has a winning position．

Kieseritzky and the later commentators do not realize that the key piece in the posi－ tion is the white knight on f5．If White＇s only well－placed piece could be driven away or removed，White could only hope to gain an advantage through weak play by Black．

It is understandable that Kieseritzky in an offhand game would take a leisurely ap－

$13 \square$ proach and not notice the coming storm．It is，however，astonishing that in more than a century the alternatives to 10 ．．． 0 f 6 have not been critically examined．

11 घg1（D 14）cxb5？
I have not seen any comments on this move，but in my opinion it is a decisive mistake．

It is still important to neutralize White＇s knight on f5；but it is also imperative to create some breathing space on the kingside and create a secure square for Black＇s queen．Insufficient is 11 ．．．d5 12 h 4

Mg6 13 h 5 （weaker is $13 \times f 4 \mathrm{~h} 5$ ） 13 … 씁g5 14 씁f3 $\times f 515$ exf5 $\mathrm{c} \times \mathrm{b} 5$（also grim is $15 \ldots \mathrm{~d} 616$ 昷 4 $0-017$ Dc3 with the threat of 18
 fierce attack for White；for example

 hopeless for Black） $19 \hat{\Delta} \times \mathrm{d} 5$ etc．

Correct is $11 \ldots \mathrm{~h} 512 \mathrm{~h} 4$ 留g6 13 g 5 （Black has no worries after 13
 g6 16 气d4 $\begin{gathered}\text { M }\end{gathered}$ h4） 13 ．．．©g4（D 15）
 and now：
a） $14 \times \mathrm{f} 4 \mathrm{~d} 5$ ．White＇s position falls apart．
b） 14 a 4 d 515 包 $416 \mathrm{c} 3 \times \mathrm{d} 417 \mathrm{c} \times \mathrm{d} 4 \mathrm{~d} \times \mathrm{e} 4$ and Black stands to win： $18 \mathrm{~d} \times e 4$ M $\times \mathrm{m} 4$ with the irre－

$15 \square$
Analysis sistible threat of 19 ．．．
c） 14 © $3 \mathrm{c} \times \mathrm{b} 515$ © 5 （ 15 © xb 5 is refuted by 15 ．．．Mbb） 15 ．．．今，气a6（ 15 ．．．d6 16 今d4 gives White more prospects；also 15 ．．． 16 d6 $16 \times f 4 \times f 417 \times f 4$ is easier） 16 昷 $\times \mathrm{f} 417 \mathrm{c} 4 \times \mathrm{C} 518 \mathrm{cxd} 5$ Mb6． White does not have enough compensation for the piece．

After the move played in the game， White has an overwhelming position．

## 12 h 4

After the immediate 12 M g f，Black would have $12 \ldots \mathrm{~h} 5$ ．
12 ．．．Mg6 13 h 5 씁g5
 disastrous for Black．


## 14 留f3 0 g 8

a）Euwe suggests $14 \ldots 0 \times g 4$ ，but after 15 品 $\times g 4$ 嫘 $\times h 516$ 昷 $\times f 4$ White has a win－ ning position：
a1） $16 \ldots$ g6 17 气d $6+\times \mathrm{d} 6180 \times \mathrm{d} 6$気c6 19 畑f6 g g8 20 気 3 （ $\mathbf{D}$ 16）．The final position of this variation highlights the weaknesses in Black＇s camp．
a2） $16 \ldots \mathrm{~d} 517$ §c3 $3 \times f 5(17 \ldots \mathrm{~g} 6$ is bad due to 18 亿 $\times \mathrm{d} 5$ and 19 国6＋） 18 exf5． White＇s attack is decisive．
b）There is the much－mentioned try of driving off White＇s knight with $14 \ldots \mathrm{~g} 6$ ．After $15 \mathrm{D} \times \mathrm{f} 40 \times \mathrm{o} 4$ White must decide between：
 has the advantage．
b2） 16 㜽 $\times \mathrm{g} 4$ 畑 $f 6$ and now：

b22） 17 包 3 씁 $\times b 2$ leads to very unclear consequences．
b23） 17 © c 3 is the critical continuation；after $17 \ldots \mathrm{~g} \times \mathrm{f} 518$ exf5 White＇s initiative is powerful．

## 15 皿 $\times f 4$ 甾f6

Réti reports here：＂A modern player would probably have real－ ized that his queen had been moved too often，and would play $15 \ldots$甾d8 to take it out of range．But at that time it was standard to attack the pawn on b 2 from f6．＂

Réti is off base again．After $15 \ldots$ 㽞d8 16 容 3 White wins pret－ tily without resistance：
a） $16 \ldots \mathrm{~d} 617$ © $\times \mathrm{b} 5 \times \mathrm{m} 518$ exf5 and White wins（Polihroniade）．
 attack（Polihroniade）．
 al $\times$ d6 $200 \times \mathrm{d} 6+$ the $210 \times f 7$ and White wins．

The text maintains the g 7 ， d 6 ，and e5 points， threatens the pawn on b2，allows the king an escape square on d8，and gives Black more swindling chances－but it is not enough to save the game．

16 © t 3 皿c5（D 17）
Several commentators have mentioned alter－ natives to 16 ．．．
a）＂Now it was high time for Black to secure his position with $16 \ldots$ ．．．$b$ b But he sees the oppor－ tunity to attack，and that is the only factor that matters＂（Réti）．He forgets to mention that White would also win easily against 16 ．．． a b：
㜽ab1

a2） 17 㽞g3（this move has been recommended by several com－ mentators）：
a21） 17 ．．．©c6 18 g 5 followed by 19 匂 $\times 55$ etc．
a22） 17 ．．．© 0 a6 18 Øxb5（ 18 皿e5 Mb6 does not yield any clear result） 18 ．．．

 White＇s threats are overwhelming；after 23 ．．．当c6 follows 24 g 5 ．
b）＂Stronger is $16 \ldots$ ．．．쓸．6＂according to


G．and L．Collijn．This is a misprint；they really mean 16 ．．．Mc6． Their observation is correct，yet with 17 ©d4 White still obtains a winning position：
b1） 17 ．．．留b7 18 合 $\mathrm{d} \times \mathrm{b} 5$ 気 a 619 a 4 ．Black has no defence against the deadly threat 200 D 5 ．
 Q b 720 a 5 算c6（if 20 ．．．甾 d 8 ，then White has the winning continua－ tion 21 （0）d5） 21 号a4．White will quickly convert his initiative into a win．
c） $16 \ldots \mathrm{~g} 6$ is a possibility mentioned by Amelung and quoted by Bachman．White has many ways to win；Amelung begins with 17 g 5 ．
d） 16 ．．． 0 a 6 seems to me relatively the best：


 unclear；Black can defend himself．
 hopeless for Black） 18 © $\times b 5$（D 19）．For the piece White has two pawns and an irre－ sistible attack．

17 （2d5（？）
＂The weakest player today would be clever enough not to overlook the win of a tempo with 17 d 4 ．If it were followed up
 with 18 气d5，White wins in a few moves． Anderssen moved 17 ©d5 because he couldn＇t escape his time，but even where he plays badly，his imagination moves us to wonder．＂It is interesting to note that this remark of Réti＇s（the only sound one he made about the game）has been copied universally by later commen－ tators，although they pass it on by rote．

Almost all the analysts have enthusiastically given this move two exclamation marks．Only Bachman notes：＂This move is considered to be very clever，but is not the strongest．＂Actually，it is a big mistake and throws away the win that can be reached in at least three ways：
 20 gel White wins already by his extra material）
 M．$\times \mathrm{c} 2+23$ 署h h f6 24 気 $\times \mathrm{f} 6$ ，and Black will soon be mated．
b） 18 皿 3
b1） $18 \ldots$ … $\times$ a1 +19 훕 g 2 씁b2（after $19 \ldots$皆 $\times \mathrm{g} 1+20 \times \mathrm{l} 1$ White＇s attack is too strong as 20


## Anderssen rightly believed that it

 was important to occupy the d6 point；but he wasfar too generous with his pieces． It seems to me that this was a common fault among the players of that century．
．．． $0 \times \mathrm{g} 121$－ $0 \mathrm{~d} 6+$ leads to mate in three and 21 © $\mathrm{c} 7+$ wins a lot of material） 20 人 $\times \mathrm{c} 5$ （other continuations also lead to a win） 20
 （ 22 ．．．Qxc1 $23 \mathrm{Nd} 6+$ and mate in three） 23
 Polihroniade who continues 24 ©c $7+$ which， though ponderous，also wins） $24 \ldots \mathrm{~d} \times \mathrm{c} 525$ 쓸c8 mate．

b2） 18 ．．．d6
b21） 19 आel wins prosaically，for example 19 ．．．Qxf5 20 exf5

 mate（Polihroniade）is more elegant．
c） $18{ }^{3} \mathrm{el}$
 by infiltrating Black＇s position with his queen on f7） $20 \times 1 \times 5$（or 20
 wins．
c2） $18 \ldots$ ．．．${ }^{2} 7$
c21） $19.0 \mathrm{c} 7+$（Polihroniade）
 0xf6 23 亿xb7 and White wins．

同 $\times \mathrm{g} 122 \times \mathrm{kl}$（Polihroniade）maintains material equality，but of
 ©h6 24 g 5 and White wins．
c22） 19 d 4 ．Black＇s position rapidly falls apart．
Anderssen rightly believed that it was important to occupy the d6 point；but he was far too generous with his pieces．It seems to me that this was a common fault among the players of that century．In the rush to deliver checkmate，they disre－
 garded the need to maintain a semblance of material parity．In a digression，I turn your attention to two of the many other instances I found of this syndrome，both from Anderssen＇s games．

Diagram 22 shows the position in Mongredien－Anderssen，Manchester 1857 （offhand game）after White＇s 16th move．

With 16 ．．．若8 8 Black simply and ef－ fortlessly wins White＇s queen； 17 Mh6 fails to $17 \ldots$ ．．． $0 \mathrm{~d} 3+$ and $18 \ldots$ ．．． g 3 mate．White must resign．

Instead Anderssen moved $16 \ldots$ ．．．$\widehat{\text { d }} 3+$ ？？
＂Beautiful and well calculated，＂writes von Gottschall，and G． Pollack（Weltgeschichte des Scbachs，Vol．4，part 1，game 136）chatters， ＂A splendid and far－reaching combination that ensures victory for Black．＂




 striking that 23 ．．．M．M4＋，a move given by H．von Gottschall，wins more quickly．If 24 ［24 0 f $3 \times 5$ is now fatal for White］，then
 von Gottschall＇s suggested continuation $24 \ldots \times \mathrm{A} 3+25 \mathrm{c} \times \mathrm{d} 3$ 甾f4＋． The move in the game deserves a question mark because，while it also leads to a win，it is not as incisive） $24 \times f 5$ ．

Here 24 ．．． $\begin{aligned} & \text { M }\end{aligned} \times f 5$ won without much difficulty－variations are not necessary．However，Anderssen played 24 ．．．씁 $\times g 2+25$ 霉d3 씁g3＋ 26 붑c4 b5＋27 붑c5 $\times f 6$ and even managed to lose： 28 号ae1＋

曷 $\mathrm{e} 7+37$ 昷g8，etc．

Here is another example．Diagram 23 is from Anderssen－G． Neumann，Breslau 1864 （offhand game），after Black＇s 26th move．

With 27 ©e2 White could have started a decisive attack；there is no good answer to 28 品 f3（and if necessary）， 29 品 af1， 30 莹h3， as Black is unable to move： 27 ．．．घg 8 with the idea of $28 \ldots$ ．．． 0 f8 does not work because of 28 e $7 \times \mathrm{d} 4$（if $28 \ldots$ ．．． m 7 ，then 29 f 3 has the threat 30 씁 $\times h 7+$ ） 29 包xd4 ${ }^{\mu} f 730$

 36 包f3 mate．

$23 \quad$ Anderssen－Neumann

Anderssen played instead 27 e7？Now Black could have obtained the advantage with 27 ．．．$\times \mathrm{d} 4$ ：



昷 $\times \mathrm{g} 335 \mathrm{~h} \times \mathrm{g} 3 \mathrm{gc} 8$ is hopeless for White） $30 \ldots$ ．．．$\times 131$ M $\times \mathrm{m}$（ 31

莫e8．Black has good winning chances．

Black，however，answered 27 e7？with 27 ．．．䒤g8？；now after 28 ©e2 everything was in order： 28 ．．．甾f7 29 g f3，and Black resigned．

## Kieseritzky had the right idea ．．． the plan was right，but the execution was faulty．

It is not so surprising that the swashbuckling players of the 19th century would overestimate the dynamic potential of their attacks：as the above examples clearly show，the art of defense had not been well developed．Other material on this theme can be found in Réti＇s Mas－ ters of the Chessboard（1930），pp．20－22．

I now return to the game．
18 ．．．$\times \mathrm{g} 1$
＂Black obviously thinks that he is playing Schlagschach［a chess variant］and that he must take every White piece on the board．But still it is unbelievable in this dangerous situation to displace his bishop by taking the rook on g1．It is very doubtful that White could have


The idea that 19 ．．． $\begin{aligned} & \text { ubb2 } \\ & \text { is strong comes from Steinitz；Réti }\end{aligned}$ copied it without acknowledging the source．However，the modern master had not fully grasped the position，for after the self－evident 20量d2 Black＇s only move is $20 \ldots \times g 1$ ，a move that we will examine later．

Kieseritzky had the right idea－White＇s attack is so strong that only a great preponderance of extra material is suitable compensa－ tion for Black；then he has survival chances if he is not quickly mated． The plan was right，but the execution was faulty．

Many commentaries refer to Steinitz＇s 19 ．．． $\begin{gathered}\text { Mbb2，but I have read }\end{gathered}$ few writers who have analyzed the consequences．An exception is L． Bachman who gives the following variation as winning：


 34 甾f8 mate and notes：＂Against other defensive continuations White maintains a strong attack．＂

His variation，unfortunately，does not hold water．After $20 \times c 5$
 Black can defend with $25 \ldots$ 씁f8，and his material surplus guarantees him the victory．
 22 ．．．留f8：e．g． 23 §d6（other moves are worse） 23 ．．．f6 24 g 5



b）The defence of the c2－pawn by 20 号c1 is also insufficient． After $20 \ldots$ ．．． $21 \times c 50 \times 15$ the hanging rook is awkward；if 22 exd5，then the answer $22 \ldots$ ．．．$\times \mathrm{g} \times 1$ slams the door on White＇s designs of 23 씁e3＋क्ष日，d8 24 b6＋．
 This move was mentioned by Amelung in the Baltische Scbachblätter． Bachman quotes the following variations：

 and White wins．If 20 ．．． 1 b7 21 Qxc5
 ＊itd8 25 ge5，and White wins． 20 gld does not work due to 20 ．．．g6 21 尚d2 g×f5 22造x 5 当e5．＂

A zealous player from Mariestad by the name of Bengt Claesson studied the same
 key position；his results were published in Tidskrift for Scback in 1965．He examines seven possible replies to 20
 the first two variations can be dismissed．If White can play $21 \times 5$ ， he wins；his attack is worth more than the exposed rook because Black＇s corner pieces on h 8 and a8 are not doing anything．We should also look at 20 ．．．b7，which is not analyzed by Claesson but is mentioned by Amelung：
c1） $20 \ldots \mathrm{~b} 721 \times 5 \times \mathrm{d} 22 \mathrm{e} \times \mathrm{d} 5$ and now：
c11） 22 ．．．包a6（Black is mated after 22 ．．．宝h6 23 Me3＋훕 d 8

昷c3 Mc5 $27 \times g 7$ and White wins，because 27 ．．．昌c8（D 25）（27 ．．． ©b4 28 c 3 is hopeless for Black） 28 号e8＋

c12） 22 ．．．© E d8 23 道 d 4 （Amelung gives 23 쌉e3 but Black has a defense in 23 ．．．气a6；if 23 㽞e1，then $23 \ldots$ ．．． 24 or $23 \ldots$ ©f6 is possible） 23 ．．．算b4＋ 24 皿c3 留c5 （against other plausible queen moves White has $25 \times \mathrm{m} 7$ ，and Black loses without com－ pensation the rook on h 8 along with all chances of saving the game） 25 昷 c 5


25
 씁a3＋leads to mate） 26 d 4 씁f8 27 씁c3＋©b7（after 27 ．．．气c6 28
 M$\times \mathrm{d} 6+$ 骨 $\times \mathrm{a} 531$ M m 8 and White wins．
c2） 20 ．．．g6
c21）Claesson recommends 21 Eel for White；however the situation after $21 \ldots$ ．．． $22 \times \mathrm{l} 7 \mathrm{C} 523 \mathrm{exd} 5+$ 莦d8 is not that clear to me：
c211） 24 今d6 会h6 25 Me3 ©a6．Black can defend himself．
 able to win eventually，but Black can make matters difficult．
c22）The simplest reply to $20 \ldots \mathrm{~g} 6$ is 21 毘b1： $21 \ldots \mathrm{~g} \times \mathrm{f} 522$亘 $\times \mathrm{b} 2$ 是 $\times \mathrm{d} 623 \mathrm{e} 5 \times 24$ 甾e3 d6 25 d 4 要d8（also hopeless is $25 \ldots$
 $26 \mathrm{~d} \times \mathrm{e} 5$ and White wins as he pleases．
c23）Another of White＇s possible replies to 20 ．．．g6 also seems convincing： $21 \times 105 \mathrm{~g} \times 5522 \mathrm{exf} 5$ ，and now the move $22 \ldots \mathrm{~d} 6$ seems to offer chances of holding out，but after 23 甾e4＋曷d7 24㿽d4 留a3 25 吕e1 White wins easily．
c3） $20 \ldots \times g 1$ ．The biggest disappointment for me with Mr ． Claesson＇s analysis is in this variation．According to him，now follows ＂ 21 e 5 and White wins as in the game．＂ However，after 21 ．．．日a6（D 26）I have not been able to find a win for White：
 Black＇s king finds a haven at b7； 24 合e6 can be met by 24 ．．．包h6．
c32） 22 包 $7+$ 为 d 8
 followed by 25 包 $6+$ was threatened） 24 M Ma8 $15+$ ．Black is in no danger of los－

$26 \square$
Analysls ing；it is easy to see that White must take perpetual check．
 M $\times \mathrm{cc} 2$（26 ．．．씁c1＋forces a draw）．Black has nothing to fear．

There remains the question of whether White can do something more with bishop moves from d6；Black must be on guard against the threat of 23 分d $6+$ ．
c33） 22 （ 7
 perpetual check；White cannot accomplish anything more．
c332） 22 ．．．d6 opens a flight square for the king；I see no winning continuation for White．
 \％f8．White suffers from an embarrassing lack of material．
c35） $22 \times \mathrm{b} 8$ 道 523
c351） 23 ．．．邑c8 24 今 $\mathrm{Ag} 7+$ 夷 d 8 25 M$\times \mathrm{f} 7$ ．The mate threat on e 8 is deadly； after $25 \ldots$ 昷b4＋26 26 pawn on c2 is covered．
c352） 23 ．．．©h6 24 气 $\times \mathrm{g} 7+$ 客 d 8
 White wins．
c353） $23 \ldots$ ．．． d 8 is the correct defense．After $24 \times 1$ 苗c8（Black cannot

 10 is also grim） 25 Me3（D 27）Black has two defenses to the


 Black consolidates．





 Mab $\mathrm{b}+$ is a draw by perpetual check．
c3532） 25 ．．．邑c6 is an inter－ esting winning try；if 26 包d6 Black cold－ bloodedly replies $26 \ldots$ ．．．$\times$ a2，and if 26 Mg $\mathrm{M} 5+\mathrm{f} 627$ ㅆg $\times \mathrm{g} 7$ White must be careful after 27 ．．．M M $\times 5$（D 28）．
c36） 22 助4
c361） 22 ．．．M M $\times b 4+23$ 包 $\times b 4$ ．
White picks up an additional rook and ob－ tains a winning position．

$28 \square$
Analysis
c362） 22 ．．．씁 $\times \mathrm{e} 523$ 包 $6+$ 씁 $\times \mathrm{d} 6$
 \＄b7 29 M $\times \mathrm{h} 7$ ．White wins．
c363） 22 ．．．气h6 23 今d $6+$

Mb4＋（there is no other way to prevent the threatened mate） 27
 stand White＇s attack．
c3632） $23 \ldots$ … f 824 g 5 ．
White＇s attack is overwhelming．
c364） 22 ．．． $3+$ ，however，is very unpleasant for White（D 29）．
 lose to 23 ．．． 0 c6 gaining a tempo on the loose bishop on b4 and giving Black valu－ able time to complete his development to construct a winning position．

c3642） 23 읍 $\times 3$ 씁 $\times e 5+24$
 29 M $\times \mathrm{g} 6$ 㽞he8．Black has enough extra material to win．

 씁ㄷㄷ 27 包d6＋씁 $\times \mathrm{d} 628$ exd6
 too White＇s depleted material should lead to a speedy loss．

Other bishop moves on the 22nd move offer no better prospects．

I cannot find any other serious tries af－
 had played this line，the game would prob－ ably have been forgotten，whereas now White wins in spectacular fashion．

19 e5 M $\quad$ Ma1＋
19 ．．．且6 is no help here； 20 （2c $7+$
 M $\times \mathrm{Ba} 8$ 씁 $\times \mathrm{c} 223$ M $\times \mathrm{mb} 8+$ White has an extra
 piece） 22 客e2 leads to a variation already analyzed．

20 霉e2（D 31）気 6 ？
After this move White wins beautifully without any resistance． Other defenses are also easy to break through：
a） $20 \ldots \mathrm{f} 6210 \times \mathrm{g} 7+\mathrm{Bf} 22 \mathrm{mf}$ ，and Black is


31 mated；e．g．， 22 ．．．
 Gottschall）．
 © $06+$ and mate in two moves．
c） 20 ．．． a 6 is a stubborn defence；Black leaves the b7 square free for his king，so that the continu－
 ．．．今h6 23 今e6＋\％to 8 and White no longer has a

 and Black has at least a perpetual check（Deutsche Schachzeitung，March 1880，p．87）．Correct is 22 © $\times$ a6（D 32）（a move apparently found by Falkbeer， though according to some sources，such as von Bardeleben and Mieses， p．288，the move comes from H．Eichstädt in Kreuzburg）with the threat of $23 \mathrm{c} 7+$ followed by 24 d $6+$ ． Black has three different defensive tries：
c1） 22 ．．．씁 3 is the only line that Falkbeer examines；after $23 \mathrm{C} 7+\mathrm{M} \times \mathrm{M} 724$
 decisive： 25 ．．．©c6（ 25 ．．．昷 526 包 d 6 昷 $\times \mathrm{d} 6$

 （Falkbeer）； 27 M M G 8 also wins．
c2） 22 … 昷b6 23 M Ma8 M M 24


 seems to be decisive） $27 \ldots$ ．．． © b （ D 33）and White has a won endgame（Chigorin）．
c3） 22 ．．．Máa2（Black covers f7） c31） 23 今b4 气c6（other moves are hopeless） 24 包×a g6 25 亿b4 g×f5 26气xc6＋d×c6 27 ㅆ⿴囗十 $\times c 6$ 昌c8，and Black can still struggle．
c32） $23 \mathrm{c} 7+$ 酉e8 24 它 4 is sim－
 （this recurrent motif is noteworthy） 27
 against the threat 28 甾b7；White wins．

After Black＇s 20th move White an－ nounced mate in three moves： 21 $0 \times g 7+$ 읍d8 22 留f6＋包xf6 23 皿 7 mate（D 34）． Black resigned．

1－0
The references given in the notes above should suffice as hints for further work with regard to the content of the game．It is time
 to evaluate the earlier analyses．

The game we are discussing comes out of such a gray past that the generation of players whom we call＂the old masters＂already treated it as an example of the ability of old－time players．The oft－ quoted article by F．L．Amelung in the Baltische Schachblätter，Vol． 8 （1901），represents a high point in the analysis of this game＇s content． He states that White has a winning position after 4 ．．．b5；the follow－ ing notes believe that neither side could have improved on its play（p． 493）．While I cannot agree with this，I am full of admiration for the neat method and thoroughness of his analysis．

Next，Richard Réti ventured an evaluation of the game．He did not draw upon Amelung＇s work，and arrived at his own decisive opin－ ions without serious analysis．My views about his opinions can be found throughout this article．Réti must have been reacting to the polemical works of F．Gutmayer（an unimportant yet influential writer who considered only Morphy and his contemporaries as true chess artists）．In Réti＇s time，successful masters were considered＂decadent profiteers．＂

Perhaps it would be useful to hear the opinion of the legendary giant Emanuel Lasker on this game．He says in Lebrbuch des Schachspiels （Berlin 1926）：＂The game from Black＇s 17th move on is undoubtedly fine；the mate is extraordinary：three minor officers prevailing in view of Black＇s entire army is nothing short of unbelievable．The beginning of the game，however，insults our feelings，as our prede－ cessors well recognized．＂

In newer books the tone is a little different，but is mostly one of

## The quality of analysis on "The Immortal Game" has fallen considerably over time.

condescending admiration such as one uses to praise a five-year-old who has correctly added six and seven.

It seems useless to me to criticize this game merely on the basis of later prejudices, without thorough analysis. I will give my own impression of the game.

Both masters showed deep insight into the hidden dynamic possibilities; they saw much more than their critics 75 years later. Naturally, they execute their ideas inexactly and with some mistakes. The quality of their chess throughout the whole game was unwaveringly constant; in no way was the beginning of the game played badly and the finish played well as Lasker said.

It strikes me as a greater deficiency in the play that the strategic actions do not consider the whole board but rather have a skirmishing character. The move of the white knight to f 5 is a typical example. On the other hand, the players understand enough to include all the elements of the position in their tactical enterprises. White seems to show a better sense for pawn structure, development, and square coverage than for followup play, but one can make no reliable judgment about this on the meager evidence this game affords.

I now come back to the purpose mentioned at the beginning of this article, to evaluate the earlier works about this game that I have examined. It appears to me that the quality of analysis on the game has fallen considerably over time. Kieseritzky, Falkbeer, and Steinitz drew attention to critical positions and paved the way to a detailed consideration of the problems in those positions. F.L. Amelung tried to collate their knowledge into a broad commentary; later L. Bachman compiled another summary that is useful to the researcher.

A sharp break came at the start of the 20th century, when painstaking analysis gave way to superficial journalism. Réti and Lasker restricted themselves to general remarks. Most modern chess writers limit themselves to repeating information from the old works in successively thinner extracts, often without mentioning their sources. E. Polihroniade gives a good summary and explanation of the available materials, but without creating a single new sentence. Other contemporary adaptations are deplorable.

In closing, I would like to draw attention to the lack of bibliographical aids in the realm of chess literature, which becomes obvious to anyone who works in the field: one must depend on one's own hazy memory and the chance resources of one's own library. The copy of Amelung's essays that B. Segebarth (Schwerin) placed at my disposal was a great help to me in revising this article. I would like to thank him warmly. I would be very eager to look at the publications numbered $1-6$ and 8 in the reference list below. I found them mentioned in other sources but have never actually seen them. I also looked through publications not listed, especially textbooks and be-
ginners' books, but passed them over as not worth mentioning. But surely some worthy analytical works remain unknown to me. I would be grateful for any references to such works.

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# Lessons from a Single Ending 

## Mark Dvoretsky

At the chessboard we operate by concrete moves and variations, which arise from our general experience and understanding of the game. To a significant degree, the development of our chess understanding depends on training work completed earlier. In order to make this work productive, it is not enough to memorize specific information. What's important is that one develop chess models, or mental images, from this base of knowledge. The more vivid the images, the longer they will stay in memory-especially original and deep general ideas, demonstrated in clear, convincing variations.

Many thoughts valuable for our development as chess players are scattered about in game commentaries written by the great chess players. When studying such commentaries, I look at the words even more than the moves. As soon as I see the gleam of an original, interesting idea, new to me in some way, I write it down along with the position in which it is carried out. In the same way, I write down examples that successfully demonstrate well-known ideas in clear and memorable form. Thus I have managed to gather a wide collection of the most varied chess ideas, illustrated by outstanding examples.

By the way, when young chessplayers read a book or listen to a lecture, too often they pay attention only to variations, letting slip past their eyes (or ears) the author's judgment. I am convinced that for this reason they miss a great deal; usually the most valuable information is concentrated in the words. Sometimes it is worthwhile to

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stop and focus on the simplest, even the most banal things. By going over them and discovering new subtleties, you strengthen your understanding of chess.

Of course, things are more complicated in life than on paper. The majority of commentators in journals and books are superficial, and sometimes simply frauds. One time an experienced master explained to me how he works. If he can hold two fingers to a page of text, and only moves are underneath them, then it is time to put in a comment. He adds something like "The Spanish Game always leads to a complicated, tense struggle"-and his fee grows by a ruble. Learning to distinguish genuine perceptions and thoughts from such literary chaff will come in handy for you not only in chess.

Sometimes we see the other side of the picture. An author has interesting ideas, but lacks the strength to illustrate them with worthwhile examples. If a grandmaster comments on his own games, as a rule this problem doesn't arise: his general ideas are tightly connected to what is going on over the board. But as soon as he decides to write an article or book on a given theme, the difficulties immediately begin, because suitable material might not be at hand.

I remember leafing through a book by Alexey Suetin called The Path to Mastery (an English translation was published in 1982 by Pergamon Press as Three Steps to Chess Mastery). The titles of several chapters seemed very interesting, for example, "Play by analogy," "On hopeless positions," "The lack of consistency," and "Problems of using time in the choice of a move." These are vital questions of chess mastery. The book would have been excellent if the author had managed to give some answers, but unfortunately he goes deeply into hardly any of these topics. Most of his examples are either bland or superficially analyzed, and for the most part only loosely connected to the theme under investigation. Without adequate analytical material it is impossible to come to any meaningful conclusions. And from where could Suetin get good material? He gave up practical play long ago and doesn't do any real training work. Something, of course, must still be left in his memory-but he connects to a chapter title the first episodes that come into his head, whether they are relevant or not. Looking at a section, you are curious to see how the author will explain the problem at hand. You read farther and find he doesn't understand it at all; he's just writing in generalities.

Probably the right order for such work is not from themes to examples, but the other way around: from a substantial, thoroughly analyzed example to the general conclusions that flow out of it. In just this way, we will study a classic ending that I offer for your attention-by the way, it is one of my favorites.

Our inheritance from famous masters of the past is an invaluable resource for self-improvement. It is important not to limit yourself
to playing the book variations quickly over the board，but to try to verify and understand them．Then from even a small amount of material you can get a large amount of valuable information．

## Capablanca－Alekhine，New York 1924 French Defense c12








1
Capablanca－Alekhine，after 38 ．．．c6





White to move．He has an extra pawn，but re－ alizing this advantage is not simple．（Remember the half－joking，half－serious aphorism of Tarrasch， ＂Rook endings are never won．＂）Let＇s take a look at the candidate moves in the position．It is useful at the start to look for the larger ideas－otherwise， you overload yourself too early with calculations， and you miss something important．

The move 39 c 5 springs to mind．It threatens 40 登 $\mathrm{d} 6+$ ，winning the pawn on c6．A second sug－ gestion is 39 city d in the hope of getting the king to c5．Still another plan is 39 h 4 with the idea of $40 \mathrm{~g} 4,41 \mathrm{gh} 2$ ，etc．The white rook will occupy an ideal position behind the passed h－pawn．

As you see，White has several tempting possibilities．If we are to make a reliable choice，we must consider the opponent＇s counterplay．

Let＇s go in order，starting with 39 c 5 ．On 39 ．．．晏e5？！follows 40登d7．In the case of $39 \ldots$ ．．．
 Bf4！with the followup 41 品d6＋．Alekhine showed the best defense：
号a5（D 2），followed by 42 ．．．登a3＋， 43 ．．．笪 $\times 22+\ldots$ With such growing piece activity， Black will not lose．

Let＇s take a look at 39 합d4．Obviously the king cannot be let into $c 5$ ．It doesn＇t help to play 39 ．．．ㅐ⽇ㅂd 6 ？ $40 \mathrm{e} 5+$ ，so the reply 39 ．．．氜d8＋is forced．After 40 宴c 3 the threat c4－c5 becomes more serious，because the c5 pawn can be defended by the king．Nev－ ertheless，White＇s idea is not hard to

$2 \square$ Analysls
counter： 40 ．．．苗h8！ 41 h 3 苗h5（D 3）（also deserving attention is $41 \ldots$ 号h4）．The rook is exceptionally well placed on the fifth rank， where it controls the square c 5 （if 42 cible then $42 \ldots \mathrm{a} 5+$ ）and is able to attack any enemy pawn．It is clear that White has achieved nothing．

The move 39 h 4 still needs to be checked．The answer 39 ．．． E h 8 ！suggests

$3 \square$
Analysis itself（bad is 39 ．．．f5？ 40 exf5＋）．White plays 40 g 3 ，preparing 41 G h 2 and 42 g 4 ．How can this plan be countered？ The same maneuver of the rook saves everything： 40 ．．．甾h5！ 41 品h2
 ga3＋and $41 \ldots$ ．．．$\times \mathrm{a} 2+$ ．And on 42 覃f4 follows $42 \ldots$ f6，preparing in case of g3－g4 to exchange the opponent＇s most dangerous pawn with $\mathrm{g} 6-\mathrm{g} 5+$ ！

By straightforwardly pursuing any of the plans we laid out，White achieves noth－ ing．So how should he continue to play for a win？Note carefully that Black saves him－ self everywhere by moving the rook to the fifth rank．So let＇s think about prevention－ let＇s try hindering the main defensive idea of our opponent．

$4 \square$

Alekhine suggests the surprising move 39 h 3 ！！Now in the case of 39 ．．． g h8 the h－pawn is not hanging and White answers 40 c 5 ．After $40 \ldots$ 䈶h4，White gets no significant
 strong is 41 号 d 8 ！At the same time，Black now has to consider the

 Eb8 42 c5

 fifth rank has become too short） 40 ．．．茴b2 41 g 4 （also good is 41
 with excellent chances for White to win．

It is characteristic that Capablanca，a genius of chess intuition， doesn＇t manage to make the correct decision here．Alekhine is a chessplayer of a totally different frame of mind．A move like $39 \mathrm{~h} 3!$ ！ cannot be made intuitively from＂general impressions．＂It can only be found by a concrete investigation of the depths of the position．

Many years ago I helped Botvinnik lead an exercise in his school． At the request of Mikhail Moiseevich I prepared a large endgame exercise for the young Garry Kasparov，which included independent

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analysis of this Capablanca－Alekhine endgame．Garry found still an－ other method to interfere with Black＇s bringing the rook to the fifth rank，the move $39 \mathrm{~g} 3!!$ I like it very much，perhaps even more than the move recommended by Alekhine，because it contains the active follow－up idea 40 h 4 ！And there don＇t appear to be any minuses．For example，if $39 \ldots \mathrm{~g} 5$ ，there is the pleasant choice between 40 h 4 and 40 f2 with the threats 41 ff or 41 ghd 4 ．Further，
莫 $\times c 6$ 品 $\times h 243$ 登a6） 42 h 4 with advantage to White． Now let＇s look at how the game proceeded．
 42 g 4 ？홉e5； 42 헙d4？c5＋．
42 ．．．f6！（D 5）
The main danger has been removed．If 43 g 4 there is the answer $43 \ldots \mathrm{~g} 5+$ ！The game takes on a maneuvering character．Capablanca knew how to put one problem after another in front of his oppo－ nent，so Alekhine had to put up an exceptionally careful defense．

Otherwise after $44 \mathrm{c5}$ the rook would be cut off from the kingside and couldn＇t interfere with White＇s playing g3－ g4 and h4－h5．

## 44 c5

A double－edged move，but otherwise he can＇t improve his posi－ tion．White limits the mobility of the enemy rook，but his own rook will be bound to the pawn on c 5 ．

## 44 ．．．号h5 45 号 $\mathbf{c} 3$

Threatening an advantageous exchange of pawns： $46 \bumpeq{ }_{\square} \mathrm{a} 3 \times \mathrm{E} \times 5$ 47 登 $\times$ a7．




6 －Capablanca－Alekhine，after 49 （g4

箱 5 ？ 49 g 4 ．

49 急g4！（D 6）
White wants to strengthen his position by and g3－g4．How can his opponent counter this plan？

49 ．．．宴f7！ 50 登c4！
In answer to 50 oble Alekhine had prepared
 pawn on h4 and shuttle the rook back and forth on h5 and e5．

## 50 ．．．좁g7！

White＇s subtle maneuvers have forced the black king（who must control the g6 square）to abandon the center．Capablanca sees that the moment has
come to transform his advantage．He gives back the extra pawn but maximally activates his pieces and drives back the opponent＇s king to the edge of the board．

## 51 乌 d4！

Not good is 52 ．．．葛h6？ 53 畄f7．
53 覃f4
More accurate is 53 吕a7，because Black could now play 53 ．．．$\boxed{\square}$ c 2 ！？

White has strengthened his position and now is ready to take decisive action．The logical con－ tinuation of his strategy would be 56 會e3！号c3＋

$7 \square$ Capablanca－Alekhine，after 55 ．．．tgg

 rank，the passed a－pawn should decide the game） 59 ala（or 59 h 5 ）． According to Alekhine Black can hold on，but in any event he would have to defend with extreme accuracy．

Unfortunately，Capablanca didn＇t want to sharpen the game and chose another continuation that leads to a forced draw．

## 56 g 4 ？！g5＋57 h $\times \mathrm{g} 5$ 总 $\times \mathrm{g} 5$ ！

Of course not $57 \ldots \mathrm{f} \times \mathrm{g} 5+58$ 莦e3－there＇s no reason to give his opponent a passed pawn．



In this position a draw was agreed due to the
 byg（if 65 ．．．g4 66 e 5 Black would have to defend a
 （ivef both draw） 66 ．．．为g6！

With what theme should we connect the Capa－ blanca－Alekhine endgame？If you think it over a bit，you＇ll see that there is no single answer．In the process of studying this rough gem of an ending， we uncovered many facets that are all important for
 the practical player．Let＇s go over what we found．

1．This is an excellent example of typical rook－endgame play． Among many features common to these endings，I will point out one relatively trivial idea，expressed here very clearly：an open line that rooks aim to get onto can be not only a file，but sometimes a rank．

2．It is an example of accurate defense．It is instructive to follow how Alekhine，not losing his presence of mind in a difficult situation， move after move patiently solved the problems before him．

3．It illustrates various aspects of the problem of realizing an

## Even if you have <br> excellent <br> intuition, it is <br> necessary to <br> develop in <br> yourself an ability <br> continually to go deeply into the concrete details of a position.

advantage. Here we saw the importance of searching for and anticipating your opponent's counter-chances in the very beginning of the endgame. Then we saw how White strengthened his position to the limit before changing the overall picture of the game, transforming his advantage at the proper time (move 51). Finally, there was the eventual need (move 56) to reject positional maneuvering and choose a concrete path based on exact calculations.
4. It demonstrates the importance of prophylactic thinking. Without this, of course, it is impossible to find the brilliant positional solution on the 39th move. In the rest of the ending, Alekhine built his defense by considering all his opponent's active plans and how to counter each of them.
5. It is an occasion for thinking about chess players with an intuitive style of play. We saw which decisions were difficult or completely off-limits for such a player. We draw the conclusion that even if you have excellent intuition, it is necessary to develop in yourself an ability continually to go deeply into the concrete details of a position and, when necessary, to calculate variations exactly.

For a chessplayer it is very important to evaluate the strengths and weaknesses of an opponent objectively. The opponent's previous games will form the basis for this evaluation. A few of these will turn out to be especially informative.

In the 1920s, Alekhine was preparing himself to duel with Capablanca for the world crown. This is what he concluded after the New York 1924 tournament:
"In this tournament I made one comforting observation, which for me was a true discovery. Namely, that although in the first game with me Capablanca outplayed me in the opening, achieved a winning position in the middlegame and preserved a significant part of his advantage in the rook ending, in the end he let victory slip from his grasp and had to satisfy himself with a draw. This led me to further thinking, taking into account that Capablanca very much wanted to win the game, as he was trying to catch Lasker, who was leading the tournament and the day before had beaten me. I was convinced that if I were in Capablanca's place, I would have brought the matter to victory without fail. In a word, I noted in my opponent a small weakness: the growth of uncertainty in the face of stubborn resistance. I had already discovered earlier that Capablanca from time to time committed minor inaccuracies, but I did not suspect that he was unable to free himself from this deficiency when he was fully concentrating his energies. This was an extraordinarily important discovery for the future!"

Later, in the well-known article "The New York 1927 tournament as prologue to the battle in Buenos Aires for the world champi-
onship" which introduced his book of the tournament (see also $A C 7$ \#1, pp. 97-98), Alekhine once more underlined the role which this game with Capablanca played for him: "This game, by the way, was the starting point for my understanding of the chess individuality of Capablanca."

I will add a few more of Alekhine's comments on the style of his historic opponent, confirming the conclusions we have already made. They might seem overly sharp, which can be explained by the wellknown strained personal relations between the two champions. But objectively, these judgments appear fair to me (of course, only "for the most part," and with the caveat that we are talking about the very highest class of play).
"... Capablanca by no means is an exceptional master of the endgame. His craft in this stage of the game is for the most part of a technical character, and other masters in a few particular areas of the ending excel or excelled him (for example, Rubinstein in rook endings)."
"... In the games of Capablanca one has to notice over the years a less deep understanding of the details of a position, and the cause of this appears to be an unshakeable (I speak all the time of the period before Buenos Aires) confidence in the faultlessness of his intuition. The saddest thing for Capablanca was that his system of playing "good" moves was almost without exception sufficient, because for the most part it was opposed by positionally hopeless weapons. By going unpunished while choosing moves that were not the best, on the one hand he lost the habit of concentration during the game which is the only guarantee against the powerful forces of error, and on the other hand, his self-confidence grew to infinity and crossed almost into self-worship ..."

Not all games you will find in books and magazines are as valuable as this one between Capablanca and Alekhine. But clearly, a single ending can teach many lessons.
"This game, by
the way, was the
starting point for my understanding of the chess
individuality of Capablanca."

## LITERATURE

# Cooks, Forks, Waiters 

## Chess Problems and Vladimir Nabokov's The Defense

Daniel Edelman

Vladimir Nabokov (1899-1977) is unique in literary history for his use of chess themes in both the structure and plot of a wide variety of significant works. Borrowing themes from problem composition and actual play, Nabokov incorporated hidden chess motifs in such novels as The Gift (originally published in 1938, but not translated into English until 1963), The Real Life of Sebastian Knight (1941), Bend Sinister (1947), Pnin (1953), Lolita (1959), Pale Fire (1962), and his autobiographical novel Speak, Memory (1966). The Defense (translated in 1964 from the 1929 Russian original, Zashchita Luzhina, or The Luzhin Defense) is Nabokov's most overt chess novel. It has often been classified, perhaps mistakenly, as one of his "simpler" tales.

In the 1930s, Russian émigré critics in Berlin praised Zashchita Luzbina without going into detail about its chess mechanics. In the 1960s, The Defense attracted mixed reviews from its English-reading audience. Some critics compared it unfavorably with Nabokov's previous successes, the scandalous Lolita and the innovative Pale Fire. John Updike, in his 1964 New Republic essay "Grandmaster Nabokov," did not like the last third of the novel. He thought that the suicide of the protagonist Luzhin at the end was unjustified and avoidable.

Daniel Edelman's "Problems and Schemas: The Solus Rex Construction in Nabokov's Defense" received the Sobier Award for the best modern literature thesis by an undergraduate at Harvard University in 1991. Edelman is an International Master who received his M.B.A. degree from Columbia University.

Literary scholars in the last two decades have debated whether Nabokov novels such as The Defense are actually solvable puzzleslike detective stories or composed chess problems-or problems without solutions, open-ended enigmas created by a devilish author. Nabokov took great pleasure in listening to his critics' continual attempts to unlock the mysteries of his novels.

The current rage in Nabokov scholarship is the so-called "hereafter" school of thought. According to this school, characters in each Nabokov work are controlled by otherworldly forces. The expert reader is challenged to find hidden symbols from the afterlife. Advocates of this theory point toward the seemingly inexorable, fated death of Luzhin, who is swayed by the spectral hands of his deceased father and grandfather. However, the "hereafter" school overlooks the obvious chess archetypes of the novel. These archetypes point toward a chess-based interpretation, which will be developed in this article.

The Defense introduces Luzhin, age 12 in 1910, as a tantrum-throwing problem child unable to deal with the abrupt changes in his life. His family is moving to St. Petersburg where Luzhin will start school, but he runs away from the train station and back to the family manor. There he is forcibly seized by a black-bearded peasant, "future inhabitant of future nightmares" (p. 24). ${ }^{1}$ During a party in 1911 on the anniversary of his grandfather's death, Luzhin is first exposed to the game of chess by a musician who says, "What a game, what a game. Combinations like melodies. You know, I can simply hear the moves" (p. 43). Fascinated by the new diversion, Luzhin skips school to learn chess from his pretty aunt. On the way to her house, Luzhin passes by a shopkeeper's window containing three waxen ladies with pink nostrils, who seem to be staring at him (p.50).


As Luzhin's eyes have opened to a new hobby, they have shut to the real world around him. He does not perceive his father's affair with his aunt, and is scolded by his angry father for visiting her. Not so coincidentally, Luzhin's mother discovers the affair on the same day that Luzhin's aunt teaches him how to play chess. On another occasion, a schoolmate hits Luzhin while Luzhin watches a chess game in his classroom. Both times, "Luzhin noticed how unstable a thing chess was" (p. 50).

At 14 Luzhin suffers an illness that forces his father to take him to a spa in Germany, where the boy's talent is recognized at a chess

[^1]
## Unlocking the <br> mysteries of The Defense <br> begins with an <br> appreciation of the key element of deception in all of Nabokov's

works.
tournament. The narrative jumps ahead 16 years to 1928, when Luzhin is again visiting the resort after the death of his father. In the interim, Luzhin has gained in chess strength under the supervision of Valentinov, his manager, who acts as Luzhin's surrogate father. Here at the resort Luzhin meets the woman who will eventually become his wife, and he also contrives a "defense" against the opening of the brilliant Turati, an opponent he must face in an important tournament in Berlin.

The tournament duel between Luzhin and Turati is a clash of temperaments, a contest between modern and hypermodern. Both lead the pack "as if mounting the sides of an isosceles triangle and destined at the decisive moment to meet at the apex" (p. 125). In their climactic match, Turati does not employ his usual opening, and Luzhin's painstaking homework proves useless. Yet the game is a fantastic struggle of minds, a tug-of-war in which Luzhin seems to have the upper hand, though he must find his way through a "maze of variations" ( p .139 ). The turning point occurs not on the board, at any move, but within Luzhin's mind, as he is deep in thought (p. 139):
$[\mathrm{H}]$ e needed, it seemed, to make one last prodigious effort and he would find the secret move leading to victory. Suddenly, something occurred outside his being, a scorching pain-and he let out a loud cry, shaking his hand stung by the flame of a match, which he had lit and forgotten to apply to his cigarette. The pain immediately passed, but in the fiery gap he had seen something unbearably awesome, the full horror of the abysmal depths of chess. He glanced at the chessboard and his brain wilted from hitherto unprecedented weariness. But the chessmen were pitiless, they held and absorbed him. There was horror in this, but in this also was the sole harmony, for what else exists in the world besides chess? Fog, the unknown, non-being ...

Luzhin, driven insane by his sudden revelation, is treated by a black-bearded psychiatrist, who prescribes a cure consisting of the total renunciation of chess. He marries and lives a quiet existence with his wife's parents. However, slowly unfolding patterns in his life bring the grandmaster back to chess. These patterns are repetitions of the sequence of events that originally led Luzhin to insanity: the reappearance of a schoolmate, then of a Soviet woman who knew Luzhin's aunt, and finally of Valentinov, who plans to make a movie involving players from the Berlin event. Luzhin detects the pattern of repetition and fights to stave off his imminent doom by creating a defense, an unexpected diversion to mislead his unseen cpponent. He enters a store to buy a wax dummy, itself an absurd move, but a perfectly brilliant feint. Suddenly, Luzhin realizes that this scene also
happened before. It seems that there can be no escape. He returns to his apartment, locks himself in the bathroom, and jumps out the fifth-floor window. His body falls to the chessboard pattern of the tiles on the plaza below.

Unlocking the mysteries of The Defense begins with an appreciation of the key element of deception in all of Nabokov's works. In his youth, Nabokov was already an accomplished composer of chess problems. As he wrote much later in his autobiography Speak, Memory (p. 290):

It should be understood that competition in chess problems is not really between White and Black but between the composer and the hypothetical solver (just as in a first-rate work of fiction the real clash is not between the characters but between the author and the world), so that a great part of a problem's value is due to the number of "tries"delusive opening moves, false scents, specious lines of play, astutely and lovingly prepared to lead the would-be solver astray.

Starting from this devious background, Nabokov developed similar literary goals. He wanted not only to throw readers and critics ("solvers") off the track, but also to treat the cleverest among them to the thrill of solution after experiencing wrong turns, false leads, and crafty pitfalls. "Deceit, to the point of diabolism, and originality,
 verging upon the grotesque, were my notions of strategy," he confesses in Speak Memory (p. 289)—referring to his chess problems, but certainly also revealing his authorial norms. "Although in matters of construction I tried to conform, whenever possible, to classical rules, such as economy of force, unity, weeding out of loose ends, I was always ready to sacrifice purity of form to the exigencies of fantastic content ..." (pp. 289-290).

The problem in Diagram 1 was composed by Nabokov and was one of his favorites. ${ }^{2}$ He describes this composition on pp. 291-292 of Speak, Memory:

The unsophisticated might miss the point of the problem entirely, and discover its fairly simple, "thetic" solution without having passed through the pleasurable torments prepared for the sophisticated one. The latter would start by falling for an illusory pattern of play based on a fashionable avant-garde theme, which the composer
2. According to Nabokov's Poems and Problems (McGraw-Hill, 1970, p. 182), Nabokov created this problem in Paris in May, 1940 shortly before he emigrated to America. The key to the solution is 1 l c 2 ! ( $1 \mathrm{~b} 8 / \mathrm{n} \mathrm{c} 2$ !).
had taken the greatest pains to "plant" (with only one obscure little move by an inconspicuous pawn to upset it). Having passed through this "antithetic" inferno the by now ultrasophisticated solver would reach the simple key move as somebody on a wild goose chase might go from Albany to New York by way of Vancouver, Eurasia and the Azores. The pleasant experience of the roundabout route (strange landscapes, gongs, tigers, exotic customs, the thrice-repeated circuit of a newly married couple around the sacred fire of an earthen brazier) would amply reward him for the misery of the deceit, and after that, his arrival at the simple key move would provide him with a synthesis of poignant artistic delight.

Is The Defense truly a simple, "thetic" tale, as some critics have said? Or does an interpretation of The Defense involve twists and turns on the way to the correct solution, like one of Nabokov's chess problems? If there is indeed more to it than meets the superficial eye, what are the false leads, and where is the "synthetic" solution to the novel? Does Luzhin simply commit suicide? Or is he an artist like Cincinnatus C. of Nabokov's Invitation to a Beheading, capable of transcending this world to escape to the beyond? Is Luzhin's fate controlled by external forces, or is he simply crazy?

One of the most striking features of The Defense for chessplayers who read the novel is how strangely un-chesslike it is. The tournament play, the Turati encounter, and some of the descriptions of Luzhin's unusual habits together make the novel seem less like a reallife chess encounter, and more like a composed problem. It is also disturbing that the core combination, the strategy adopted by Luzhin's merciless opponent (be it Fate, the otherworld, the author, or Luzhin's own mind) is not a winning combination, but rather a repetition, a ploy used in over-the-board play to force a draw.

Nabokov writes in the novel that Luzhin discovers "the witty repetition of a particular combination, which occurs, for example, when a strictly problem idea, long since discovered in theory, is repeated in a striking guise on the board in live play" (p. 133). Is Nabokov twisting facts around? Is he using imprecise terminology that plays upon a chessplayer's specialized understanding of the words "combination" and "repetition?" Clearly, the author tries to construct a bridge between problems and play, but then erects a second bridge between play and real life. The reader's challenge is to achieve understanding by connecting Luzhin's life with the realm of composition. In Chapter 13, Luzhin realizes the horror of the evil stratagem unfolding before his eyes: "Just as some combination, known from chess problems, can be indistinctly repeated on the board in actual play-so now the consecutive repetition of a familiar pattern was becoming noticeable in his present life" (p. 214). Finally, in Chapter

14, Luzhin unlocks the meaning of this evil development. "The key was found. The aim of the attack was plain. By an implacable repetition of moves it was leading once more to that same passion which would destroy the dream of life. Devastation, horror, madness" (p. 246).

The repetition of key symbols in the novel (the wax dummies with pink nostrils, the black-bearded psychiatrist, old Russia, Luzhin's schoolmate, his aunt, Valentinov) serves to force upon Luzhin a pattern leading him back to the insanity that overcame him during the Turati encounter. What Nabokov is trying to do, perhaps, is translate one artistic realm onto another, so that the protagonists of his narrative descend from the "real life" of the novel into a struggle in the medium of chess problems. The one-to-one correspondence that Nabokov creates, through the use of metaphor, can best be seen after studying the author's background in over-the-board play and problem composition.

## Nabokov the Player

It is difficult to determine Nabokov's skill as a player, because hard evidence such as game scores, appraisals from opponents, onlookers, or expert contemporaries is scarce. Probably Nabokov was a mediocre player; his typical opposition seems to have been his father, father-in-law, and wife. In a poignantly recorded scene in Speak, Memory (p. 251), Nabokov recalls his escape from the Crimean Peninsula in April 1919, at the height of the Russian Civil War:

Over a glassy sea in the bay of Sebastopol, under wild machine-gun fire from the shore (the Bolshevik troops had just taken the port), my family and I set out for Constantinople and Piraeus on a small shoddy Greek ship Nadezbda (Hope) carrying a cargo of dried fruit. I remember trying to concentrate, as we were zigzagging out of the bay, on a game of chess with my father-one of the knights had lost its head,
 and a poker chip replaced a missing rook ...

In April 1926, the young émigré Nabokov took one of the 40 boards in a simultaneous exhibition given by Nimzovich at the Equitable Café in Berlin. According to the novelist, Nabokov had the upper hand when suddenly a patzer leaned over his shoulder and moved a pawn, a horrendous move. Nimzovich swooped back and took advantage of the blunder. The next week Nabokov faced Alekhine in another simul; the result is unknown, but presumably we would know if Nabokov had won or drawn. The future world champion would soon become an avid Nabokov reader, taking up the challenge
"Rubinstein was
so like Luzhin
that it was
difficult to
explain that I
didn't know
Rubinstein,"
Nabokov once
said.
of identifying the real-life prototype of Luzhin. (Alekhine's guess, Tartakower, was later dismissed by Nabokov-a deception?) The next year, Nabokov wrote an enthusiastic review of Eugene ZnoskoBorovsky's book Kapablanka i Alekbin for the émigré press, praising the work's original depiction of the two champions' clashing styles.

A single anecdote suggests that Nabokov was a rather weak player. The evidence comes from later years when the novelist was a college professor at Cornell. Max Black, a philosophy professor and expert chess player, sat down to play a friendly game with his colleague, fully believing that Nabokov was a strong competitor. To the amazement of both men, Nabokov was crushed in 15 minutes. A second game was contested; Nabokov was demolished in just 12 minutes. As Brian Boyd reports in Vladimir Nabokov: The American Years, Nabokov saw Professor Black frequently for the next 10 years, but never again broached the subject of chess.

## Nabokov the Enthusiast

Nabokov was quite familiar with the literature of chess. He was fascinated by the famous chess losers in history, perhaps as models for his Luzhin character. In August 1929, he and his wife Véra rented a Berlin apartment from General von Bardeleben, a relative of the chessplayer who lost a celebrated game to Steinitz. In the introduction to Glory, Nabokov notes that the General was "an old gentleman solely occupied in working out his family tree," perhaps unaware that his search would uncover not brilliance but eternal ancestral ignominy. In the Foreword to The Defense, Nabokov writes, "Rereading this novel today, replaying the moves of its plot, I feel rather like Anderssen fondly recalling his sacrifice of both Rooks to the unfortunate and noble Kieseritsky-who is doomed to accept it over and over again through an infinity of textbooks, with a question mark for monument" (p. 8). Just as Kieseritsky's queen was lured from the defense of his king, so too was Luzhin's wife deflected from him at the crucial moments of his struggles.

In his 1985 study Worlds in Regression, the critic D. Barton Johnson argues that the central motif of The Defense, the repetition that draws Luzhin inexorably back to insanity, is indeed parallel to the Kieseritsky combination, because Kieseritsky fell into the pattern twice, first against Schwartz in Paris, 1846 and then against Anderssen in London, 1851. Johnson claims that the repetition drove Kieseritsky, and by parallel Luzhin, to utter insanity. There are several problems with this theory. First, there are no analogues to rooks in The Defense, except perhaps the cannons on the Neva that frighten young Luzhin, or the affix tura in the name of Luzhin's nemesis Turati. However, in Russian the word for "cannon" is "pushka"-incorrect usage for a rook, like the word "castle" in English. And tura is also a variant of
the correct term, ladya. Second, it is well-known that Kieseritsky went mad long after his loss in 1851. At the time of the game, he was actually quite elated by the ingenious play of his opponent. Finally, there is no evidence that Nabokov knew of the earlier Schwartz loss. The best-known reference to it seems to be in Vukovic's The Chess Sacrifice, but that book was published many years after The Defense.

Grandmaster contemporaries of Nabokov may have been reallife models for characters in The Defense. In the 1920s, Nabokov visited several tournaments and became familiar with the peculiar personalities of Nimzovich and Alekhine. Circumstantial evidence points to Nabokov's presence at Dresden 1926, where he could also have witnessed the play of Tartakower and Rubinstein, other possible Luzhin prototypes. In the novel, Luzhin's mother-in-law guesses that the name "Luzhin" is a pseudonym for "Rubinstein or Abramson" (p. 107), but this hint is cleverly drowned out by her blatant anti-Semitic tone. In VN, The Life and Art of Vladimir Nabokov, Andrew Field picks up on some of Rubinstein's odd alleged personality traits (schizophrenia, a fear of mirrors, and a habit of hiding in the corner of rooms to avoid people). However, according to Field this identification was rejected by Nabokov, who once said: "[Rubinstein] was so like Luzhin that it was difficult to explain that I didn't know Rubinstein." Nevertheless, the Polish grandmaster Rubinstein, associated with the classical school of chess, would seem to be a good model in many ways for the character Luzhin, who had trouble facing the brash new strategies of the hypermoderns. And note that the name of Luzhin's opponent Turati echoes that of Réti, the hypermodern grandmaster. Turati is a character who chooses flank openings and is otherwise identified with hypermodernism.

Field also notes that Nabokov spent three days at a "chess match" on a trip to Paris in 1929. There supposedly Nabokov watched Alekhine and Nimzovich compete, and later faced Nimzovich in another simul. Here possibly Nabokov or Field confused dates with the aforementioned 1926 encounter in Berlin. According to modern references such as Caparrós and Lahde's The Games of Alekbine and Jeremy Gaige's Crosstables, Alekhine in 1929 played no European tournaments nor any recorded off-hand games in Paris.

Boyd's biography may be a better source in this case. Boyd describes Nabokov's stay in Paris from 5-7 February 1929. From there, Nabokov traveled to Le Boulou, where the inspiration for Zashchita Luzhina came to him while butterfly hunting. Leaving France on 24

Throughout his life, Nabokov
attempted to
blend themes from many different narrative forms, including chess.

June, Nabokov might have seen the first half of the famous Paris competition, held from 15-30 June. The event was won by Tartakower and Nabokov's friend Znosko-Borovsky also participated, which would be consistent with Field's statement.

All of these considerations suggest a different view of Nabokov from the traditional critical assumption that he was a chess "expert." The young Nabokov appears to be no more than an enthusiastic hobbyist and serious writer doing research for future works of fiction; for an author preparing the chess novel of the century, Nabokov was familiar more casually than intimately with real-life aspects of competitive play and the lifestyles of grandmasters. Perhaps this explains the obscure depiction of the Berlin tournament in The Defense, or partly accounts for one neat error of fact overlooked (or planted?) by Nabokov. Apparently, Luzhin's Berlin tourney had 13 rounds, the last of which was the Turati encounter. Playing one game per day, Luzhin beats a Hungarian, a Russian, and an Englishman, then scores a draw, a win, a win, and a draw. At the midway point, Luzhin has a day off (Saturday), and must have won four more games in a row, between Sunday and Wednesday, to have scored his tenth point and have three more games remaining until Saturday (p. 130-31). Hence, Luzhin plays Moser in round 12 and Turati in round 13, an unlucky round against an opponent "trusting too much, perhaps, to the chess luck that till now had never deserted him" (p. 134). Yet either Luzhin or Nabokov errs when Luzhin says, on the day of the Moser encounter, that he has three games remaining (p. 131).

## Nabokov the Problemist

Lacking a personal background in competitive chess, Nabokov must have composed The Defense along the lines of a subject much more familiar to him: chess problems. Luzhin, interestingly, dubbed problem composition "a pointless waste of the militant, charging, bright force" he sensed when approaching a victory in over-the-board play (p. 68). To what degree are chess problems related to Nabokov's works? Some scholars have taken the extreme approach that hidden board positions exist in some of his novels, much as a chess problem governs Alice's adventures in Through The Looking Glass. (Interestingly, Nabokov was the first to translate Lewis Carroll into Russian.) Although Andrew Field notes that Nabokov denied the presence of specific problems at the heart of his stories, many readers brushed the statement aside as another deceptive ploy. The critic and writer Mary McCarthy made such a conjecture about Pale Fire. In her 1962 New Republic essay "A Bolt from the Blue," she guessed the novel is represented by a three-tiered chess game of alternating green and red squares. Her husband Edmund Wilson took up chess after reading Nabokov's The Real Life of Sebastian Knight; though Wilson was
convinced a chess problem lay at the center of that novel, Nabokov rebuffed him. According to Boyd, Nabokov's reply included the memorable statement, "I hope you will soon be playing well enough for me to beat you."

While specific positions may or may not lie at the core of Nabokov's novels, problem themes are clearly present. Throughout his life, Nabokov attempted to blend themes from many different narrative forms (chess, poetry, drama, literature, cinema, and autobiography). In 1917 he wrote "a lyrical something in one act" called "Vesnoy" ("In Spring") about a chessplayer and two lovers, brought together by the declaration of mate. His poetic album of 1918, "Stikhi i Skhemy" ("Poems and Schemas"), contains verse in the metrical manner of Andrey Belyi, as well as some early chess compositions. The next year in London, Nabokov produced a prosodic workbook containing a chess problem next to every poem. In 1927 he wrote the poem "Shakhmatny kon"" ("The Chess Knight") for the Russian émigré newspaper Rul', telling the story of a demented grandmaster who, like Anderssen, once sacrificed a queen to Kieseritsky. He goes crazy, hops about like a knight, and is put into a padded sanatorium cell-or is he a piece returned to a felt-lined box of chessmen? In later life Nabokov wrote Pooms and Problems (1970), a final collection of juxtaposed compositions in two different media. "Chess problems demand from the
 composer the same virtues that characterize all worthwhile art: originality, invention, conciseness, harmony, and splendid insincerity," he stated in the book's introduction, adding, "Problems are the poetry of chess."

Nabokov frequently noted how his stories queerly resemble chessproblem motifs, and many of the themes, types, and constructions which Nabokov did not (or could not) realize perfectly on the chessboard were transposed to his fiction. The short story "Christmas," Nabokov notes in his collection Details of a Sunset, "oddly resembles the type of chess problem called 'self-mate.'" In Speak, Memory he refers to the "gloriettes and self-mate combinations" of The Real Life of Sebastian Knight. Yet Nabokov's introductory reference to Luzhin's demise-his "sui-mate"-can be read as either a mistaken analogy or a deception. Luzhin, who wears black, plays black in his critical game, and, like other Nabokov heroes (Charles Kinbote, Sebastian Knight, Pnin, and Kr, protagonist of the unfinished 1940 novel Solus Rex), is portrayed as the black king, would appear to be the losing monarch in a forced mate problem, rather than a selfmate composition. Which type of problems are relevant to The Defense, and which are not?

## Nabokov's <br> mention of retrograde analysis could be another <br> deception that he discusses merely to throw off "hack reviewers."

## Retrograde Analysis

In the introduction to The Defense, Nabokov states that the telescopic action of Chapters Four, Five and Six, in which 16 years are collapsed into one paragraph, should remind the reader of a retrograde analysis problem. The composition of Nabokov's shown in Dlagram 2 and published in Rul' (5 May 1923) was in this realm. ${ }^{3}$

The concept of retrograde analysis, linked intrinsically with the theme of detective work, relies on identifying small clues in the present to help reconstruct the past-and ultimately to piece together and understand the present. Although this motif is present throughout Nabokov's works, it is seen most clearly in The Real Life of Sebastian Knight, which is a pure case of detective fiction. For The Defense, however, there is critical debate about the role of retrograde analysis in the plot. On the one hand, some critics argue that there is nothing unusual in the replay of events of the central chapters, and that Nabokov is merely applying a typical literary (or more properly, cinematic) gimmick. Thus Nabokov's mention of retrograde analysis in the Foreword could be another deception, like the meaningless sui-mates, nonexistent frosted window themes, and irrelevant checkered bathroom tiles that he discusses merely to throw off "hack reviewersand, generally, persons who move their lips when reading" (p. 8).

On the other hand, proponents of the "hereafter" school use retrograde analysis in their critical interpretation of the novel. They argue that Luzhin's malady is externally motivated; that he is a marionette controlled by outside forces. It is then the reader's task to uncover the existence of these spectral hands by reconstructing the forced series of events that exist in the missing time separated from the real-time frame of the plot.

## Fairy Chess

Retrograde analysis problems are but one form of the catch-all category of unorthodox compositions called fairy chess, a genre that emerged while Nabokov was a young adult. The problem in Diagram 3, published by Nabokov in Poslednie novosti on 17 November 1932, was dedicated to Znosko-Borovsky. ${ }^{4}$

Nabokov's interest in fairy chess is seen most clearly in his novel The Giff. The protagonist Fyodor, rebelling against the shallow imitators and charlatans of art, discovers in a Soviet magazine called " $8 \times$ 8 "a chess problem in which a cook (the technical term for a flaw in a chess problem) has evidently been repaired too hastily (p. 175):
3. The solution is $1 \mathrm{cxb6}$ and 2 gc4 mate. Black's last move must have been ... b5. The black pawn on ft required three captures to get there, and thus the knight could not have captured on d 5 on the last turn.
4. Replace the White rook on $c 8$ with a black knight and place a white pawn on d7. Instead of $1 \mathrm{dxc} 8 / \Xi$ white plays $1 \mathrm{dxe} 8 / \Delta$ mate, a beautiful, symmetrical example.
[I]n one of the Soviet productions ... a beautiful example turned up of how to come a cropper: Black had nine pawns-the ninth having evidently been added at the last minute, in order to cure a cook, as if a writer had hastily changed "he will surely be told" in the proofs to the more correct "he will doubtless be told" without noticing that this was immediately followed by: "of her doubtful reputation."

The error of the composition is intended primarily as a slight against the totalitarian Soviet regime (as " $8 \times 8$ " suggests a take-off on the real magazine " 64 "). Elsewhere Nabokov calls Soviet "task" problems artless. On a deeper level, the capitalized "nine" could also be a reference to unorthodox chess composition, where nine pawns can exist or where pieces might jump off and on the board. On page 276 of Pale Fire, Kinbote states:

We must assume, I think, that the forward projection of what imagination he had, stopped at the act, on the brink of all its possible consequences; ghost consequences, comparable to the ghost toes of an amputee or to the fanning out of additional squares which a chess knight (that skip-space piece), standing on a marginal file, "feels" in phantom extensions beyond the board, but which have no effect whatever on his real moves, on the real play.

$3 \square \quad$ Retract one move and mate In one

Fairy-chess motifs have a particular relevance to The Defense, suggesting the possibility that Luzhin, the black king, is not really committing suicide but rather jumping off the board of life to escape checkmate in this world. The suggestion that some pieces "feel" the invisible squares beyond the edge pervades Nabokov's work and hints at a fairy-chess explanation for escape, what Luzhin's narrator calls "breaking of the rules" or "stopping the clock of life." Such an interpretation of The Defense, though it challenges the strict "hereafter" explication, is speculative, and would be supported by evidence that fairy chess ideas were otherwise on Nabokov's mind in the late 1920s.

## Waiters

Whereas many of Nabokov's early chess problems have been lost or are not accessible to the public, the vast majority of those that survive can be classified as waiting-move constructions or "waiters." The normal schema involves a preponderance of white force unable to achieve direct mate, and therefore the win is achieved by zugzwang.

## The most

important chess
pattern in
Nabokov's
writings was, surprisingly, a type of chess problem the author seems never to have composed.

Falling roughly into that category is the problem in Diagram 4, composed for Poslednie novosti, 25 November 1932. ${ }^{5}$

Translated into the literary realm, waiters play an important metaphoric role in describing how characters are responsible for their own doom. Kinbote, as Charles the Beloved in Pale Fire, notes how his opponents Gradus, Niagrin, Andronnikov, and the Sovietized Extremist army botched a direct assault against him. Luzhin's predicament also resembles a waiting-move problem. Unlike Kinbote's enemy, Luzhin's adversary is far more clever. "A lull, thought Luzhin that day. A lull, but with hidden preparations. It wants to take me unawares" (p. 241). Right before his demise, Luzhin cannot stop moving: "He was overwhelmed by an urge to move ... began to walk at random ... sat down, but immediately got up again ... It was impossible to sit still ... He jumped up again ... Luzhin continued to move about ..." (p. 249). The rules of the game dictate that Luzhin must move, or else forfeit. Luzhin chooses to defend himself actively, trying to throw off his unseen opponent by playing an illogical move (feigning a toothache and inquiring about the wax dummies), but this too, he soon decides, had been foreseen.

## The Solus Rex Construction

The most important chess pattern, and the one occurring most frequently throughout Nabokov's writings was, surprisingly, a type of chess problem the author seems never to have composed, and also the name of a novel he certainly never completed. Solus rex problems involve the lone black king, and are aesthetically elegant only when constructed as pure waiters. Nabokov chose the solus rex theme to describe metaphorically the plight of his heroes, commemorating his own personal loss of home and love after the Russian Revolution. As denuded black kings, Pnin, Kinbote, Kr, and especially Luzhin are all forced into zugzwang, and must choose their own demises.

In Pnin (pp. 85-86), Victor Wind lulls himself to sleep each night thinking of Pnin as a lone monarch, in a vision mirroring Nabokov's flight from the Crimea in 1919:
"Abdication! One third of the alphabet!" coldly quipped the King, with the trace of an accent. "The answer is no. I prefer the unknown quantity of exile." ...

Victor indulged night after night in these mild fancies, trying to induce sleep in his cold cubicle which was exposed to every noise in the restless dorm. Generally he did not reach that crucial flight episode when the King alone-solus rex (as chess problem makers term royal solitude)-paced a beach on the Bohemian Sea ...

[^2]Charles Kinbote, the exiled monarch in Pale Fire, faces a similar lone-king predicament. He describes himself as "being the only black piece in what a composer of chess problems might term a king-in-the-corner waiter of the solus rex type" (pp. 118-119). In Kinbote's account, he is indeed the king-in-the-corner waiter on each of three chessboard levels: he is held captive in the southwest corner tower of his palace and flees from the northwesternmost point of Zembla. When cornered, he escapes from level to level through a perpendicular dimension, whether descending to the tunnels under King Thurgus's former dressing room or parachuting into Baltimore. His final escape from New Wye-the escape from being-is his suicide in the year 1959. Kinbote states, "Of the not very many ways known of shedding one's body, falling, falling, falling is the supreme method ..." (p. 220).

This too Luzhin chooses for his demise in The Defense, with a bathroom window as portal, but as a solus rex, he may also find escape to the extramundane-the world beyond the chess problem of the novel. Indeed, the action stops before Luzhin's body hits the ground, suggesting that Luzhin's life does not end in the usual sense; Nabokov himself pointed out later that "the novel never ends." Discovering the solus rex construction in The Defense points to a new exegesis of the novel, one that contradicts the invisible-hand interpretation of the "hereafter" school.

## Conclusion

The search for chess archetypes from the worlds of play and composition produces new insights into The Defense. Nabokov's ability to map metaphori-

$4 \square$
Mate In two cally one artistic medium to another requires an understanding of chess constructions such as retrograde analysis and solus rex. Literary interpretations based on these problems produce results quite different from currently accepted scholarship.

In Nabokov's game of worlds, it is up to the reader to discover whether Luzhin and other protagonists can escape the "here" world by overcoming the rigged chess problem of the novel. When, as a child, Luzhin could not see the truth of the affair between his father and aunt, it was because his mind was channeled away from reality and toward his art: "The most obvious explanation did not occur to him, just as sometimes in solving a problem its key turns out to be a move that seemed barred, impossible, excluded quite naturally from the range of possible moves" (p. 63). Through chess-play and chessproblem metaphors, Nabokov offers the reader a chance to open the locked doors and trapdoors, ultimately to discover the truth.

## Bibliographical Notes

Nabokov's novels are currently in print in paperback editions by Vintage. Nabokov's stories will be soon published in collected form by Knopf, and most of his other major works are still in print by various publishers.

The serious student of Nabokov would do well to begin with Brian Boyd's much-praised two-volume biography, Vladimir Nabokov: The Russian Years (1990) and Vladimir Nabokov: The American Years (1991). Both are published by Princeton University Press, which has also brought out several critical volumes on Nabokov, including Nabokov's Otherworld by Vladimir Alexandrov (1991) and Nabokov's Art of Memory and European Modernism by John Burt Foster, Jr. (1993), both of which include discussions of The Defense. Another useful critical work is Worlds in Regression: Some Novels of Vladimir Nabokov (Ardis, 1985) by D. Barton Johnson. Brian Boyd's own analysis of The Defense is given in his essay "The problem of pattern: Nabokov's Defense," Modern Fiction Studies 33 (1987), 575-604.

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## ESSAY

## Chess Rating Systems

Mark E. Glickman

TLhe creation of chess rating systems may have done more to popularize tournament chess than any other single factor. In the 1950s, Arpad Elo (1903-1992) developed the theory of the current U.S. rating system, often called the "Elo system." Elo based his scale on one previously used by the U.S. Chess Federation (USCF), which assumed that a rating of 2000 would be equivalent to scoring $50 \%$ in a U.S. Open Championship. Elo's system, however, added considerable statistical sophistication.

The International Chess Federation (FIDE) adopted Elo's rating system in 1970. Since that time, the system has been adopted with various modifications by many national chess federations. Today it is hard to imagine tournament chess without a rating system.

## Why Rate Chessplayers?

Chess rating systems have many practical uses. For pairing purposes in open tournaments, a tournament director wants to have some idea which players are considered the most likely candidates to win the tournament so he can try to avoid pairing them against each other in the earlier rounds of the tournament. Ratings are also used for tournament sectioning and prize eligibility. In most U.S. Swiss-system tournaments, only players of specified rating ranges can compete for section prizes.

[^3]In the bad old days before<br>ratings, it was easier for<br>champions to avoid matches with their strongest rivals.

Ratings can also be used as a qualifying system for elite tournaments or events. Invitations to compete in the U.S. closed championships and to compete on the U.S. Olympiad team are based in part on players' U.S. Chess Federation (USCF) ratings. The importance of using ratings for such purposes can best be understood by considering the chaotic situation before ratings existed. In the days before ratings, it was not possible to view chessplayers' strength objectively, and invitations to important tournaments were typically based on players' reputations. When the young José Capablanca was invited to play at San Sebastian 1911, established masters like Ossip Bernstein and Aron Nimzovitch derided him as a "flashy amateur." Capablanca surprised both these critics by beating them and winning the tournament. Ironically, when Nimzovitch himself was invited to the great New York 1927 tournament, the Russian player Efim Bogulyubov said, "Everyone knows that he is not a real grandmaster." Nimzovitch's plus score in the tournament belied his critic. At least Capablanca and Nimzovitch got the chance to vindicate themselves. In the bad old days before ratings, it was also easier for champions to avoid matches with their strongest rivals. It might have been harder for World Champion Emanuel Lasker to avoid a match with Akiba Rubinstein, and U.S. Champion Frank Marshall to avoid a match with practically everybody, if objective rating systems had been in place during the first third of this century. Modern rating systems provide objective measures of ability-though not perfect measures, as we shall see-that are accepted for most practical purposes by virtually everyone.

The current "title" systems used by some chess federations base their title qualifications on the overall strength of tournament participants as measured by their ratings. International players, too, must achieve minimum threshold ratings before FIDE will award the FIDE Master, International Master, and International Grandmaster titles.

One of the greatest benefits of the rating system is that it allows competitors at all levels to monitor their own (and others') progress as they become better chessplayers. However-as will become clearer later-a paradox is involved in evaluating the movement of one's rating over time. This is because a rating only has meaning when compared against other ratings in the rating pool at the same point in time. Over time, the composition of the rating pool changes. As the Oxford Companion to Chess notes, the characteristic flux of the rating system "renders meaningless comparisons between players in different periods." Despite this evident fact, there has been much idle talk in the press and among chessplayers about Garry Kasparov "breaking Bobby Fischer's record," because Fischer's peak published Elo rating was 2785 and Kasparov-who is still active, of course-has been published as high as 2805 . In fact, Fischer's and Kasparov's ratings
are only significant in relation to the ratings of their contemporaries. When Fischer peaked at 2785 on the July 1, 1972 FIDE rating list, Boris Spassky was a distant second on the list at 2660, 125 points back. As Kasparov himself has pointed out, no other player has so far surpassed his contemporaries since the inception of the FIDE rating list in 1970.

## Types of Rating Systems

The first chess rating system to produce numerical ratings was the Ingo system developed by Anton Hoesslinger in the Federal Republic of Germany in 1948, and named after his home town, Ingolstadt. Over the next 10 years, various forms of this system were used by different national chess administrations, including versions developed in the mid-1950s for the USCF by Kenneth Harkness and for the British Chess Federation by Richard Clarke. These systems combined the frequency of winning with the level of opposition. While these Ingo-based systems were popular in the 1950s because the ratings they produced were consistent with subjective rankings of chess players, they had little basis in statistical theory. In fact, in the Harkness system, a player could lose every game in a tournament and still gain rating points. This and other flaws in the Harkness system led the U.S. to adopt the Elo system in 1960. ${ }^{1}$

The Elo system assigns to every player a numerical rating based on performances in competitive chess. A rating is a number normally between 0 and 3000 that changes over time depending only on the outcomes of tournament games. When two players meet, the Elo system predicts that the one with the higher rating should win more often than the lower rated player. The bigger the difference in ratings, the greater the likelihood that the higher-rated player will win.

The entry "Elo rating" in The Oxford Companion to Chess notes, "The calculations behind a change of rating, and the proof of the calculation, are too technical to be included here." This article will discuss both the underlying ideas and the statistical formulae incorporated in the Elo system, including potential modifications.

While some other competitive sports organizations (the U.S. Table Tennis Association, for example) have adopted the Elo system to rate their players, non-probabilistic methods for measuring achievement remain in use. In the American Contract Bridge League (ACBL) bridge rating system, "master points" are awarded for strong performances. Points are awarded relative to the playing strength of the competitors in an event. For example, the number of master points awarded to a bridge partnership in a national championship com-

1. The first published description of the system appeared in "New USCF Rating System," Chess Life, June 1961, 160-161.

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pared to that in a novice tournament could be as high as 750 to $1 .{ }^{2}$ One of the key differences between the Elo system and the current ACBL system is that the Elo system permits a rating to increase or decrease depending on a player's results, while the bridge system only allows a rating to increase, and never decrease. A bridge rating is therefore not only a function of one's ability, but also a function of the frequency in which a player competes. Because of this characteristic, bridge players' abilities cannot be directly compared via their ratings. Ratings derived under the Elo system, however, are designed, in principle, to permit such a comparison.

Another system that has gained acceptance is one of several used for rating professional tennis players. For example, the Association of Tennis Professionals (ATP) ranking system awards "computer points" based mainly on the type of tournament (e.g., "Grand Slams," "Championship Series," etc.), total prize money in the tournament, and the highest round a player attained before being eliminated (or if the player won the tournament). Players are ranked by the sum of the computer points corresponding to their best 14 results from the previous 52 weeks, or the sum of all the computer points if competing in fewer than 14 tournaments. This system, like the ACBL bridge rating system, does not have probabilistic underpinnings, but does seem to produce rankings that roughly correspond to popular belief. Unlike a bridge rating, an ATP ranking can go down after repeated poor performances. The ATP system also incorporates the element of time, which is lacking in both the Elo and ACBL systems. The Elo and ACBL systems use a player's most recent rating as the current rating even if the player has not competed in a long time, whereas in the ATP system a player can lose points by not competing. This feature may be more appropriate for tennis than for chess or bridge, because one's tennis ability may be more clearly linked to one's frequency of competition. A curious feature of the ATP system is that tennis ratings can change abruptly. For example, if a player has won a major event, and during the following year has mostly mediocre results, then at the year anniversary of winning the major event the player's rating can be expected to drop precipitously. So while the ATP system does include a time component, it does not guarantee smooth changes in rankings.

This article describes the basic principles of the Elo rating system, and how these principles are currently applied in various rating systems. The USCF rating system is the focus of attention, though much of the discussion extends to other implementations of the Elo rating system.

[^4]
## The Statistical Context of Chess Ratings

Statistical theory is a complex subject, but one that we will have to explore in order to discuss chess ratings. Readers with some statistical background will have an easier time following the discussion, but the main points should be clear enough to the layperson who reads attentively.

The problem of rating chessplayers falls into the area of "paired comparison" modeling in the field of statistics. Paired comparison data results from any outcome that indicates a degree of preference of one object over another. Clearly, chess outcomes fall into this framework because a chess game is the result of two players being "compared" to determine who is the "preferred" player (or whether "no preference" is made, in the case of a draw). Other examples of paired comparison data occur in other sports whose results are wins and losses, e.g., football, basketball, and hockey. The outcomes of these games can also be seen as indicating a degree of preference through score differences; a game in which one team defeats another by a large margin conveys a greater degree of preference than a game in which the final score difference is close. Topics in experimental psychology such as choice behavior and sensory testing also involve paired comparison data. For example, the "Pepsi challenge" is a test to determine whether an individual prefers Pepsi-Cola to Coca-Cola. ${ }^{3}$

While Elo's name is by far the one most often associated with the development of the current chess rating system, the statistical theory underlying the system had been established well before his work in the late 1950s, and certainly before his well-known 1978 monograph. ${ }^{4}$ The first work to give serious attention to modeling chess ability was by the mathematician Ernst Zermelo in 1929.5 In this paper, Zermelo addressed the problem of estimating the strengths of chess players in an uncompleted round-robin tournament. Statistician Irving Good in 1955 developed a system that amounted to the same model as Zermelo's, but was obtained through a different set of assumptions. ${ }^{6}$ Both of their models are connected to the BradleyTerry model for paired comparison data, which was first described in detail in a paper by statisticians Ralph Bradley and M. Terry in a 1952 paper. ${ }^{7}$ Among popular paired comparison models, the Brad-ley-Terry model has the strongest connection to the currently imple-

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Figure 1 An extreme value distribution centered at a strength of 1500. Higher points on the curve indicate greater likelihood that a player will perform at that level.
mented versions of the Elo rating system.

One way to understand the Bradley-Terry model, or most other models for paired comparison data as they relate to chess, is to suppose that every player brings a box containing many numbered slips of paper when sitting down to a chess game. Each number represents the player's potential strength during the game. This collection of values will be called a player's "strength distribution." A statistician would then view a game of chess in the following way: Instead of actually playing a chess game, each player reaches into the box and pulls out a single piece of paper at random, and the one drawing the higher number wins. In effect, this model for chess performance says that each player has the ability to play at a range of different strengths, but displays only one of these levels of ability during the game. Naturally, this procedure favors the person who carries a box that contains generally higher numbers, but of course it does not guarantee his victory in every game. This is analogous to chess: The better player usually wins, but not always.

The Bradley-Terry model can be derived by making a particular assumption about the distribution of values in player's box. If every player's strength distribution (i.e., distribution of values in the player's box) follows what is called an "extreme value distribution," then the Bradley-Terry model results. The shape of the extreme value distribution is shown in Figure 1. The height of the curve at a particular strength value describes the relative frequency a player will randomly select that value. For example, because the curve is roughly twice as high at a strength of 1500 relative to 1300 , a player with the extreme value distribution in Figure 1 is twice as likely to perform at a strength of 1500 compared to a strength of 1300 . Under the Bradley-Terry model, every player's distribution of strength follows an extreme value distribution having the same shape, but centered at a different value depending on the player's overall ability. Note that the curve trails off more slowly to the right, so that the assumption of an extreme value distribution implies that a player is more likely to randomly select a high number from his or her box than a low number. Thus the Bradley-Terry model postulates that a player will play with an ability that fluctuates from game to game, but rarely will the
ability be substantially lower than one's average display of ability.

Because we are primarily interested in the likelihood one player will defeat another, it is just as important to consider the distribution of the differences between randomly selected values from each player's box. The proportion of the time that the difference is greater than 0 tells us the probability one player will defeat another. The BradleyTerry model assumes that if we consider all possible combinations of values from one player's strength distribution and possible combinations of values from an opponent's strength distribution, the differences between the two numbers over all these combinations follow a "logistic" distribution. This distribution is shown in Figure 2. Under the BradleyTerry model, the probability that the first player will outperform the other is the fraction of the area under the logistic curve that is to the right of 0 . This is exactly equivalent to the probability of the first player having drawn a higher value from his or her strength distribution.

Even though the currently implemented system can be derived by assuming that a player's strength distribution is an extreme value distribution, Elo's chess rating system assumes that a player's strength distribution is a normal distribution (bell curve). Figure 3 shows the curve for the normal distribution. The paired comparison model derived from the normal distribution is commonly known in the statistics literature as the Thurstone-Mosteller model, based on work by Louis Thurstone in the late 1920s, ${ }^{8}$ and statistician Fred

[^6]

Figure 4 Left Two superimposed normal distributions, one centered at 1400 (dotted line) and one centered at 1500 (solid line). Right Normal distribution of the difference between two players' individual performances. The area under this curve is the probability that the stronger player will outperform the weaker one.

Mosteller in the early 1950s. ${ }^{9}$ In 1979 psychometricians William Batchelder and Neil Bershad, using the Thurstone-Mosteller model, extended Elo's model by formally modeling the probability of individual game outcomes. ${ }^{10}$ One interesting feature of using the normal distribution to model a player's strength distribution is that if we consider all combinations of values from one player's strength distribution with all possible values from an opponent's strength distribution, the differences have the same shape, though the differences are more spread out. The distribution of differences appears in Figure 4.
It appears as though there is very little distinction between the shape of the logistic distribution in Figure 2 and the normal distribution in Figure 4. Figure 5 shows both curves superimposed, with the logistic distribution drawn as a dotted line. In fact, statistics professor Hal Stern in a 1992 article ${ }^{11}$ showed that when analyzing paired comparison data, it makes virtually no difference whether one assumes the logistic distribution or the normal distribution for differences in players' strengths. So, empirically, the choice between the Bradley-Terry model and the Thurstone-Mosteller model is a moot issue. Mathematically, however, the Bradley-Terry model tends to be more tractable to work with. This is the most likely reason that most organizations administering a probabilistic rating system (e.g., FIDE, USCF) use the Bradley-Terry model, which uses the logistic distribution assumption, rather than the Thurstone-Mosteller model, which uses the normal distribution assumption.

Other models for rating chess performance have appeared in recent statistical literature. Statistics professor Harry Joe in a 1990 paper ${ }^{12}$ examined the best chessplayers of all time with a model that
9. "Remarks on the method of paired comparisons: I. The least squares solution assuming equal standard deviations and equal correlations," Psychometrika 16 (1951), 3-9.
10. "The statistical analysis of a Thurstonian model for rating chess players," Journal of Mathematical Psychology 19 (1979), 39-60.
11. "Are all linear paired comparison models empirically equivalent?" Mathematical Social Sciences 23 (1992), 103-117.
12. "Extended use of paired comparison models, with application to chess rankings. Applied Statistics 39 (1990), 85-93.
splits players' careers into "peak" periods and "off-peak" periods. This analysis was performed on a data set compiled by Raymond Keene and Nathan Divinsky. ${ }^{13}$ Statistician Robert Henery in a 1992 paper analyzed this same data set, and proposed using the length of a game to predict the outcome of chess games. ${ }^{14}$ In a more developmental approach, Joe wrote an article in 1991 that derived axiomatically a general framework for a rating system, and showed that the Elo system is a special case. ${ }^{15}$ A recent article by Batchelder, Bershad, and R. Simpson ${ }^{16}$ uses a "reward system" approach, similar to Joe's, to updating players' ratings.

Paired comparison theory has most typically been devoted to problems of modeling judges' preferences among a set of objects. While the game of chess, and most other games involving two competitors, can be viewed as a paired comparison insofar as a player is "preferred" when he or she wins a game, what makes the problem of rating chess players different from the usual paired comparison setting is that players' abilities can and do change over time. This is a non-trivial aspect of the problem. My own Ph.D. thesis (Harvard University, 1993) developed an approach for solving this problem. In my work, I described a general probabilistic mechanism by which players' abilities change over time. As an application, I analyzed the results from the World Cup tournaments of 1988-1989 to determine ratings of the participants in the events. The approach I have taken to modeling change in abilities over time was independently formulated by German statisticians Ludwig Fahrmeir and Gerhard Tutz, ${ }^{17}$ though my approach to data analysis is slightly different.
13. A prototype of this data set appeared in Keene and Divinsky's Warriors of the Mind: A Quest for the Supreme Genius of the Chess Board (Hardinge Simpole, 1989).
14. "An extension to the Thurstone-Mosteller model for chess," The Statistician 41, 559567.
15. "Rating systems based on paired comparison models," Statistics and Probability Letters 11, 343-347.
16. "Dynamic paired-comparison scaling," fournal of Mathematical Psychology 36 (1992), 185-212.
17. "Dynamic stochastic models for time-dependent ordered paired comparison systems," Fournal of the American Statistical Association 89 (1994), 1438-1449.

Whenever they analyze data, statisticians make a clear distinction
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## Ideas Underlying the Elo Rating System

Elo's rating system, while not going to the same level of mathematical detail as later approaches, makes an important contribution by introducing a simple algorithm to adjust players' ratings based on tournament game results. Elo's framework is quite appealing: players have ratings before a tournament which, in principle, predict their performances; game outcomes are observed; and players' ratings are adjusted to account for the differences between the observed results and the pre-event expectations. This process is then repeated for the next event. While much of Elo's system can be criticized for its lack of reliance on established statistical principles, he successfully implemented a system that appears to track players' performances with reasonable adequacy.

Rating Parameters Versus Rating Estimates
When statisticians analyze data with the hope of explaining or understanding the mechanism by which the data are generated, they make a very clear distinction between "parameters" and "estimates." To understand the difference, consider the following situation. Suppose one is interested in finding out the proportion of tournament chess players in the U.S. who believe that Fischer could defeat Kasparov in a 24 -game match. This proportion, which is a characteristic of the population of U.S. tournament chess players, is an example of a "parameter." Its exact value can only be known by obtaining the opinions of every tournament chess player in the U.S. To find the precise value of this parameter would be absurd. One would need to ask the opinions of tens of thousands of players in order to learn the answer. Even if the means were available to ask everyone, one is probably not interested in knowing the parameter value with such precision.

Instead, a more convenient approach would involve gathering a small sample of players, and guessing the parameter value based on information from the sample. To accomplish this, one might randomly select 200 players from all over the country and ask their opinions on a potential Fischer-Kasparov match, and compute from this sample the proportion who believe Fischer would win. This value computed from the sample is an "estimate" of the parameter. The proportion who believe Fischer would win calculated from the sample of 200 players is expected be close to the proportion calculated from the entire population of tournament players (if such a task could possibly be carried out), so a great deal of work has been saved by calculating an approximate answer.

On the down side, the value calculated from the sample would likely be different if one were to obtain a different sample of 200 players. So, for example, it may be possible to randomly choose a
sample of 200 players of which $42 \%$ believe Fischer would win, and then randomly select another sample of 200 players of which $35 \%$ believe Fischer would win. This reveals the main drawback of relying on estimates: they are subject to variability. The tradeoff is clearthe more accuracy we want in estimating a parameter, the greater the expense (usually in the form of acquiring a larger sample). The usual role of a statistician in this type of situation is not only to estimate the parameter value from a sample, but also to understand how much the estimate can be expected to vary from sample to sample, and to identify a reasonable sample size so that estimates are not likely to vary much from sample to sample.

The distinction between estimates and parameters is rarely, if ever, made in the context of chess ratings. For a true appreciation of the rating system, this distinction is important to understand. Returning to the analogy of players drawing numbered slips of paper to determine the outcome of a game, one might be especially interested in the average value of these numbers for a particular player. The Bradley-Terry model (used by the USCF and FIDE) assumes that the only difference across players in the distribution of the numbered slips of paper is their center or average (because the spread of values around the center is assumed identical). An examination of the left plot in Figure 2 makes this point clear. The two superimposed curves represent the frequency of values from two players' strength distributions. The only difference between these two curves is that the curve drawn as a solid line is shifted to the right relative to the curve drawn as a dotted line. This suggests that we only need to keep track of the center (average value) of each distribution, because that is the only feature of the two distributions that is different. Once we know the average value of a player's strength distribution, we should be able to describe the entire distribution of values. It is this average value or average strength, a parameter that is a feature of a player's strength distribution, that we want to learn about in a chess rating system.

Unlike the previous example where it is merely inconvenient to find out the exact proportion of players who think Fischer will defeat Kasparov, it is actually impossible to learn the exact value of the center of a player's strength distribution. The reason can best be understood by analogy to the previous example. To discover the proportion of chess players that believe Fischer will defeat Kasparov, one needs to identify the population of interest, and then specify the computation that leads to the parameter value. This is a straightforward procedure; one could conceivably list every member of the tournament chess playing population, ask each person his or her opinion, and then produce the value of the parameter by dividing the number of players that believe Fischer would win by the total num-

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ber in the population. In the chess rating situation, the "population" would be considered all possible displays of playing strength (i.e., all numbered slips of paper from a box). If one could possibly have knowledge of such information, then we could somehow compute the average across an infinite number of values to obtain the average value of the player's strength distribution. Clearly, it is impossible to observe even a single value, much less a collection of values, from a player's strength distribution. Instead, only game outcomes can be observed, so an estimate of a player's strength parameter must somehow be inferred from a sample of game outcomes. This estimate of a player's average strength is what we know as a chess rating.

A computed chess rating is really an estimate of the player's rating parameter, that is, the player's average strength. ${ }^{18}$ To understand the connection between a reported chess rating and a rating parameter, consider the following situation. Suppose a player has a strength distribution with an average value of 1654 (although this could not possibly be known). When this player registers for the tournament, the tournament director finds that his reported rating from the most recent rating list is 1693 . In this particular instance, the player's estimated rating of 1693 is higher than his true, though unknown, rating parameter of 1654 . This player can be expected to perform worse than his published rating would lead one to believe.

Our example points out that because published ratings are merely estimates of rating parameters, they are subject to variability and imprecision. A player's published rating would likely be a different value had the player competed against different opponents in his or her last tournament. We may also conclude that, just as in estimating the proportion of all players who think Fischer could defeat Kasparov, the more often a player competes the more precisely we are likely to estimate the player's average strength.

Ironically, however, the fundamental mathematical assumption of the USCF and FIDE rating systems involves a statement about the rating parameters, and not about the ratings that are printed in rating lists. In a game played between players with true average strengths of $R_{A}$ and $R_{B}$, the expected score for player $A$ is assumed to be

$$
\begin{equation*}
E=\frac{10^{R_{A} / 400}}{10^{R_{A} / 400}+10^{R_{B} / 400}} \tag{1}
\end{equation*}
$$

where the score of a game is 1 if player $A$ wins, $1 / 2$ if the game is a draw, and 0 if player $A$ loses. The expected score of a game has an interpretation as a long-run average. If players $A$ and $B$ were to play
18. The terms "rating parameter" and "average strength" are synonymous and will be used interchangeably throughout the discussion.
repeatedly, assuming their abilities do not change, then the average of the scores corresponding to their game outcomes will be close to $E$. Suppose, for example, that the rating parameter for player $A$ is 1500 and the rating parameter for player $B$ is 1700 . Then the above formula states that the expected score of the game for $A$ is about 0.24 . This implies that player $A$ will win at most $24 \%$ of his games against player $B$ in the long run, and probably less than $24 \%$ because some of these games will be draws.

The paradox, of course, is that this formula applies only to rating parameters, which we can never know exactly, and not to estimated ratings, which are computed based on observed data. Suppose, in the previous example, that the published rating estimate for player $A$ is 1547 and for player $B$ is 1661 . If we blindly applied the expected score formula pretending that these values were the true parameter values, we would falsely conclude that the expected score of the game for player $A$ is 0.34 , a value which is substantially larger than the value computed using the exact parameter values of 1500 and 1700 .

One might be tempted to think that the differences between estimated ratings and rating parameters would average out when computing the expected score; some players will have an estimated rating that is greater than their rating parameters, and other players will have lower estimated ratings. Interestingly, an analysis of the outcomes of over 8,300 USCF-rated tournament games demonstrates that the expected score function computed on estimated ratings does not describe the data. The game results were taken from several tournaments between 1991 and 1993, including the 1992 U.S. Open, the 1993 National Open, the 1991 and 1992 Illinois Open events, and the 1993 Los Angeles Open.

Fgure 6 shows the results of the analysis. The games were grouped according to the players' differences in their published USCF ratings at the time of the events. The figure shows the average score for the higher-rated player for various rating differences, along with a $95 \%$ margin of error. ${ }^{19}$ The dotted line in the figure corresponds to the expected score according to the formula in Figure 1. If estimated ratings were interchangeable with rating parameters, then the dotted line would intersect the segments on the figure. In most cases, the expected score overestimates the observed average score for particular rating differences. This suggests that either the formula assumed in (1) is not correct, or the rating estimates are not good approximations to the rating parameters.

At first, this consistent overestimation of the expected score formula may seem surprising. In fact, if a rating parameter is estimated

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Figure 6 Summary of 8329 rated USCF tournament games. Both players must have competed in at least 20 tournament games to be included in the sample. The sample is partitioned into groups of players according to their rating difference (0-50, 50-100, 100-150, 150-200, 200-250, 250-300, 300-400, 400-500, 500-600, 600-700, 700800 ). For each rating difference group, the dot represents the average score of games relative to the higher rated player. The vertical bars show the 95\% margin of error. The values on the dotted line are the expected scores calcuated from Elo's expected score formula.
with error from player to player, we should expect the expected score formula to overestimate the observed outcomes. This is actually a statistical property of the expected-score formula. To understand this point, suppose that the rating estimates for every player in our sample were determined randomly so that a player's reported rating would have no connection to a player's true average strength. In that case, if we were to reperform the analysis that led to Figure 6, we should expect all the average scores for each rating grouping to be centered close to a horizontal line at $50 \%$, as the randomly determined rating provides no information about the players' abilities. At the other extreme, if rating estimates were so precise that they were exactly equal to rating parameters, then we would observe the expected score curve intersecting all the segments. What we actually do observe is something in between these two extremes: the segments are centered somewhere between $50 \%$ and the expected score curve. This fact implies that estimated ratings are not meaningless (or else the segments would be very close to a horizontal line at $50 \%$ ), but they are not exact either (or the segments would intersect the expected score curve). Fortunately, the figure indicates that the segments are closer to the expected score curve than they are to $50 \%$, especially at the higher rating differences.

Another way to understand this overestimation is to consider what happens when a player with a true average strength of 1900 plays against an opponent with a reported rating of 1700 . Suppose that the reported rating of 1700 is imprecise, so that approximately one-half the time the player plays at an average strength of 1600 and the other half of the time plays at an average strength of 1800 . If we calculate the expected score using the opponent's reported rating of 1700, we obtain a value of 0.76 . In practice, we can expect a score of 0.64 when the opponent plays at a rating of 1800 , and expect a score of 0.85 when the opponent plays at a rating of 1600 . So, on average, the first player can expect to score $(0.64+0.85) / 2=0.745$ against the opponent. This value is less than 0.76 , which is the result computed
on the reported rating of 1700 . Thus the expected score computed on the reported rating is higher than what should actually happen. The mathematical fact illustrated here is that the expected score computed on the average of opponents' ratings is systematically greater than the average of individual expected scores when the opponents' ratings are generally lower. This statistical phenomenon is likely to be the main explanation for the behavior in Figure 6.

## Updating Ratings

Because it is impossible to know a person's rating parameter exactly, the only hope is to estimate the parameter accurately. Suppose a chess player has just finished playing in a tournament. What approach should be taken to estimate the player's average strength? One approach would be to estimate the rating parameter based on game outcomes only from the tournament. An estimate of a player's rating parameter from a single tournament is often called a performance rating. This idea seems reasonable, but it ignores potentially useful information from past tournaments.

Another approach involves examining the entire history of this player's tournament performances and estimating his or her rating parameter as if all of these games were played in one large tournament. While this makes use of a player's historical information, it has the drawback of treating a recently played game and a game played years ago as equally indicative of current average strength. The most reasonable approach seems to be a compromise between these two extremes. The best estimate of current ability should make use of all tournament games ever played, but should give substantially greater emphasis to more recent games. In effect, this is how the Elo updating formula works.

The rating update formula involves adjusting a player's estimated rating as new data is observed. The adjustments are made incrementally so that rather than recomputing an estimated rating from a player's entire tournament history, a pre-tournament rating is used as a summary of his or her history prior to the current tournament. This allows for a simple recursive description of the rating procedure; a player's post-tournament rating is a weighted average of an estimated performance rating with an estimated pre-tournament rating. Because calculating performance ratings accurately involves a computation that can be too demanding to perform on a regular basis, an approximation is used. The formula for adjusting a pretournament rating is

$$
\begin{equation*}
r_{p o s t}=r_{p r e}+K\left(S-S_{e x p}\right) \tag{2}
\end{equation*}
$$

where $r_{\text {post }}$ is a player's updated post-tournament estimated rating, $r_{p r e}$ is a player's estimated pre-tournament rating, $S$ is the player's
total score in the tournament, $S_{\text {exp }}$ is the expected total score estimated from the player's pre-tournament rating and the player's opponents' pre-tournament ratings, and $K$ is an attenuation factor that determines the weight that should be given to a player's performance relative to his or her pre-tournament rating. The term $S_{\text {exp }}$ can be calculated by summing the expected scores, $E$, for each game using formula (1). Of course, this is only an approximation to $S_{\text {exp }}$ because in using formula (1) the estimated ratings are being substituted for the rating parameters.

The above formula can be understood as follows. First, the term ( $S-S_{e x p}$ ) can be thought of as a discrepancy between what was expected and what was observed. If this term is positive, then the player performed better than expected because the attained score, $S$, is greater than the total expected score, ( $S-S_{\text {exp }}$ ). Therefore this player is likely to be stronger than the pre-tournament rating predicts, so the player's rating is increased by the discrepancy magnified by the value $K$.

Similarly, if the term ( $S-S_{\text {exp }}$ ) is negative, then the player must have performed worse than expected, and therefore this player's rating will decrease by the discrepancy magnified by the value $K$. The larger the discrepancy, $\left(S-S_{\text {exp }}\right)$, in magnitude, the less "valid" the pre-tournament rating must have been, and the greater the change required to properly adjust the rating.

For example, if a player was expected to score 3 points out of a five-round tournament given the opponents' pre-tournament ratings but proceeds to lose every game, then the pre-tournament rating was a poor predictor-it should have been much lower to produce such a lackluster performance. When ( $S-S_{\text {exp }}$ ) is zero, then the player's expected score is exactly equal to the attained score. This suggests that the player's pre-tournament rating correctly predicts the actual performance in a tournament, so no adjustment is required. It is worth noting, however, that these calculations assume the opponents' reported pre-tournament ratings are known and are accurate estimates of their respective average strengths.

The attenuation factor $K$ in formula (2) can best be interpreted as the amount of weight given to the new tournament performance relative to the pre-tournament rating. The larger the value of $K$, the greater the amount of change allowed in one's rating. It can be shown mathematically that for a four-round tournament, setting $K=32$ corresponds approximately to computing a weighted average of a pre-tournament rating and a performance rating with weights equal to $94.7 \%$ and $5.3 \%$, respectively. ${ }^{20}$
20. The mathematical justification involves an approximate relationship between the quantities ( $S-S_{\text {exp }}$ ) and ( $r_{\text {perf }}-r_{p r e}$ ), where $r_{\text {perf }}$ is the "performance rating," at which the sum of the expected scores is equal to the attained score. The value that multiplies ( $r_{p e r f}-r_{p r e}$ ) in the formula provides the necessary information to determine the weighting.

This implies that each time a new tournament is observed, $94.7 \%$ of our belief is invested in the old rating, but we let $5.3 \%$ of our belief be guided purely by what happens in the tournament. If computing a tournament performance rating, $r_{\text {perf }}$, were a straightforward calculation, then an alternate method for computing a post-tournament rating corresponding to $K=32$ would be $r_{\text {post }}=0.947 r_{\text {pre }}+0.053 r_{\text {perf }}$. Analogously, when $K=24$, the weights become $96.2 \%$ and $3.8 \%$, respectively, and when $K=16$ the weights become $97.5 \%$ and $2.5 \%$, respectively. These approximations only hold when the discrepancy ( $S-S_{\text {exp }}$ ) is not too large.

An analogy can be drawn between formula (2) and tracking the position of a moving target in preparation for firing a missile. Suppose we have a rough idea about the current location of a target, and we aim our missiles accordingly. The laws of physics tell us precisely where the missile is expected to land. The target now moves, and our tracking instrument tells us the approximate location of the target. We can adjust the aim of our missiles to account for this new information. This is analogous to targeting a player's chess ability. A player's pre-tournament rating roughly conveys current playing strength, or the player's "position." The expected score formula summed against his opponents is how the laws of the rating system tell where the "missile will land." An actual total score is observed, and we adjust our "aim" of the player's true "position" by using formula (2). The rating system can therefore be viewed as a device that constantly tracks a player's ability as it changes.

Elo's approach to adjusting ratings by equation (2) generally works well when a player's pre-tournament rating is not too different from the player's actual strength. Mathematically, the approximation in (2) as a weighted average between the player's pre-tournament rating and performance rating breaks down when the pre-tournament rating and performance rating are far apart. This could occur if, for example, a player has not competed in a long time. Another instance where it does not make much sense to directly apply the formula in (2) is when a player has never competed in a tournament, so no pre-tournament rating exists.

## Provisional Ratings

The formula in (2) describes the procedure for estimating a player's rating given his or her estimated pre-tournament rating. This formula would appear to be of little use when a player has no rating before entering a tournament.

The USCF and FIDE have implemented systems to compute initial ratings using different sets of formulas. The resulting estimated ratings are often called "provisional ratings." As the name implies, we do not place great confidence in provisional ratings be-
cause they are estimates of rating parameters based on a very small sample of game outcomes. A provisional rating in the USCF rating system is an estimated rating that is based on fewer than 20 games. FIDE uses provisional rating formulas to calculate a player's rating during the 6 -month period in which the player first competes. Both of these methods involve averaging performance ratings over tournaments for the period during which a player's rating is considered provisional. In the current implementation of the USCF rating system, this is a problem. Because no limit is put on the time one's rating remains provisional, and because all game results count equally toward one's provisional rating, a game result from a year ago would have the same effect on his or her current estimated rating as a game played in the past week. This can be a problem when newcomers to tournament chess earn a low rating after their first tournament, become discouraged, and then return to tournament chess only after having improved.

An approach that has a strong connection to the rating update formula in (2) can be used to compute provisional ratings. The idea is simple. Before a player competes in a USCF tournament, he or she is assigned a rating based on, say, age. We'll call this rating a player's prior rating, and it is understood that this estimate is subject to a great amount of uncertainty because it is not based on the results of a player's game results. When this player competes in a tournament, formula (2) is applied using the prior rating as $r_{p r e}$, and the attenuation factor $K$ is set to be very large (e.g., 150) to give substantial weight to the performance. For a four-round tournament, $K=150$ corresponds approximately to maintaining $38.7 \%$ belief to the prior rating and the remaining $61.3 \%$ belief to the rating information learned from the tournament game outcomes.

A logical question to ask would be, why not simply give $100 \%$ belief to a rating computed solely from information from the first tournament? After all, this is the approach both FIDE and the USCF currently use in their computations, and it certainly seems reasonable to base conclusions about a player's ability exclusively on game outcomes. A subtle reason exists for making use of prior information in this context. In statistics terminology, the use of prior information addresses a phenomenon called "regression to the mean," or more generally, "shrinkage." ${ }^{21}$

The idea behind shrinkage can be illustrated by an example. Suppose a group of 20 chess players, all possessing the same average strength, competes in a single-round-robin tournament, and the winner achieves a score of 14 points out of 19 . Suppose also that the

[^8]player with the worst results obtains a score of 4 out of 19 . It should not be surprising that one player out of 20 scored as many as 14 points, and that one player out of 20 scored as few as 4 points even though all the players are of the same caliber. If these 20 players were to compete in a second single-round-robin tournament, it is likely that the results of the winner from the first tournament would not be as impressive as his or her outstanding performance from the first tournament. It could happen, but it is much more likely the player will produce results closer to an average score. Similarly, the player with the worst performance from the first tournament will probably have a performance that is not as poor. In general, it is arguable that players' performances in the second tournament will "shrink" towards the mean score compared to performances in the first tournament. This is not true in every instance; it is just true on average.

We can carry this argument directly over to the calculation of performance ratings. When we calculate an estimated rating for the player who has won the first tournament, we need to realize that performing a calculation that only uses information from the tournament is likely to produce an overestimate of his or her true ability (and analogously an underestimate for a player with a poor performance) because the player has likely overperformed relative to his or her true ability. A way to bring this overestimate back down is to calculate a weighted average of this extreme performance with the performance of an average player. Naturally, a substantial amount of weight would still be placed on the performance relative to the prior information. This procedure of shrinking values computed solely from the data (e.g., a performance rating) to the prior mean in order to draw conclusions from data is standard in statistical practice, and can be applied directly to the method of rating chess players. As a player continues to compete, repeated use of the updating formula guarantees that the original "prior" rating will have little impact on a player's current rating.

## Rating System Implementation

This section will discuss the implementation of some of the leading chess rating systems currently in use, including the USCF, FIDE, and PCA scales.

## USCF and FIDE Rating Scales

The method Elo laid out for adjusting ratings was adopted by the USCF in 1960 and subsequently adopted by FIDE in 1970. Through the years, various modifications were made to the systems, tailored to the needs of the governing organizations. Originally, the two systems were intended to produce ratings that were meaningful on the same scale. Because the two systems function independently and in-


Figure 7 Distribution of FIDE ratings, July 1994. Players who competed in at least one FIDE-rated game in the previous six months are included in the sample.
corporate slightly different updating algorithms, it is not surprising that a FIDE rating will not correspond exactly in meaning to a USCF rating. As will be discussed later in this article, USCF ratings went through a period of deflation in the 1970s. Accordingly, corrective measures were adopted by the USCF. As of this writing, USCF ratings are somewhat higher than corresponding FIDE ratings. That is, a currently active player with established USCF and FIDE ratings will probably be rated somewhat higher on the USCF scale.
The FIDE scale, which rounds its published ratings to the nearest multiple of 5 , only computes ratings as long as they remain higher than 2000. A distribution of the July 1994 FIDE rating list appears in Flgure 7. The mean rating for this time period is 2262 which is shown on the figure as a solid vertical line. The proportion of players with FIDE ratings less than 2200 is about $23 \% .{ }^{22}$ The ratings range from 2005 through 2780.

One of the main differences between the FIDE rating algorithm and Elo's original updating algorithm is that Elo's calculation computes the sum of a player's expected outcomes against each opponent, whereas the FIDE algorithm computes the expected outcome against the average rating of the opponents. Mathematically, these two computations do not produce identical results. The FIDE calculation, as Elo mentions, ${ }^{23}$ is an approximation to computation that was intended. The calculation carried out by the FIDE algorithm is problematic because if a player competes in an event against opponents with a wide array of abilities, the FIDE calculation may be a poor substitute for Elo's original formulas. ${ }^{24}$

Another issue concerning the FIDE rating system is that a player only acquires a rating if it is calculated to be over 2000. This suggests that, on average, initial FIDE ratings overestimate players' abilities because players only receive ratings if their initial performances are
22. FIDE only recently allowed all players to acquire ratings less than 2200, so this figure is of some interest.
23. See Section 1.66 of The Rating of Chessplayers, Past and Present.
24. For example, if a player rated 2005 competed against opponents rated 2600, 2600, 2600, and 2005, he would be expected to score about $15 \%$, whereas the FIDE formula would yield an expected score of about $7 \%$.
strong. A player a bit weaker than 2000 strength might have a good performance which would give him or her a FIDE rating, but a player who is stronger than 2000 who has a poor performance would not receive a FIDE rating. Thus the FIDE rating pool has a tendency to inflate over time because the initiated FIDE players tend to decline slightly to their appropriate level while their opponents respectively increase in rating.

The USCF rating system, which assigns ratings to all com-


Figure 8 Distribution of USCF established ratings, July 1994. Players who competed in at least one USCF-rated game in the previous six months are included in the sample. petitors in USCF-governed tournaments, does not require a player to demonstrate strong ability to earn a rating. ${ }^{25}$ Thus the range in USCF ratings is much larger than the range for FIDE ratings. Flgure 8 shows the distribution of players with established ratings (players with more than 20 rated games) for July 1994. The mean rating for established USCF players in July 1994 was 1490 . USCF established ratings ranged from a low of 45 to a high of 2763 . About $96 \%$ of all USCF established players had ratings less than 2200, as compared to FIDE's $23 \%$.

A common misconception about the rating system is that players' ratings follow some theoretical distribution, such as the normal distribution. ${ }^{26}$ No such assumption is made in the Elo system, or in any paired comparison model. The distribution of ratings is a function of the strengths of the players that compete. The Elo system only makes an assumption about the distribution of potential strengths an individual might display in a game (that is, the distribution of numbered slips in a player's box). This is an assumption about the range of strengths displayed by a single person, not about the range of average strengths across players.

An average conversion can be established between the USCF and FIDE rating scales by examining the ratings of players common to both systems. There are 484 players with ratings on both the July 1994 FIDE and USCF rating lists. Among these 484 players, only players that had established USCF ratings and had played at least 6 FIDE-rated games in the prior six months before the publication of

[^9]

Figure 9 Plot of USCF ratings against FIDE ratings for 211 players common to both July 1994 rating lists. Players who played at least six FIDE-rated games in the previous six months and at least one USCF-rated game in the previous six months, and had achieved an established USCF rating, were included in the sample. The curve that traces through the data is a "locally weighted scatterplot smoother" which summarizes the relationship between USCF ratings and FIDE ratings.
the FIDE rating supplement were included in the analysis. This resulted in a total of 211 players meeting this restriction criteria.

It turned out that most players had higher USCF ratings than FIDE ratings. Figure 9 shows a plot of the USCF ratings against the FIDE ratings for the 211 players, with a curve traversing the center of the points. The curve was determined using a statistical technique called "locally weighted scatterplot smoothing" that ignored unusual points (e.g., the player with a 2300 FIDE rating and an 1800 USCF rating). Apart from some points corresponding to players with unusually low USCF ratings, the pattern of data appears smooth and tightly clustered around the curve, except for FIDE ratings lower than 2200.

Figure 10 magnifies the relationship by plotting the FIDE ratings against the USCF-FIDE differences. The curve shows that the difference varies according to FIDE rating. For low FIDE ratings, the expected difference between FIDE and USCF ratings is high: the USCF-FIDE rating difference for a FIDE rating of 2050 is about 120; for a FIDE rating of 2100 the difference is about 70. This difference drops down to 30 at a FIDE rating of 2200. The difference climbs again to about 80 for a FIDE rating in the mid-2500s, and then declines once more to a difference of 65 to 70 in the high-2600s. A possible reason that the USCFFIDE differences are higher for FIDE ratings less than 2200 is that only players with USCF ratings over 2200 play frequently enough (more than five games in six months) to appear in the analysis. Among the 273 players with USCF ratings that played that often, the USCF ratings tended to be much higher compared to the corresponding players who played fewer than 5 FIDE-rated games. This may be explained by the earlier argument that newcomers to the FIDE pool of players may be initially overrated.

## The PCA Rating System

The Professional Chess Association (PCA) has developed a system that calculates their "Intel World Chess Ratings" on the same scale
as USCF and FIDE ratings. The pool of players that are rated under the PCA system has large overlap with the FIDE pool, so it can be viewed as a separate algorithm to rate the abilities of the same player population. Ken Thompson of Bell Laboratories was the main force behind the system, with some advice from statistician Axel Scheffner of Germany, economist Andrew Metrick of Harvard University, and me. The PCA system produces ratings for active international competitors. Only the top 500 players in any PCA ratings list are currently published, though all players competing in PCA-rated events possess ratings. The system was


Figure 10 Plot of USCF-FIDE rating difference against FIDE ratings for 211 players common to both July 1994 rating lists. The criteria for inclusion in the sample are the same as those for Figure 9. The scatterplot smoother demonstrates that the USCF-FIDE average rating difference depends on a player's FIDE rating. For players with a FIDE rating of 2050, the expected USCF-FIDE difference is 120; for players with a FIDE rating of 2200 , the expected difference is 30 ; for players with a FIDE rating of 2550 , the average difference is 70 . originally set up so that the top 150 players in the PCA system were forced to have the same average rating as the top 150 players on the FIDE list.

Every PCA player has either a provisional rating or an established rating. Provisionally rated players are those that have competed in fewer than 25 games against established players. The PCA rating system saves the outcomes of the most recent 100 games in which a player was involved, except that the results against provisionally rated opponents are discarded. A calculation is then performed for each player that estimates the player's rating parameter based on the stored game results (up to 100 games) along with the opponents' pre-event ratings at the time a game was played. The 100 games are weighted "linearly," implying, for example, that a player's 10 th most recent game receives 5 times as much weight as the player's 50 th most recent game. Games played in the same event receive equal weight.

Once these estimates are obtained, the system then calculates a "variance" for an individual player, which is a measure of how erratically a player performs against his or her opponents. ${ }^{27}$ The "variance" computation involves calculating the average squared deviation of each game result $(1,1 / 2,0)$ from its expected game result using the

[^10]
## The PCA system

downweights
games linearly. This may be an
area for
improvement.
expected score formula, and then transforming this value back to a value interpretable as a rating. This computation of the "variance" addresses the possibility that the box of numbered slips of paper may vary in spread from person to person-an assumption not made in the Elo system, and not assumed in the Bradley-Terry model. However, the PCA algorithm is carried out by first computing rating estimates assuming the Bradley-Terry model (i.e., the "variances" are all the same), and then acting as if each player has possibly different "variances." The result of this procedure are values that are difficult to interpret, except in an ad-hoc fashion. A more statistically sound procedure would derive the "variance" measures simultaneously with the rating estimates. Fortunately, the computed "variances" are not used in the algorithm to update ratings, so the "variance" computation is not relevant to the predictive ability of PCA ratings.

Fundamentally, the PCA rating algorithm is similar in principle to the Elo algorithm. ${ }^{28}$ The outcome of a game follows the BradleyTerry model, and ratings are updated based on outcomes against opponents along with the opponents' pre-event ratings. The main underlying difference between the two systems is in their methods of downweighting past performances. Because the PCA system downweights games linearly, it is difficult to interpret the weights. Consider a player who currently has competed in 100 PCA-rated games. In computing the player's current rating, the outcome of the player's 5 th most recent game was given four times as much weight as the player's 20th most recent game. However, after the player has competed in an event consisting of 10 games, the 20th game before the event has now become the 30th game, and the 5th game has now become the 15 th game. This implies that the rating calculation weights the more recent game (now the 15 th) by only twice as much as the less recent game (now the 30 th). It seems counterintuitive to have the weight between games depend on the number of games having been played. The Elo system, by contrast, essentially performs "exponential" weighting which preserves the weighting among events by their respective placement in the order of being rated. ${ }^{29}$ This may be an area for improvement in the PCA system.

It should be noted that the Elo approach to rating adjustment and the PCA approach share the same basic assumptions, though they are implemented differently. In both systems, previous results are downweighted relative to recent results. The PCA system uses computations that make fewer approximations than the USCF or FIDE systems. This by no means suggests that the USCF or FIDE

[^11]systems are less accurate. In fact, rating systems that use the Elo updating scheme, such as the FIDE and USCF systems, are following an approach almost universally endorsed by the statistics community. The idea behind the Elo updating scheme is this: Rather than save all past game results and compute a rating based on all the data each time a tournament is completed, extract only the pretournament summary information and combine it with information from the tournament to produce a post-tournament summary. At this point in the procedure, the tournament data may be discarded. This approach recognizes that only certain aspects of the data are relevant for making conclusions about playing strength, so it is not necessary or desirable to save all information and re-compute ratings from scratch.

## Rating System Characteristics

This section will discuss various factors that can affect the accuracy and reliability of ratings, including time controls, regional variation, and the passage of time.

## Varying Time Controls

One of the newer features of the USCF rating system stems from the formal introduction of "quick chess," which refers to games where the time control for a game is shorter than 30 minutes per person for the entire game. In the late 1980s, it was debated whether games played in chess tournaments with fast time controls should be rated under the same rating system that governs ratings for games played under slow time controls, or whether a separate rating scale should be created. Eventually, a second rating system that parallels the original system was constructed to rate these performances separately.

The main argument for using a separate system is that people who perform substantially better at quick chess than at slow chess may be demonstrating a different ability than that required for winning a slow game. For example, one could argue that a greater number of tactical mistakes are made in quick chess, so players who are quicker at calculating tactics may have better performances in quick chess. Because a different ability is being measured, a different rating scale is justifiable. Advocates of separate scales could claim that keeping a single scale for quick and slow chess would contaminate the system in the same way as would combining the rating systems for over-the-board and correspondence chess.

Opponents of separate systems for quick and slow chess would probably respond by asking: Why draw such a solid line at $30 \mathrm{~min}-$ utes? A player's ability surely is not noticeably different when playing under a time control of 29 minutes for the entire game versus 30 minutes. Nor is it obvious that 30 minutes has any special meaning.

## People who

 perform better at quick chess may be demonstratinga different ability.

## The rating

 system is only
## accurate on a

"within-region"
level.

Why not, for example, draw the line at 15 minutes, or at 45 minutes? These are questions that the advocates for separate systems need to answer before they can stand on firm ground.

A compromise between these two approaches, suggested to me originally by Roger Cappallo of MIT, involves constructing two rating systems that correspond to time limits of, say, 5 minutes for an entire game and 40 moves in $21 / 2$ hours. When a player competes in a tournament with a time control in between these two rates of play, both ratings would be updated. The magnitude of change for each rating depends on the closeness of the actual tournament time control to the time controls of 5 minutes per game and 40 moves in $21 / 2$ hours. Under such a system, a player might approximate his or her rating at various time controls by taking appropriate weighted averages of the two ratings. Of course, this system would require a further conjecture about the weights attached to the two ratings, so implementing such a system might be difficult in practice.

## Regional Variation in Ratings

The title of the recent play by John Guare, Six Degrees of Separation, refers to the theory that every two people are connected by at most six other people in the sense that the first person knows $A$ who knows $B$ who knows $C$, etc., who knows $F$ who knows the second person. The claim, therefore, is that a path can always be traced from person to person that only requires at most six people in between.

The notion of being able to trace paths that connect players has direct relevance to measuring chess ability. No claim is made here that any two players have competed via six degrees of separation, but it can be asserted that the fewer the degrees of separation between two players, the more accurate the comparison of abilities. For example, most players would probably agree that local weekend tournaments attract roughly the same players, so that these same players compete amongst themselves fairly regularly. The ratings for these players are likely to be accurate predictors of how each will fare against the other, assuming one is willing to believe the expected score formula in equation (1).

Even in cases where two players have not competed directly against each other, they may each have a number of opponents in common, which establishes a connection between them (via one degree of separation). By contrast, when two players live in separate parts of the country where they are likely never to have competed, rarely to have played opponents in common, or even to have played opponents of opponents in common, the accuracy of their ratings as predictors of a game result between the two is put into question.

One of the fundamental problems with using the rating system as a predictor of performance is that it is only accurate on a "within-
region" level. No provisions exist in the rating system to prevent disparities in abilities across different regions of the country for similarly rated players. As an extreme example of how the rating system could provide misleading interpretations, assume two groups of tournament players. The members of each group only compete among themselves, and each group has an average rating of 1500 . Also suppose that the players in the first group improve faster than those in the second group. After a period of time, both groups will still have an average rating of 1500 , but a player rated 1500 in the first group will likely be notably better than a player of the same rating in the second group. However, if the players in each group only compete among themselves, then we cannot possibly determine that the players in the first group are better players on average than those in the second group through their ratings alone. Some connection is needed between the two groups in order to recognize a difference in abilities.

A situation like the foregoing, in which members of a group compete only among themselves, occurs frequently in scholastic chess. At the beginning of their chess careers, scholastic players may happen to compete only against other scholastic players. A community of scholastic players is formed, and very rarely do players venture outside this community to play against adults. If they do, they rarely return to their scholastic community. The ratings for these scholastic players have an especially poor connection to ratings of adult players because the ratings were first derived from competitions among unrated scholastic players. The ratings for these players, therefore, are poor predictors of performance when they begin competing in adult tournaments.

While most local situations are not as extreme as the preceding examples, they do pose real challenges for a rating system. If communities of players do not compete against each other with any frequency, then the possibility exists that the strength implied by ratings in one community may become different from the strength associated with the same ratings in another community. This leads to claims by certain regions that they are systematically underrated relative to players in other regions.

The only remedy to this problem is to ensure that players in different communities compete regularly. This function is served by large state and national tournaments, which provide players'an opportunity to compete against opponents they would otherwise never encounter. These tournaments can be viewed as big mixing bowls, where the discrepancies among players' ratings relative to their strengths are combined and smoothed out. When players finish the tournament, they bring back to their communities slight adjustments in their ratings that reflect the overall strengths of their opponents in other communities. Similar adjustments occurs when players move

## Ratings of

 scholasticplayers may be poor predictors of their
performances
against adults.

Elo argued that the average rating among rated players has a general
tendency
to decrease
over time.
from one region to another. Such players mix the abilities described by their ratings with the abilities of the players in the new community. The net effect is an averaging of the discrepancies due to regional variation in ratings, although this may not be enough to solve the problem completely.

## Time Variation in Ratings

One of the most natural uses of the rating system is to monitor one's progress over time. Usually, players enter the rating pool with a low rating. As they gain tournament experience, their ratings increase slowly and steadily, reflecting their improving ability. But is it really the case that an increase in one's rating always means improvement?

Relating increases or decreases in one's rating over time to change in ability is a very tricky business. Even though one's rating may be changing, it is not clear whether it is changing relative to the entire pool of rated players. As Elo argued, the average rating among rated players has a general tendency to decrease over time. His argument of "rating deflation" examines the flux of players into and out of the player population. If no new players enter or leave the pool of rated players, then every gain in rating by one player would (ideally) result in a decrease in rating by another player by an equal amount. Thus, rating points would be conserved, and the average rating of all players would remain constant over time. But typically, players who enter the rating pool are assigned low provisional ratings, and players who leave the rating pool are experienced players with above-average ratings. The net effect of this flux of players is a decrease in the overall average rating.

Rating deflation can be defined more specifically as the result of a mechanism that causes players' ratings to decline over time when their abilities, on average, do not decline. Elo's explanation of rating deflation can be tightened. Specifically, the existence of rating deflation requires two features of the rating system. The first is that players' abilities, on average, improve over time. We should not take for granted that this happens because older players may have abilities that are decreasing over time. The second requirement is that the rating system, on average, does not systematically add or subtract points to players' ratings independent of their performances. If these two conditions are met, then there is a tendency for reported ratings to decrease over time even when certain players' average strengths remain constant. These players, in all likelihood, will compete against underrated opponents who are improving, and will on average obtain lower ratings due to competition against the underrated players.

In the mid-1970s, it was becoming apparent that the average rating of USCF players was beginning to decline. Deflation was not only evident from the year-to-year movement in the average USCF
rating, but also from an increasing discrepancy between USCF and FIDE ratings.

Throughout the past two decades, the updating formulas for the USCF rating system have been modified to combat this rating deflation. One approach was the introduction of bonus points and feedback points in the mid-1970's. When a player performed exceptionally well, his or her rating not only increased according to the usual updating formula, but also increased by the addition of a "bonus" amount. The justification for awarding bonus points was that the player was most likely a rapidly improving player, so the ordinary updating formulas did not track the player's improvement quickly enough. When a player was awarded bonus points for an exceptional performance, the opponents would receive additional points to their ratings called "feedback" points. The rationale for awarding feedback points was that the player's opponents should be rated against a higher pre-tournament rating because the player who was awarded bonus points was notably stronger than his or her pre-tournament rating suggested. To account for this discrepancy, extra rating points were added to the opponents' ratings. By the mid-1980s, these features were eliminated from the rating system, in part because it appeared as though bonus points and feedback points were overcompensating the natural deflationary tendency of ratings by causing the average to increase, and in part because the bonus point and feedback point system had no firm statistical foundation.

In the late 1980s, the concept of a rating floor was established in the USCF system. In its original form, this addition to the rating system prevented a player's rating from decreasing below the 100point multiple 200 points less than one's highest attained rating. ${ }^{30}$ If, for example, a player's highest attained rating was 1871, then the player's rating could not decrease below 1600 . More recently, the rating floor has been raised so that now instead of using a 200 -point margin, the system uses a 100 -point margin. In the example above, under the current system, the player with a highest attained rating of 1871 cannot decrease below 1700 .

Proponents of rating floors argue that they will not only combat the natural tendency of rating deflation, but will actually encourage chess tournament participation because they prevent one's rating from decreasing without limit. Furthermore, the rating floors may discourage players from purposely losing games to artificially lower their ratings, which would enable them to compete in lower-rated sections against weaker players and win large cash prizes. ${ }^{31}$ Nonethe-

## The updating

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## system have

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deflation.

[^12]less, the use of the rating floor is at odds with the principle that ratings are measures of performance. Additional rating points are being injected into the system whenever a player at his rating floor loses a game (or draws a game against a lower-rated opponent). It is also possible that players at their rating floors may have misplaced incentives since they have nothing to lose: that is, some of them may adjust their styles by purposely playing more recklessly in the hope of winning with less effort, especially against higher-rated opponents. If ratings are to be used as a predictive tool, the rating floor implementation must be considered a flaw in the rating system.

It is interesting to examine changes in the overall rating USCF pool. The USCF publishes annual rating lists that include players who had tournament games rated over the past year. In the January 1993 list, the mean rating of players with established ratings was 1595.4, whereas in the January 1994 list, the corresponding mean was 1542.5 . This suggests that the rating pool experienced an average decrease of about 53 points in 1993. Such a simple analysis is misleading, however. The table below summarizes mean USCF ratings broken down according to players' statuses in 1993 and 1994.

| Status <br> $\mathbf{1 / 9 3}$ | Status <br> $\mathbf{1 / 9 4}$ | Rating <br> $\mathbf{1 / 9 3}$ | Rating <br> $\mathbf{1 / 9 4}$ | Rating <br> Change | \# of <br> Players |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Established | Established | 1632.6 | 1641.7 | +9.1 | 12233 |
|  | Inactive | 1548.4 | - | - | 9670 |
| Provisional | Established | 1143.1 | 1184.4 | +41.3 | 1910 |
|  | Inactive | 1086.4 | - | - | 7933 |
|  | Provisional | 1124.7 | 1138.3 | +13.6 | 1772 |
| Inactive | Established | - | 1421.8 | - | 4393 |
|  | Provisional | - | 990.4 | - | 10777 |

The first line of the table indicates that 12,233 players had established ratings in both January 1993 and January 1994. The average rating for these 12,233 players in January 1993 was 1632.6, and this average rating increased to 1641.7 in January 1994. Thus, among players with established ratings in both years, an increase occurred in the overall average rating. The table also shows that among players who were provisionally rated in January 1993 and then established in January 1994, the overall average rating increased by 41.3 rating points. Furthermore, players who were provisionally rated in both January 1993 and January 1994 experienced an average rating increase of 13.6 rating points.

How can the overall average rating among established players in January 1993 (1595.4) decrease to the average rating among estab-
lished players in January 1994 (1542.5) if the average rating among players who were established in both years increased by 9.1 points?

The answer lies in the flux of the established-rating pool. By the end of $1992,21,903$ players who were active during the year had established ratings. Slightly more than $44 \%$ of these players became inactive in 1993. These players had an average established rating of 1548.4. In contrast, 18,536 players who were active in 1993 had established ratings in January 1994. Of these, slightly more than 34\% were either inactive or had provisional ratings in January 1993 (corresponding to the third and sixth rows). The average established rating for this group in January 1994 was 1349.9. In addition to maintaining 12,233 players from January 1993 to January 1994 who experienced a 9.1 -point average rating increase, the established rating pool lost a group of players with an average rating of 1548.4, and gained a group of players with an average rating of 1349.9. The net effect of this trade of players into and out of the rating pool resulted in an average rating decrease of 53 points.

The average increase of 9.1 points among players who had established ratings in both January 1993 and January 1994 can be shown to be "statistically significant," which implies that the increase is not simply due to random fluctuation in individual ratings. An examination of data from other years leads to the same conclusion. ${ }^{32}$ Possibly these established players' ratings increased at the expense of provisionally rated or unrated players, because the updating formula in equation (2) suggests that whenever two established players compete, the gain in one player's rating will result in the other player's loss. The only exception to this occurs when the value of $K$ in the updating formula is different for the two players, but the effect of this exception will not make a substantial impact on the overall average rating increase for established players. The other possibility is that, for some of these players, the rating floor has prevented their ratings from decreasing. ${ }^{33}$ The magnitude of this effect is hard to estimate.

If the rating system were functioning properly, we would not expect a significant increase in established players' ratings from one year to the next. In particular, the 9.1 -point average rating increase among this group suggests either that the rating floor is having a sizable effect on the ratings of established players, or that the provisionally rated opponents of these established players are overrated, on average.
32. Similar analyses were performed on data between 1988 and 1989, and between 1992 and 1993, and the same conclusions resulted.
33. In January 1994, approximately $8 \%$ of all active players with ratings between 1400 and 2200 were at their rating floor. This can be estimated by counting the number of players whose established ratings have 00 as the last two digits and comparing to the number of players with different final digits.

## We should not

 necessarily be concemed aboutchanges over time in the average rating of tournament chessplayers.

The argument that the provisionally rated opponents of established players are, on average, overrated is based on inference. It runs as follows. Clearly, provisional ratings are subject to great uncertainty, so that sometimes one would expect a provisional rating to overestimate a player's ability, and sometimes one would expect it to underestimate. If the provisional-rating system worked properly, the number of provisionally rated players whose average strengths were overestimated would equal the number whose average strengths were underestimated. If this were so, then among all contests involving a provisionally rated player and an established player, the average rating change among established players should be close to 0 . The intuitive reason is that the rating gains by the established players, who will usually have higher ratings than the provisional opponents, will be relatively small, but will be balanced by the large rating losses when they lose games. However, even when the provisional-rating system works properly, we would expect players' provisional ratings, in general, not to keep pace with their true average strength, but to underestimate it. This is because of the further assumption that provisionally rated players are generally improving at a more rapid pace than established players. If the provisionally rated players are, on average, underrated, then the established players should lose rating points overall. Obviously the reverse is happening, as the table on p . 88 demonstrates. We may infer, therefore, that provisionally rated players are not underrated but overrated. This inference provides evidence that the rating system may not be properly functioning.

Even though adjustments to the rating system have been implemented to counteract rating drift, it is worth pointing out that we should not necessarily be concerned about changes in the average rating of tournament chessplayers. It all depends on the goals of the rating system. The rating system by itself only makes assumptions about differences in players' ratings, not in their actual value. If 1000 were subtracted from (or added to) everyone's ratings, the rating system would still be just as valid, because differences in players' ratings would remain the same.

That being said, it is obvious that a rating has more interpretive value if it can be understood without directly comparing it to other ratings. When a player talks about being " 1800 strength," he or she is doing so with the implicit understanding that a rating of 1800 connotes a specific level of ability. Moreover, popular opinion believes that " 1800 strength" this year should connote the same ability next year, five years from now, and 20 years from now-and if somehow this does not happen, then something is wrong with the rating system. Unfortunately, a rating system solely based on game outcomes of players whose abilities may be changing over time is unable to guarantee that a particular rating will connote the same ability over
time. This observation has been made by writer and computer consultant John Beasley, ${ }^{34}$ who asserts that ratings can only be used to describe relative abilities and not absolute abilities. The abilities of players in the overall population are constantly changing due to factors such as studying, increased understanding of the subtleties of the game, and aging, and these factors prevent measuring absolute changes in ability from game outcomes. Suppose, for example, two players, both with 1500 ratings, play a 10 -game match, each scoring 5 out of 10. This results in post-match ratings of 1500 . Now a year goes by, and suppose both players have immensely improved their chess playing ability in the same amount, by intense study and informal practice. However, their ratings are both still 1500 , because they have not played any rated chess games. They compete again, and again each scores 5 out of 10 . Even though both players have improved vastly, we cannot detect this, because their ratings will each remain unchanged at 1500 .

Although it may not be possible to guarantee that a given rating will mean the same thing over time, it is possible to set a goal of maintaining certain characteristics of the overall rating pool. One possible goal might be to force the median rating to a specified level, or some percentile of all active players to a specified rating by periodically adding a fixed amount to all ratings. Suppose, for example, that a median of 1500 is desired. Then $50 \%$ of all players will have ratings above 1500 from year to year. This would allow a player to compare his rating with the average rating to determine his progress. A related idea involves specifying a certain small proportion of players to have a rating higher than some threshold value, and periodically adding an amount to all ratings to guarantee this. One such rule could be to guarantee that only $1 \%$ of all active players have ratings above 2200 , and uniformly adjust ratings to meet this condition. As long as we are consistent in defining what is meant by an active player, then either of these two approaches seems justifiable. Of course, this would mean that a player's rating might change due to an overall pool adjustment even when he or she is not competing.

Another idea that has been proposed is to align one rating scale to match another rating scale that is considered more universally acceptable. For example, the USCF has often considered aligning its rating scale with the FIDE scale, by updating USCF ratings periodically so the two scales have the same absolute interpretation. However, neither the FIDE system nor any other system in existence guarantees stability in its rating scale or its rating system. With the decision in 1993 to exclude Gary Kasparov and Nigel Short from the FIDE rating lists, FIDE opened itself to charges that its rating sys-

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[^13]
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tem was vulnerable to political manipulation, which alone would seem to disqualify it from being a "gold standard" of rating systems. A further argument against aligning two rating scales, such as the USCF and FIDE scales, is that the link from one scale to the other might be based on a small number of players, so the alignment might fluctuate primarily due to the imprecision of the estimated conversion between the two scales. Also, in trying to gain control over the USCF rating system, it is unappealing in principle to impose a condition on it that depends on information from another system over which the first system has no control.

Finally, one possible direction of effort is to develop tools, based on factors external to the rating system, to make ratings connote the same ability over time. One basic idea borrows from "item response theory" in educational testing. The Scholastic Aptitude Test (SAT) taken by many high school juniors and seniors has been constructed so that current students' performances can be compared to students', performances of the past. The Educational Testing Service does this by including a number of test items common to different exams. Thus individual exams are "linked" together by common test questions. Through these links, paths can be inferred that connect students of the past to students of the present via statistical models. Any given SAT score thus connotes the same ability today as in the past. ${ }^{35}$

This approach can be applied to rating chessplayers in several different ways, though the merit of any of these methods is certainly arguable. One idea is to make use of chessplaying software. Because the chessplaying ability of a non-learning chess program only improves if the code is revised, a chess program can be viewed as having a fixed ability. To use chess programs for assessing change in ability, the ratings of several chess programs could first be accurately estimated by having them compete against each other, as well as having them compete against a wide selection of humans. These ratings could then be used as fixed "anchors" in the rating system. Periodically, these chess programs should be entered into tournaments. The results of competition would determine the magnitude of any overall ratings drift. The drift could then be adjusted by adding or subtracting a fixed amount from everyone's rating. This idea makes the vital assumption that players do not learn how to improve their play against chess software, which is a demonstrably poor assumption as shown under certain test conditions. However, if the chess programs were required to compete infrequently, players would not necessarily have the opportunity to learn how to play against the software. A compelling argument against this approach is that humans play differently

[^14]against chess programs than they do against other humans. A performance against chess programs may not translate to an equivalent performance against humans of the same ratings. Also, implementing such a procedure of having computers play against humans regularly might be impractical and expensive.

A variation of this theme would consist of periodically identifying groups of players who seem to demonstrate stable abilities, and using them as anchors in the rating system for a certain length of time. It would be essential to prevent people from knowing which players were being used as anchors. Candidates for anchors would be those players who compete regularly without significant rating fluctuation. Such players might be used as anchors for six months at a time, after which the entire rating pool would be adjusted to reflect drift away from these players' ratings. The main criticism is that it is difficult, if not impossible, to assess a priori that a player's ability has reached equilibrium. This difficulty is exacerbated by the well-known phenomenon of "plateauing," in which a player's ability-and therefore his rating-may stay the same for months or years, and then jump up dramatically as a result of intangible factors such as additional study time, more experience, more confidence, or a change in openings or playing style.

Finally, a more rational approach to creating a system in which ratings connote the same ability over time involves designing a chess test to measure chess ability, and then designing a statistical model to predict chess ratings from the test. A series of chess questions could be constructed to test ability in all phases of the game. A sample of rated chessplayers would take the test, and formulas could be developed that predicted their ratings with reasonable accuracy merely from the responses to the test questions. This test could then be administered a year later to a different sample of players to see how the ratings derived from the test results differed from the actual tournament ratings. Based on these differences, an adjustment could be applied to all ratings to preserve the constancy of ratings over time. This approach, while making use of a source other than game results to measure chess ability, has the fringe benefit of identifying the aspects of chess that separate weak chessplayers from strong ones. On the downside, assessing the accuracy of the test becomes a new source of variability, and could increase the difficulty of measuring playing strength. In any case, designing and administering such a test and performing statistical analysis of the data could be expensive to carry out correctly, and for that reason among others might not be in the interests of chess organizations.

## Improving the Rating System

The Elo rating system as currently implemented appears to function reasonably well, and most players as well as statisticians are comfortable with it. Even though aspects of the rating algorithm are open to criticism, it is a self-correcting system. If a player's rating fails to represent his or her true average strength, the rating system will correct the player's rating from the results of tournament competition. Nonetheless, the rating system could be improved in various ways to provide more accurate predictions of performances without having to wait for additional feedback to correct inaccuracies. We examine some areas that seem open to improvement.

## Advantage Due to Color

The Elo rating system as currently implemented appears to function reasonably well.

It is commonly understood that having the white pieces confers an advantage. Elo estimates that White has a 1.33 times better chance of winning than Black. ${ }^{36}$ In my Ph.D. thesis, I used results of the World Cup tournaments of 1988-89 to estimate that, among top masters of similar abilities, White has a 1.56 times better chance of winning than Black. This corresponds approximately to an 80 -rating-point advantage for White. With such a large advantage to White, it seems that incorporating color information makes sense.

The advantage of having the white pieces can be framed in terms of randomly selecting numbered slips of paper from each player's box of numbers (strength distribution). When one of the players sits down to the board as White, the value of 80 is automatically added to every value in his box. This is a straightforward mechanism to describe how a statistician might model the advantage to having the white pieces.

The rating system can properly account for color by reexpressing the expected game score formula so that color is incorporated. A possible formula for the expected score of a game played between $A$ and $B$, when $A$ has White, could be given by

$$
\begin{equation*}
E=\frac{10^{R_{A} / 400}}{10^{R_{A} / 400}+10^{R_{B}-C / 400}} \tag{3}
\end{equation*}
$$

where $C$ is the rating advantage conferred to White ( $C$ is the number added to every value in player $A$ 's box). For example, if two players had the same value of their rating parameters, and $C$ were equal to 80 , then the expected score of the game for the player with White would be 0.62 rather than just 0.50 . The PCA rating system essentially uses this formula, with a value of $C$ equal to 32 connoting a 32-

[^15]rating-point advantage for White. ${ }^{37}$ This formula has strong connections to a model postulated by statisticians Roger Davidson and Robert Beaver in 1977. ${ }^{38}$ Before a formula like that in (3) can be implemented, tournament data must be analyzed to estimate the value of $C$, and to substantiate or invalidate its adequacy and validity. For average tournament players, the advantage for White is less than it is for top players, so the value of $C$ would be smaller than 80 . This also suggests that the value of $C$ might depend on the ratings of the players involved in a game.

Once an expected score formula that accounts for color is determined, the usual updating formula can be applied without modification based on these redefined expected scores. The main difference in updating is that players' ratings would not increase as much if they won with White, and would not decrease as much if they lost with Black. Also, drawing a game against a higher-rated player as White would earn fewer rating points than drawing as Black. This reflects the knowledge that wins and draws are easier to achieve with the white pieces than with the black.

## Probability of a Drawn Game

The model we have used for describing the outcome of a chess game has assumed that only a win or a loss is possible. It is very curious, indeed, that adding a draw as a third possible outcome complicates the problem so greatly. Elo in his 1978 monograph dismisses the topic by arguing that information about the probability of drawing a game is not generally available. ${ }^{39}$ It would be more accurate to say that the information regarding draw probabilities is just as available as information regarding winning and losing, but incorporating draws into the rating system is much more difficult.

The simplest way to model the probability of a draw that relates to our model of values drawn from each player's box of numbers was described in a 1967 article by statisticians P. Rao and L. Kupper. ${ }^{40}$ Their model assumes that a draw results when the values each player selects from their box are "close." This approach has some appeal because it implies that if two competitors in a particular game exhibit roughly comparable playing strengths, then the outcome of the game should be a draw. Rao and Kupper describe the procedure for esti-

[^16]
## With such a large

advantage to

## White, it makes

sense to consider
incorporating
color information.
mating what constitutes closeness in playing strength. Suppose $D$ is the largest difference in strengths displayed in a individual game that would result in a draw. Then Rao and Kupper show that the probability player $A$ with true average strength $R_{A}$ defeats player $B$ with true average strength $R_{B}$ can be expressed as

$$
\begin{equation*}
\operatorname{Pr}(A \text { defeats } B)=\frac{10^{R_{A} / 400}}{10^{R_{A} / 400}+10^{D+R_{B} / 400}} \tag{4}
\end{equation*}
$$

The probability player $B$ defeats player $A$ can be computed by substituting $R_{B}$ for $R_{A}$ in the above formula. The probability of a draw can then be computed by subtracting these two probabilities from 1. A little bit of high school algebra shows that this formula implies that the probability of a draw is the same for any two players as long as the difference in their ratings is the same. Davidson and Beaver, besides describing how to incorporate the advantage of playing White into the Bradley-Terry model, also describe how to extend Rao and Kupper's model for drawn games to incorporate the advantage of playing White.

There are two major difficulties with this approach. One is that the model that leads to the formula in (4) may not actually be correct. At the very least, it might be reasonable to think that the frequency of draws would not only depend on the difference in average strengths of players involved in a game, but also the overall level of the players. For example, very strong players tend to draw games much more often than weaker players who are more prone to game-losing blunders. A second problem is that even if the formula is correct, it is not clear how to use it to update ratings. One could compute an expected score of a game using the probabilities of a win, loss, or draw, but no tangible advantage has been gained over the approach currently used.

Even though the system now in place only calculates the expected outcome of a game, and is not directly connected to a simple probabilistic mechanism like randomly selecting numbers out of a box, it may be sufficient to describe playing strength. It may not be necessary to evaluate playing strength by modeling the probabilities of individual game outcomes. Although potentially valuable information is lost by not modeling individual-game probabilities, there is a realistic chance that the model does not accurately describe frequency of game outcomes anyway.

## Incorporating the Uncertainty of Ratings

Some players' ratings are more poorly estimated than others. This inevitable feature of the current rating system has mostly been ignored, except in specific instances.

The problem can arise in two ways. First, players who have ratings based on the results of only a few tournament games are likely to have their abilities measured imprecisely. These players are treated by the rating system as provisionally rated, and their updating formula reflects the uncertainty in their ratings. Second, players who have not competed in tournaments for an extended time may have become either weaker or stronger, so that their ratings are less reflective of their true average strength. The rating system currently makes no distinction between established players who compete regularly and those who compete sporadically. In both cases, changes in the procedure for updating ratings would be required to incorporate the uncertainty in estimating ratings.

Uncertainty also occurs when an organizer is late in submitting a tournament report to the chess federation office. The USCF rates events in the order it receives reports, without regard to the actual dates of event. Suppose two events, $G$ and $H$, occur separated by two months with $G$ occurring first. If the organizer of event $H$ submits a tournament report promptly, but the organizer of $G$ waits, say, four months before submitting a tournament report, then $H$ will be rated before $G$ even though the two events occurred in reverse chronological order. This is of particular concern if a player has competed in both events. Under the current rating system, the earlier event ( $G$ ) would in effect count more towards a player's current rating than the more recent event $(H)$. It is clear that the results of the earlier tournament need to be downweighted relative to a more recent event, even if an organizer submits the report much later.

The problems stated above can be alleviated in several ways. One approach allows $K$ in the updating formula to be a function of time since the player last competed and the number of tournament games played. As described earlier, $K$ is a value that determines the amount of weight given to one's performance rating relative to one's pretournament rating. In the USCF system, once a player becomes established by competing in 20 games, $K$ remains fixed at 32 . The only exceptions to this rule occur when a player's rating is from 2100 to 2399 (when $K$ becomes 24), and when a player's rating is 2400 or higher (when $K$ becomes 16). While the origin of this modification to the Elo system is not well-documented, one reason for its adoption is that players with high ratings are hypothesized to have abilities that do not change much over time. Therefore $K$ should be lower to reflect this stability. However, the argument to base $K$ on rating is not compelling.

When $K$ is large, past performances are effectively downweighted relative to the current performance. Two cases when it might be useful to have a larger-than-usual $K$ are when a player has a rating

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poorly estimated
than others.
based on very few games-so that past performances are not precise indicators of ability-or when a player has not competed in a long time, so that past performances may not be strongly indicative of current ability. It might be appropriate to have a lower value of $K$ when a player is competing regularly, because his or her ability is likely to be well-represented by the player's pre-tournament rating. Also, perhaps $K$ should be low when an organizer has submitted a tournament report much later than the tournament's ending date if more recent performances have been rated. For example, if a tournament was completed in June 1992, but the results were not submitted until August 1993, these results should be given relatively little weight in comparison to results from a much more recent event. When the players' ratings are updated, little weight should be given to this performance from a year earlier.

When changing $K$ in the updating formula to account for the uncertainty in a player's pre-event rating, a similar modification is necessary for updating the opponent's rating. For example, if an established player rated 1700 is defeated by another established player rated 1700 , the first player's rating decreases 16 points. If the second player had a provisional rating of 1700 based on only having played 4 tournament games, and the established player is defeated, then the current system again says the established player should lose 16 points. But in this second situation the player whose rating is provisional is possibly a much better player than his rating would indicate, but with a poorly estimated rating, in which case the established player should not lose as many rating points. We conclude that a player who competes against an opponent whose $K$ is large should gain or lose only a fraction of the usual number of points.

A formal approach to incorporating uncertainty into the rating system is to describe knowledge about a player's unknown rating parameter not simply by an estimate, but by both an estimate and a measure of variability of this estimate. ${ }^{41}$ This measure of variability describes how much faith one should have in the rating estimate. For players who have only played a few tournament games or who have not competed in a long time, the variability measure associated with the rating estimate will likely be large. Players who compete regularly will have measures of variability that are small, suggesting that their ratings are reasonably indicative of their rating parameters. The measure of variability, in conjunction with the rating estimate, can be used to provide a range of likely values that a player's rating parameter takes on. Instead of just reporting a "best guess" of a player's rating parameter, as the currently implemented system does, this
41. This method has been adopted by the developers of the Free Internet Chess Server (FICS) for its rating system.
extension can give a plausible interval of values of the rating parameter, with the interval being wider for players whose rating estimates are more uncertain.

The differing measures of variability from player to player have consequences for the magnitude of rating changes. For instance, when one player has a rating with a large associated variability (indicating that the player's rating is an imprecise estimate of his or her rating parameter) and an opponent's rating has low variability (indicating the opponent's rating is relatively precise), then the results of the game should have a large impact on the rating of the player whose rating has large variability, but only a modest effect on the rating of the other player.

The passage of time has an effect on the variability of one's rating estimate. As more time passes, the measure of variability could be increased to reflect the extra uncertainty in one's ability. In fact, the system could be modeled so that certain players, such as younger players, can be assumed to have measures of variability that increase more quickly over time than adult players, whose abilities likely do not change as quickly. Furthermore, the expected score function can be changed to incorporate the measures of variability. Specifically, the expected score of a game played between two players with uncertain rating estimates is closer to $50 \%$ than the usual formula pre-dicts-this argument was used earlier to describe the reason the dotted line in Figure 6 did not intersect the segments. The computation of the expected score incorporating the measures of variability can be derived precisely using integral calculus, but approximated numerically by a simple formula. ${ }^{42}$

It should be noted that one of the consequences of incorporating uncertainty of rating estimates into the rating system is that the rating gain for one player need not equal the rating loss for the other. The size of the changes would depend on the variability of each player's rating. This might seem, at first, to violate some underlying principle that points in the rating system must be conserved, but this "principle" is a myth. No technical or theoretical principle demands that rating points be conserved. In fact, as argued earlier, it is a blind adherence to this principle that is partly responsible for rating deflation. Appropriately incorporating measures of variability into rating estimates is one way to tackle the problem of deflation.

## Competing Incentives

One of the most important problems with the current rating system has little to do with its computational aspects or the validity of its

[^17]
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## theoretical

principle
demands that
rating points be
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## Chess rating systems have <br> probably <br> increased the <br> popularity of <br> tournament <br> chess, but they <br> may also be <br> responsible for <br> driving some <br> players away.

assumptions. It has to do with players' perceptions of ratings and the consequences of those perceptions. While the implementation of a chess rating system has probably increased the popularity of tournament chess, it may also be responsible for driving some players away.

In the popular mind, the rating system has become equated with a reward/punishment system. Even the terminology associated with ratings demonstrates this. When a player's rating increases, the player is often said to have "gained" rating points, and a player's rating decreasing corresponds to rating points "lost." So a player who loses games in a tournament must accept the additional insult of losing rating points as well. This interpretation of ratings may cause discouragement among players whose ratings continue to decline, and subsequently cause them to refrain from tournament play for fear of losing more rating points. The view that declining ratings are a punishment or insult is a disincentive for players to compete. One could take an alternate view, that a lowering of one's rating merely indicates that a player was initially overrated, not that a player's ability is declining. However, the fact remains that rating changes often affect a player's pride or self esteem.

This notion of a reward/punishment system is further enhanced by the construction of rating "classes" that correspond to rating ranges. For example, if a player's USCF rating falls from 1800 to 1999, the player is called a "Class A" player; if the rating falls from 2000 to 2199, the player is called an "expert"; if the rating falls from 2200 to 2399, the player is called a "master." When a player's rating crosses a boundary that places him or her in a higher class, a sense of achievement results. Similarly, when a rating drops below a class boundary, disappointment may result.

Even more consequential is that tournament organizers in the U.S. divide tournaments according to rating classes. Players whose ratings are just above a rating class boundary are prevented from participating in a lower class section, even though their ratings may be estimates of strength with high variability and their true strength might actually place them in the lower section. Dividing tournaments into sections by rating also creates an incentive for players to manipulate their ratings by artificially lowering them. They can accomplish this by purposely losing games in unimportant tournaments. The current design of organizing tournament sections and the reward/punishment interpretation of ratings make it difficult to view ratings simply as a means to measure ability and predict future game outcomes.

In the last few years, the USCF has developed an additional system called the "title" system. This system is intended to complement the current rating system by functioning as a reward system. At the August 1993 delegates meeting, an overwhelming number of
organizers even agreed that they would experiment by sectioning their tournaments according to titles rather than by ratings. (Not many of these experiments have yet been carried out, however.) The title system does not intend to track players' abilities as the rating system is designed to do; instead it rewards players for incremental improvements in their performances.

The USCF title system is based on the principle that an exceptional tournament performance should be rewarded, but a poor tournament performance should simply be ignored. To earn an " 1800 title," a player must achieve results in tournaments that exceed an 1800-player's expected performance by a certain margin. Under the current system, such a player would need to demonstrate five appropriately strong performances, or "norms," in order to acquire the title. If a player has accumulated four norms toward the "1800-title" and has a poor result in a subsequent tournament, this result would have no effect on his four accumulated norms. The title system only rewards positive results and does not punish poor results.

One of the crucial aspects of the USCF title system is that acquiring norms is completely independent of one's own rating, though it does depend on opponents' ratings. The same norm is awarded to a player with a high rating as one with a low rating if they both attain the same score against the same opponents. This is an important idea because it lessens reliance on one's own rating as a measure of chess achievement, which an Elo rating was not intended to be.

The USCF title system has strong connections to the system used by FIDE for awarding titles, such as the titles of grandmaster and international master. In the FIDE system, players must achieve outstanding results in events with highly rated players in order to acquire norms. The higher the average FIDE rating of players in an event, the lower the score needed to obtain a norm. As with the USCF title system, norms are never lost due to poor results. The USCF title system also has strong connections to the ACBL bridge rating system which awards master points only to positive performances, and never subtracts points for poor performances.

A direction that would relieve the rating system of the burden of functioning as a reward/punishment system would be to emphasize titles as the object of attainment, not a higher rating. I believe that class designations of ratings should be stripped away and associated solely with titles to restore the unconfounded interpretation of ratings as measures of ability. The less attention players pay to their ratings, the less reason players will have to feel discouraged by rating decreases. Furthermore, titles provide players with an incentive to keep playing in tournaments without the risk of dropping down a class because they have lost rating points. As Macon Shibut, editor of Virginia Chess, has argued in an unpublished article "USCF Lifetime

## The USCF has

developed
"titles" to

## function as a

relatively independent
reward system.

Titles: A Good Idea, But Will It Fly?" the title system needs to become part of chess culture much in the same way that the current rating system has become.

## Conclusions

The Elo rating system is based on two simple formulas: the formula that describes the expected score of a game given two players' ratings, and the formula that describes how a player's rating changes over time. As this article has described, assumptions are built into these formulas, and rethinking these assumptions may result in the need to modify the current formulas so that ratings have sensible interpretations.

When the USCF rating system was implemented in the early 1960s, players' ratings were kept on index cards and updates were computed by hand. As membership grew and the number of tournaments increased, updating ratings by hand became a tedious task. Doing this today would be unthinkable. With more than 30,000 USCF members playing every year, and thousands of tournaments organized every year, the USCF relies on the power of computers to perform rating computations, as well as a variety of other member-ship-related functions. Fortunately, because ratings are now updated by computer, modifications in the algorithm are not hindered by the complexity of the changes. As the assumptions underlying the rating system are continually questioned and tested, changes in the rating algorithm can reflect our understanding of the frequency that players win chess games and how players' abilities change over time.

While we are thinking about how to make the Elo rating system more acccurate and more useful, we should also consider putting it in its place as a tool for measurement and prediction. The title system should replace ratings as an incentive system and as a way of grouping players-at all levels, not just the international level. This would remove the pressure on the rating system to be a reward/punishment system, which it was never designed to be.

## MOVIES

## Chess N the Hood

Jamie Hamilton

## Fresh

Directed by Boaz Yakin; written by Boaz Yakin; starring Sean Nelson, Giancarlo Esposito, and Samuel L. Jackson
Miramax Films, 1994, 115 minutes, rated R

Remember the pictures of little Sammy Reshevsky in his sailor suit, beating a roomful of grown men at their own game? Somehow it didn't seem possible, but there it was. Fresh, a modern-day prodigy of the drug world, just as improbably beats a neighborhood full of drug dealers at their own game, sending most of his opponents to a fiery death and checkmating his chief rival at the tail-end of a risky, complicated combination.

Fresh isn't exactly a chess movie, but the game permeates the film from the opening sequence, in which the Brooklyn cityscape is set up building by building, like pieces being put onto an empty board. The title character (played by Sean Nelson) is a twelve-year-old boy already heavily involved in the drug trade, though he's not a user himself. Even at such a young age, Fresh is forced to choose between two continuations: the risky Crack Gambit, and the more solid Heroin Variation. The latter, claims his mentor, a dealer played effectively by Giancarlo Esposito, is "a gentleman's operation ... like banking, only it's more secure."

The overt chess element of the movie is Fresh's father Sam, an alcoholic chess hustler (played by Samuel L. Jackson) who isn't supposed to have contact with the boy, though they meet secretly in

[^18]

Fresh (Sean Nelson, left) and his father Sam (Samuel L. Jackson, right) meet in Washington Square Park.

Washington Square Park for lessons. Jackson, best known for his later role in Pulp Fiction, gives by far the best performance of the movie, with his constant patter of bravado and advice. "Put the clock on Fischer, I'll chew his ass up," he boasts, conveniently ignoring that Fischer was a powerful blitz player. He actually mentions the names of real grandmasters, making the dubious claim, "Benko, Botvinnik, Keres ... I played 'em all."

Father and son, believe it or not, play legal moves from recognizable openings, such as the Sicilian and Two Knights defenses. But the film is marred by one bit of obvious nonsense: Sam is impressed when his son puts him in check. "That's the first time you checked me," he says admiringly, and offers to celebrate. This somehow slipped by the film's chess consultant Bruce Pandolfini-who, along with "grandmaster [sic] Walter Shipman," is named as one of the greats by the father.

Some of the chess-related action takes place in the father's hovel, a trailer in a run-down lot where he has several correspondence games (and one game with himself) going on full-size boards. Here we see a bulletin board crammed full of chess clippings and photos, including the cover of American Chess fournal's premiere issue. We even see a full-screen closeup of the cover, given prominence apparently because of its excellent photo of Fischer.

When it was first shown, Fresh generated controversy-not for the "checking" scene or product placement, of course-but because its writer/director, Boaz Yakin, is not black. He was accused by some
of exploiting the ghetto for profit. Critics do have a point in that the film is full of stock 'hood characters and hackneyed scenes, much as chess always has the same pieces, which always move the same ways. But this set is also missing a few pieces. Actress N'Bushe Wright, who plays Fresh's drug-addicted older sister, comes from Brooklyn herself. In an interview after the movie's Washington, DC premiere, she noted, "I grew up in a home with a mother and a father. That film is not me."

The relentless brutality of the film is numbing. Middle-school kids shrug off the killing of their friends like blitz players sacrificing pawns. Two of the saddest scenes involve Fresh's friend Chuckie, who turns his pet dog into a killer to make some pocket money in a dog fight and later gets himself killed through an overdose of teenage bluster and bravado.

I don't know how people really talk in Brooklyn, but much of the dialogue seems forced, as though the writer is trying to throw in as many hip words as possible. Sometimes it's hard to understand what they're saying at all, in part because the sound quality isn't perfect. And most of all, the acting is not very exciting, contributing to the flat feeling of the film.

The final third of Fresh is the long, bloody combination in which Fresh sacrifices every piece but the queen and ends with a tidy checkmate. The father, a "psychological player," pops up to give tips that apply more to the plot than to chess. "Some people love the queen," he advises. "Tease them ... they can't think about their game." He also advises Fresh to be more calm on the defense. His most important advice of all is hardly uplifting: "Chess ain't fun, boy. How many times I gotta tell you that?"

People are not chess pieces. Chess may be a violent game, but no one gets killed. Boaz Yakin treats his characters a little too abstractly, a little too much like mere pawns whose individual fates are irrelevant. Ultimately I must agree with those who say that Fresh is a bit hackneyed and manipulative. After all, if you were one of the pieces in a chess game, wouldn't you feel exploited?

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## BOOKS

## Cold Comfort

Burt Hochberg

End Game: Kasparov vs. Short<br>Dominic Lawson<br>Harmony Books, New York, 1994<br>AN, xvi + 253 pp., $\$ 22.50$ hardcover

## "Wh

 hile the world champion professed himself to be greatly relieved at the retention of his title," writes Dominic Lawson at the conclusion of End Game, his book about the 1993 match between Garry Kasparov and Nigel Short, "he finished the twenty-game match unable to 'crush' Short, as he had promised to do before the event."Reality check: At the beginning of the match, while Short was still fumbling with the key to the ignition, Kasparov was zooming off to a distant lead with three wins in the first four games, five in the first nine (the others were draws). By the halfway point the match was already over, except for the formality of the second half. Kasparov coasted the rest of the way and finished with six wins to Short's one and a final score of $121 / 2-71 / 2$. If 6-1 isn't a crush, it's hard to imagine what would meet that definition in Lawson's lexicon. The best thing you could say about Short's overall result is that he and the world champion competed in the same event and Short came in second.

Given such a lopsided outcome, why would anyone want to read this admittedly biased book told from the loser's point of view? What would you expect to find in it besides sour grapes and roads not taken? End Game is in fact a compote of bitter fruit, but it is also an interesting and worthwhile book, though perhaps not in ways the author intended.

[^19]Seldom are we permitted an inside view of the organizing and playing of a competitive chess event at this level. It isn't pretty, if Lawson is to be believed (this is not a given). The cliche about candid journalism is "warts and all," but here all we see are warts. Treachery, political chicanery, naked greed, and all of the seven deadly sins are present in abundance. Poor Paul Morphy! His gentleman's game, untainted by money, is as dead as he is. High-level chess today speaks the brutal language of football and ice hockey. The English writer Julian Barnes found this so remarkable that he titled his Granta magazine article on the match "Trap. Dominate. Fuck."

Lawson's book is valuable for its discussion-though admittedly from the perspective of the Short camp-of the events surrounding the FIDE-PCA schism. The seed that was to become the Professional Chess Association, which was formed for the express purpose of taking control of the world championship away from FIDE, was planted in 1985 when FIDE president Campomanes, perhaps at the behest of Soviet politicians friendly to Anatoly Karpov, suspended the first Kasparov-Karpov match when it seemed to some that Kasparov was finally turning things around. Kasparov never forgave Campomanes for that, but surprisingly, it was Short who seems to have been the prime mover in the PCA, at least initially. Lawson gives a fascinating account of the events that followed Short's phone call to Kasparov to propose a match outside of FIDE ("Nigel," Kasparov replied, "I have been waiting eight years for this moment").

Dominic Lawson and Nigel Short have been friends for a long time, and in his Preface Lawson recognizes that he might be "accused of a bias in favor of Nigel Short and against Garri Kasparov." To this he says, "I plead guilty." (Fair enough, but hardly necessary: his amity with Short and animus toward Kasparov stick out tiresomely on every page.) Lawson's bias, in itself, is not a problem. Knowing where the author stands helps the reader ori-

ent himself so he can arrive at a reasonable interpretation of events. But when Lawson tells you the sun is shining while it's pouring buckets, engages in snide and gratuitous name-calling, is conspicuously negligent in matters of historical accuracy, and disguises nonsense as expertise ("The average chessplayer is allowed to go over the same moves in his head again and again. The grandmaster should check each variation only once; if he needs to check more often, then he is not playing like a grandmaster"), his book loses much of its credibility.

It also does a disservice to Short. Julian Barnes in his Granta article notes that "Short has a history of graceless behavior," and as seen through Lawson's lens, the challenger appears as an undisciplined, foulmouthed crybaby. But that is not the chessplayer we see with our own eyes in the arena with Kasparov. Here is a man who deserves nothing but respect for his refusal to roll over and play dead in the face of a mountainous psychological challenge, not to mention a formidable opponent. In their 15 previous encounters (at championship time controls) Kasparov had won 10 times while allowing Short but one win and four draws. According to Barnes, William Hartston believed "at some level Short recognised he wasn't going to beat Kasparov ... In Hartston's view, this fundamental self-doubt had also leached into the Englishman's play. 'I get the feeling [said Hartston] that Short is trying to prove to himself that he isn't afraid of Kasparov-but he is.'"

Short lost badly, as expected. Lawson, with a bit of time for sober reflection from a safe distance-after all it was Short, not he, who had to go belly to belly with Kasparov day after day-should have put matters in some sort of balanced historical perspective. Short himself, in a subsequent interview in Chess magazine, came across as a reasonable, thoughtful man who has come to terms with his defeat. But End Game has trouble accepting the Short end of the stick.

Regarding game 1, for example, Lawson quotes Short: "I'm a pawn up with a better position." But Short lost on time. In every subsequent game that Short loses, Lawson is there to tell us that things should have been different. Every dark cloud has its silver lining, up to the very end in game 20: "The world champion fell headlong into Robert Hübner's prepared variation ... badly hit by Short's opening preparation." Reading only the notes, you might think Short won this match.

Sifting through the ashes, Lawson and Short glean a few specks of satisfaction from meaningless statistics. Noting that Kasparov's first win in a world championship match game (in the marathon 1984-1985 Karpov match) had come after 32 attempts while his own first win came after only 16, Short makes the preposterous observation that he was "twice as quick" as Kasparov. Lawson points out that
by scoring $7 \frac{1}{2}$ points instead of 6 , Short performed better than the statistical expectation based on the two players' pre-match ratings.

Lawson writes: "Short ... displayed an extraordinary resilience at the time of greatest crisis, and over the last eleven games had held his own with the champion, and even won the last decisive game ..." Short and Lawson both ignore the plain fact that those last 11 games were played when Kasparov was already assured of winning the match. In a post-match interview, Kasparov said, "I had good resources which I never used in this match because after Game 9 the match was there, what the hell ... I wanted to enjoy myself, analyse different positions, I was thinking more about the future than about this match." Moreover, it was just after the 10 th game that Boris Yeltsin ordered the shelling of the Moscow "White House," which was a serious distraction for the politically active Kasparov.

Recalling his lifetime results against Kasparov, Short notes, according to Lawson: "Before the match, I scored only fifteen percent [three draws in the most recent ten games]. In the first ten games of this match I scored twenty-five percent [five draws]. In the second ten games of the match I scored fifty percent. Either he's getting weaker, or I'm getting stronger, or maybe it's a bit of both." (Old joke from Eastern Europe: A man walks into a restaurant and asks the waiter if the rabbit stew really has rabbit meat in it. "Of course," says the waiter, "but to be honest there's also some horse meat." "How much horse meat?" asks the customer. "It's half and half," replies the waiter. "One rabbit and one horse.")

The simple truth is that Short lost because Kasparov was the better player-"the strongest, the most competitive, the most undermining, the most carnivorous chess player in the world," in the words of Julian Barnes. But Short's score might not have been quite so bad had he avoided certain psychological and practical mistakes. Many times Short excuses his bad play by blaming time pressure. This is unacceptable. Alekhine wrote that a player who blames the clock is like a criminal who says he's not at fault because he was drunk at the time. Knowing how to handle the clock, he said, is just as important as knowing how to play endgames.

Even more important in this case may have been the emotional wringer Short put himself through at a critical time by dismissing his second, Lubomir Kavalek, after the third game. He thereby lost not only a smart and experienced supporter but also Kavalek's legendary million-game computer database. Kavalek and Short had been working together for several years, but as Short pointed out in his Chess interview, "I had some problems with Lubosh already for a long time ... I almost terminated our relationship last year after the Karpov match ... I thought it was important to do this as soon as possible. Probably it would have been better to do this before the start of the
match but there were certain legal problems ..."
Even before the start of the match, at a time when he should have been immersed in technical preparations, Short was up to his ears in getting it organized under the auspices of the new PCA. The break with FIDE may have been a necessary step, given the shabby way Campomanes had treated Kasparov and was treating Short (he had accepted a match bid without consulting the challenger), but it left the very complicated and stressful problems of finding a site and sponsor up to the players themselves.

Pre-match stress may have contributed to Short's bad nerves in the match. Given the carelessness evident throughout Lawson's book, I must assume that the following passage is not an attempt at humorous wordplay but simply a tin-eared blunder: "... not just at the start of the match, not just at the beginning of each game, but at every playing moment of every game throughout the whole match, the challenger was weak-bladdered with nervous tension. And this, more than anything else, explained why he was now, after eighteen games utterly drained."

Ultimately, though, Short's defeat should be ascribed to his own lack of professional training. "He is painfully aware," writes Lawson, "that Kasparov's intensive and unremitting training in the Soviet School ... has given him a lead in chess knowledge that Short, however talented, can never recover ... 'It was only when I got to twenty [says Short] I realized I should have been studying chess. At the time I didn't mind. But now I resent enormously the fact that I didn't receive a proper chess education. I would have become a much stronger player: there are some things you can never catch up."

Short's choice of the word "resent" is emblematic of his personality and his lordly approach to the world championship struggle. After the match he told Chess, "I'm quite sure that I can become world champion." But in the latest candidates' cycle, Short won a narrow victory over the veteran Boris Gulko and was totally destroyed by Gata Kamsky. Time for another reality check?

# A Classic Study of Fischer's Style 

Fred Wilson

Bobby Fischer: A Study of His Approach to Chess
Elie Agur
Cadogan Chess, London, 1992
FAN, ix + 276 pp., paperback, $\$ 25.00$

Two friends of mine visited my shop on successive days and asked the same question: "Is there anything new that's good?" As both are strong players, have good chess libraries, and actually read their books, I immediately recommended Elie Agur's recent book on Fischer. Both picked it up, and after browsing through it for about $20 \mathrm{~min}-$ utes, both remarked, "I think I'll take it. This is a real book!"

And indeed it is. Bobby Fischer: A Study of His Approach to Chess is one of the most well-thought-out, deeply analyzed, clearly written, and superbly researched chess books I have ever read. In the author's own words: "Besides being a st dy on Fischer, it is a treatise on the middlegame at large ... I have a tempted to analyze the elements of the middlegame as they find their expression in the approach of an eminent universal chess player."

Agur's book was prepared before Fischer's strange 1992 match with Boris Spassky, and refers to that match only briefly in the Introduction. This is probably for the best. Fischer's most ardent fans would not claim that their hero was in peak form after 20 years away from competition. Nor do many of Fischer's games in the 1992 match bear much connection to his earlier rapid, sharp, incisive play-although his fierce will to win remained. Agur takes for his subject the Bobby Fischer who retired in 1972.

Agur has organized his material into themes that few others have even mentioned, much less probed in depth. Sections such as "Piece Placement," "Material Considerations," "The Art and Craft of Liquidation," "Maintaining the Positional Tension," "Switching Advantages," "Clarity," "Straightforwardness," "Reducing the Opponent's Options," "The Will to Win," "Double-Edged and Speculative

[^20]Chess," and yes, even Fischer's occasional negative characteristics like "Superficiality" and "Misplaying Won Positions" are fascinating because Agur has chosen his examples so carefully (including 373 diagrams!) and explicated them with a smooth blend of his own original analysis and much germane commentary by earlier writers on Fischer, usually grandmasters.

He has also-and this is most unusual for a chess book-carefully footnoted the text; and the reference section at the end is quite interesting. Curiously, however, the book is poorly indexed, with no listings of either games or openings. Therefore it is difficult to look up a favorite Fischer game to see what Agur might say about it. Still, the thoroughness of Agur's research is amazing. Over a three-year period, he seems to have read every book and magazine article referring to Fischer in the Niemeijer Chess Collection at The Royal Library in The Hague. As a result he has found much obscure but insightful commentary.

Agur uses the position in Diagram 1 to illustrate the truism, which perhaps more than anything else separates masters from amateurs, that "making a choice between a number of

$1 \square \quad$ Fischer-Barcza, after $26 \ldots$ 日xc8 concrete variations can only be done with regard to an abstract evaluation of the positions to which they lead." Then he quotes this candid observation by Alexander Kotov: "I was sitting next to the table on which the game (against Barcza) was played. In a matter of seconds Fischer found the right way to

 Her the rook stands best. After 33 ... g6 34 当e 3
 sitie 3 was reached. Every chess master knows how difficult it is to find such plans in the endgame." What is particularly impressive about this quote is that it is not from one of Kotov's famous books such as Think Like a Grandmaster, but from an obscure article, "von Stockholm nach Curaçao," in Schweizerische Schacbzeitung (April 1962).

Compared to earlier English-language works on Fischer, Agur's book stands out as a significant source of independent criticism. David Levy's How Fischer Plays Chess (New York, 1975) is a rather straightforward, sympathetic biography whose main value lies in its 70 complete games with largely Soviet annotations. Robert Burger's The Chess of Bobby Fischer (Radnor, PA, 1975) is a peculiarly organized work on tactical and endgame themes based on the play of Fischer and others; it does not seem to offer much in the way of new ideas about Fischer's style, except that the author seems to feel he was particularly fond of zwischenzugs.

Perhaps Agur＇s greatest contribution to our understanding of Fischer＇s approach to chess in general，and the middle game in par－ ticular，is that he notices important aspects of Fischer＇s famous and little－known games that have either escaped the notice of other an－ notators or have been misunderstood by them．He often gives excel－ lent original analysis to support his observations．

Some of the strengths and even weaknesses of Agur＇s book can be seen in his discussion of a position from Berliner－Fischer，West－ ern Open 1963．This example is from the first chapter，＂What＇s In a Style？＂（pp．1－3）．

What typifies Fischer＇s style？In 1963 Fischer wrote a series of articles for the American magazine Chess Life．In the September issue of that year he analyzed his game against Hans Berliner ．．．which he concluded with these words： ＂It is difficult to find one particular game that is typical of my＇style．＇This comes close．＂I should like to examine the critical phase of that game［see Diagram 2］，which displays much that is typically ＂Fischerian．＂

Fischer＇s slight advantage consists of a two－to－ one pawn majority on the queenside，and White＇s doubled and vulnerable e－pawns．We realize that Black hasn＇t so far undertaken any action that would compromise his pawn structure．He would do so soon－with a move that is a typical Fischer device． Black＇s pieces are quite actively placed．His position
 would have looked rather innocuous，though，had it not been for the queen at $f 4$ ．A queen at，say，e7 or c7 would have been a more common sight for this type of position．How much is the queen＂in the game＂at f4？Fischer is most sensitive to ques－ tions of piece placement．As we shall soon see，the queen would play a decisive role there in the outcome of the game．What con－ crete threats does Black have？The most obvious and immediate is of course ．．．Mxe4．But White＇s pawn on e5 can come under attack as well by ．．．昌c5．Black has only to see to it that his king gets some ＂air，＂after which the above threats，plus two other rook moves along the c－file，namely ．．．品2 and ．．．气cl，are to be reckoned with．The unassuming $20 \ldots$ h6 is good enough a move to keep all the threats and secure some advantage，e．g．， 21 M m 7 Za c 1 ！（cer－
 winning），and Black wins one of the e－pawns．Or 21 f 3 号c5 22 甾d7 alc8 23 Me M e $8+$ © $\mathrm{b} h 7$ ，and White faces some difficulties．
This discussion is a superb delineation of the essential features of this position，and much more thorough than Fischer＇s own commen－
tary (on Black's 20th move) in Chess Life. Agur goes on to present original and instructive analysis showing how Fischer increased his advantage after $20 \ldots \mathrm{~g} 521 \mathrm{f} 3 \mathrm{~g} 422$ 昷e2. However, Agur commits some analytical errors in criticizing Fischer's $22 \ldots \mathrm{~g} \times f 3$ and, after the
 ment Berliner's 25 씁 f , which Fischer showed in Chess Life to offer less resistance than the superior 25 留d2. What these errors tell us, though, is that Agur has done a monumental amount of original work on Fischer's games. This is commendable, even if he may go a bit too far in trying to describe Fischer's play in terms of general principles and tendencies. Agur's work, like any piece of chess analysis, can be improved upon, but it shows the value of digging deeply into games that might seem to be already well known and thoroughly studied.

Although Bobby Fischer: A Study of His Approach to Chess has not caused in me any startling reevaluation of Fischer's place in chess history-I still personally believe him to be the strongest player of all time-it has made me keenly aware of how many interesting Fischer games were, heretofore, inadequately examined. With this book Elie Agur has taken a giant step toward correcting this situation. When you consider Kasparov's (pre-comeback) view of Fischer, as expressed in the Foreword: "Fischer's achievement is unsurpassed ... I hope to be considered his follower," you realize that any chessplayer would do well to buy this book.

# Let Us Now Quote Famous Men 

## Alex Dunne

Fournal of a Chess Master<br>Stephan Gerzadowicz<br>Thinkers' Press, Davenport, IA, 1992<br>AN, iv + 291 pp., paperback, \$19.95

Does fournal of a Chess Master rank up there with the collected games of Bobby Fischer, or even Laszlo Szabo, or perhaps Hector Rossetto? Well, maybe not-all those names have at least some recognition factor. Who is Stephan Gerzadowicz? Why has he written a journal? And why should anyone buy it?

First, it is an excellent book. Second, the games are rich and well-annotated. Third, it is about correspondence chess. The last point is the most damaging. Correspondence chess is the neglected step-sister of Caissa. In the opinion of real chessplayers, who play 40 moves in two hours or less, correspondence chess is just one square removed from chess problems and fairy chess. "No real man would eat quiche, quote from Peer Gynt, or play correspondence chess," they might say. But this is chessism at its worst, and as usual, the ones truly hurt are the holders of these beliefs themselves. What many over-the-board (OTB) chessplayers fail to recognize is that postal players do it deeper. Strong postal players have shown their depth time and time again. Postal chess is a research project, a doctoral thesis, a constantly adjourned position, move by move. Conventional wisdom holds that a player rated 2000 OTB will play at $2300+$ strength through the mails simply because of the increase in time, availability of books, and lack of nervous tension. His rating will not reflect these differences, because ratings measure relative, not absolute, success, and his competitors will have the same advantages. There has been no published research to bear me out, but I believe that the increasing depth of grasp of the game continues throughout the rating spectrum. I believe that Stephan Gerzadowicz, at times rated 2400+ in postal chess, is playing and analyzing at about 2600+ OTB level.

[^21]The games are the main thing, but Gerzadowicz's prose cannot be ignored. If the legendary Bartlett was a 2800-player in the quotation game, Gerzadowicz is rated over 2700 at least. His text is peppered with pithy comments pilfered from famous figures, most of them non-chessplayers. Gerzadowicz's world is populated by Kierkegaard, Hegel, and Yogi Berra, and features wisdom distilled from Nimzovich, Lasker, and de Sade. Thoreau strolls through the book, sits and visits a while, then goes off to other, more practical pursuits. Shakespeare, Goethe, and Jim Fixx are here. In short (yes, Short's here too), there is gold in this book. A drawback is that some of the quotes are a bit convoluted and some are rude, but those are the exceptions. Gerzadowicz is a witty and learned man, and like the Fireside Poets, he invites us to partake of his world.

## What About the Chess?

Many years ago a heretic named Duncan Suttles drifted out of the northern tundra and won a lot of games by ignoring the center, fianchettoing the dark-squared bishop, and playing his knights to h6 and a6. He won so often that he became a grandmaster of both ОTB and postal chess. His style of play seduced a lot of players who considered the Romantic style too old-fashioned and the Classical style too dry. But no one could be quite as subtle as Suttles, eventually not even Suttles, who drifted back to oblivion in the frozen North.

Although Suttles has left the scene, his influence hasn't. As Black, Gerzadowicz plays the Rat, the Robatsch, the Pirc, the Modern, the King's Fianchetto, and the "Irregular Opening"-they are all one: 1 ... g6 and 2 ... g7. White's opening moves? Well, they don't matter much.

The Rat Opening is explored in depth here, as it is the author's favorite defense. And for the sake of comparison, Gerzadowicz plays 1 g 3 as well, getting the Rat with a move in hand. The index lists many different openings ( 25 of them), but you have to go to game 30 before you find a Gerzadowicz game without a g-pawn being advanced on move 1—and that game starts 1 d 4 Øf6 2 @f3 g6! Oh, well. Anyone interested in playing the Rat can learn much from Gerzadowicz's treatment and analysis. He understands deeply the openings, middlegames, and endings that evolve from the fianchetto.

A unique and strong aspect of Gerzadowicz's presentation of his postal games is his publication of notes while the games are still in progress. Originally writing in the monthly magazine Chess International, Gerzadowicz shared his ideas, plans, and predictions about his games in the 1987 Absolute Championship, the strongest USCF postal tournament-during the event. The opposition was top-rated, and Gerzadowicz's notes are among the most fascinating tournament analysis ever published. You have to have a full plate of Yankee beans
to publish your analysis and predictions before the game ends. The notes here are sharp and usually accurate, but when the surprises come, Gerzadowicz is in there pitching.

One complaint: This was a terrific series of articles when it first appeared in Chess International, but the articles should have been edited for the book. They don't read quite as well in the form of chapters; for one thing, the articles should have been broken down and reformed into complete accounts of the individual games. But it is still great fun and top-flight chess. An intriguing feature of Gerzadowicz's analysis is his assessment of the chances that he will win, draw, or lose the game in progress. At the end of a block of annotation he will pause and give his prediction, e.g. "W10\% L40\% D50\%." It is interesting to see how individual moves can shift these estimates about. The student should pay attention to Gerzadowicz's losses (he made an approximately even score in the Absolutes), especially when (and how) the author realizes that his opponent has the superior chances and the outcome gradually becomes clear.

The one part of the book that I did not care for was Chapter 3, "Letters to a Friend," in which Gerzadowicz annotates games for "The Average Player." The five games selected lack instructional value. Gerzadowicz is insightful and delightful when analyzing his own games, which he thoroughly understands, but he is on foreign soil in the Sicilians and Benonis in this chapter (even though Black does play ... g6 in the Modern Benoni). Perhaps annotating games like these is part of the life of a chessmaster. Perhaps the author and publisher believe that adding games annotated for Mr. Average will help the sales of the book. I certainly hope they are right, since this book deserves a wide reading by players of all levels.

There is a chapter in 7ournal of a Chess Master that should itself be expanded into an entire book. "Duelin' Notes" features some strong players annotating the same game from different sides. These include Victor Contoski and Ron Lifson, among others, from the postal world, and IM Danny Kopec and NM Robert Seltzer from the other world. Postal chess is an ideal medium for this type of exercise, as the players typically keep written notes throughout the gamenotes that do not suffer from being written through the prism of the game's eventual result. There is added fascination when strong players express different opinions about the same position.

If you are a postal chess player, you should buy this book now, because only 1,500 copies were printed in the first edition. If you are an OTB player who loves chess and wit and can look without prejudice at a different chess universe, this book is the best introduction available to high-level postal chess. Gerzadowicz deserves high marks for his 7ournal of a Chess Master-even if he doesn't realize that 1 e4 is the strongest move on the board!

## BRIEF REVIEWS

One of our
favorite lines in
all chess
literature is the
great Cuban's
guileless
statement, "As
one by one I
mowed them
down, my
superiority soon
became
apparent."

## Game Collections

My Chess Career, by José Raul Capablanca (edited and revised by Lyndon Laird), Grandmasters Publishing, Corsicana, TX, 1994, AN, 239 pp., paperback, $\$ 15.95$. (Revised and expanded edition, originally published in 1920.) Capablanca's classic is essential for your chess library, but in this edition Mr. Laird has not improved on the original. By the way, one of our favorite lines in all chess literature is the great Cuban's guileless statement, "As one by one I mowed them down, my superiority soon became apparent."

Grandmaster Chess, by Glenn Flear, Cadogan, London, 1995, FAN, 192 pp., paperback, \$17.95. A nononsense chronicle, with crosstables and 41 annotated games, of the major chess news of 1994. A similar volume every year would be nice.

Gary Kasparov's Best Games, by Raymond Keene, Henry Holt, New York, 1993, FAN, 64 pp. (oversized), paperback, $\$ 14.95$. One of "the supreme mental gladiators on Planet Earth" is interpreted by his former chief apologist. Large format with many photos.

Chess Praxis: 21st Century Edition, by Aron Nimzowitsch (edited by Ken Artz), Hays Publishing, Dallas, TX, 1993, AN, iv +300 pp., paperback, \$17.95. (Revised edition, English translation by J. Du Mont originally published in 1936.) Less attractive than previous editions. If you already think chess is a hard game, buy this book and reduce yourself to utter confusion.

John Nunn's Best Games, by John Nunn, Henry Holt, New York, 1995, FAN, 320 pp., paperback,
\$26.95. Like all of Nunn's books, this is a worthy effort that will reward the reader's attention. It picks up where the great Secrets of Grandmaster Play left off, and will be particularly interesting to those who enjoy tactical play: Hübner once referred to Nunn as "the world's strongest coffeehouse player"!

Grandmaster Achievement, by Lyev Polugayevsky (translated and edited by Ken Neat), Cadogan, London, 1994, FAN, viii + 224 pp., paperback, \$19.95. (Revised edition of Grandmaster Preparation, originally published in 1981.) A substantial revision of a modern classic that should be in every serious chessplayer's library. Polugayevsky, several times USSR Champion and candidate for the world championship, is best known for his razor-sharp Polugayevsky Variation of the Sicilian

 b5!?), also known as the "Eighth Wonder of the World."

Henrique Mecking: Latin Chess Genius, by Stephen W. Gordon, Thinkers' Press, Davenport, IA, 1993, AN, vi + 182 pp., paperback. An overlooked player with a tragically interrupted career gets his due.

Wolff! by Patrick Wolff, R \& D Publishing, Hagerstown, MD, 1993, 62 pp., paperback, \$10.95. Our technical editor!

## Tournament Books

World Chess Championship Kasparov v Short, by Daniel King and Donald Trelford, Cadogan, London, 1993, FAN, 128 pp., paperback. A book on this match by British "insiders" that might have benefited from greater objectivity and better editing.

World Chess Championship Seville 1987, by Ken Neat, Cadogan, London, 1993, FAN, 128 pp., paperback. A quality, workmanlike addition to the Pergamon/Cadogan series on the recent world championship matches. It's nice to see a major publisher go back to document important events that happened more than a few months in the past.

Sicilian Love, by Lev Polugaevsky, Jeroen Piket, and Christophe Guéneau, New In Chess, Alkmaar, The Netherlands, 1995, FAN, 236 pp., hardcover, $\$ 35.00$. A delightful, beautifully produced record of a unique event: the 1994 super-tournament in Buenos Aires in which all games were stipulated to be open Si cilians. Also the only book we have seen that includes not just one, but two photos of Gata Kamsky with a tango dancer.

St. Petersburg 1914 International Chess Tournament, by Siegbert Tarrasch (translated by Robert Maxham, edited by Dale A. Brandreth), Caissa Editions, Yorklyn, DE, 1993, AN, viii +269 pp., hardcover. One of the greatest tournaments, and greatest tournament books, of all time. Tarrasch's annotations are instructive and entertaining; he also provides interesting background information about the players and the times. The book opens with three prefatory sections: an introduction by the president of the St. Petersburg Chess Club, describing the circumstances of the event's organization; a 20 -page section called "Voices of the Press" featuring contemporary news accounts; and Tarrasch's essay "The Progress of the Tournament." This high-quality book is both an important source for chess history and the best record of a thrilling chess event.

Hastings 1936/37 International Chess Tournament, edited by Dale Brandreth, Caissa Editions, Yorklyn, DE, 1992, DN/AN, iv + 55 pp. (oversized), paperback, \$9.00.

London 1893 Black and White Masters' Tournament, edited by Dale Brandreth (notes by Leopold Hoffer), Caissa Editions, Yorklyn, DE, 1992, DN/AN, iv +18 pp . (oversized), paperback, \$6.50.

North American Invitational Correspondence Chess Championship VI, by J. Ken MacDonald, Canadian Correspondence Chess Association, Etobicoke, ON, Canada, 1993, 47 pp. (oversized), paperback.

International Schaaktoernooi Groningen, December 1992, Stichting Schaak Groningen, Groningen, The Netherlands, 1993, AN, 164 pp., paperback (in Dutch).

## Endgames

Chess Endings: Essential Knowledge, by Yuri Averbakh (translated by P.H. Clarke), Cadogan, London, 1993, FAN, vi + 109 pp., paperback, $\$ 14.95$. (Third edition, originally published in 1966.) This classic has been reissued with figurine-algebraic notation and updates by the author. Players who master the material in this slim volume will not embarrass themselves in the endgame and may even enjoy it.

Pari Savam Laikmetam: Hermana Matisona Dailrade, by V. Kirilovs, Sahs, Riga, 1994, FAN, 64 pp., paperback (in Latvian). A book of Mattison's studies that we would love to see in English translation.

Practical Knight Endings, by Edmar Mednis, Chess Enterprises, Coraopolis, PA, 1993, AN, 188 pp., paperback, $\$ 12.95$. Endgame guru Mednis dispenses his usual excellent practical advice, on one of the most impractical types of endgames.

Rate Your Endgame, by Edmar Mednis and Colin Crouch, Cadogan, London, 1992, xii + 240 pp., paperback, $\$ 19.95$. One might think that Elo ratings based on competitive results would be a reliable enough indicator of chess strength. However,

## If you already

## think chess is a

hard game, buy
Nimzowitsch's
Chess Praxis and
reduce yourself
to utter
confusion.
books and magazine columns are continually produced that purport to reveal playing strength through prob-lem-solving or "finding the best move." The premise is silly, but the virtue is in making the reader work.

Secrets of Pawnless Endings, by John Nunn, Henry Holt, New York, 1994, FAN, 320 pp., paperback, $\$ 26.95$. Another profound exploration of endgame theory by Nunn, aided by the latest infallible computer findings. Everything of interest with-



Batsford Chess Endings, by Jon Speelman, Jon Tisdall, and Bob Wade, Henry Holt, New York, 1993, FAN, 448 pp., paperback, $\$ 30.00$. The minimal-text, encyclopedia format works much better with openings than with middlegames or endgames. Still, this is a good summary of current knowledge.

The Fruits from My Chess Garden: A Selection of Endgames, by W. Proskurowski, Chess Enterprises, Coraopolis, PA, 1993, AN, iv + 49 pp., paperback, \$6.00.

## Middlegame Theory

Pawn Structure Chess, by Andrew Soltis, David McKay Company, New York and Toronto, 1995, AN, 346 pp., paperback, \$14.00. (Revised edition; originally published in 1976.) An excellent manual when it first appeared, now even better.

Attack with Mikhail Tal, by Mikhail Tal and lakov Damsky (translated and edited by Ken Neat), Cadogan, London, 1994, FAN, viii + 184 pp., paperback, $\$ 19.95$. We think he did fine without any help, but anyone can benefit from studying his last work. If more great players would collaborate with professional teachers and writers, more great chess books might result.

The Art of Attack in Chess, by V. Vukovic (translated by A.F. Bottrall,
edited by P.H. Clarke), Cadogan, London, 1993, DN, xviii + 422 pp., paperback, $\$ 14.95$. (Originally published in 1965.) Every chessplayer should thoroughly study this classic.

Position and Pawn Tension in Chess, by David H. Levin, Syllogism Press, Matawan, NJ, 1993, AN, x + 118 pp., paperback, \$13.95.

Positional Sacrifices, by Neil McDonald, Cadogan, London, 1994, FAN, 128 pp., paperback, \$15.95.

## Tactical Exercises

Garry Kasparov's Chess Puzzle Book, by Garry Kasparov (translated and edited by Ken Neat), Cadogan, London, 1995, FAN, vi +90 pp., paperback, $\$ 12.95$. The title suggests a book for novices, but the book actually features well-annotated positions from recent international play, including Game 8 from the author's 1993 world title match against Short.

Chess Tactics Training, by Nikolai Shumilin, Andreyevsky Flag, Moscow, 1993, FAN, 176 pp., paperback, $\$ 9.00$ (in English, German, and Russian). A useful collection of positions for tactical drill, presented in the style of the Chess Informant middlegame books.

Better Chess, by A.J. Gillam, Chess Enterprises, Coraopolis, PA, 1993, FAN, 96 pp., paperback, \$5.00.

The Chess Tactician's Handbook, by John Grefe, Chess Enterprises, Coraopolis, PA, 1993, AN, 97 pp., paperback, \$6.95.

Combination Challenge! by Lou Hays and John Hall, Hays Publishing, Dallas, TX, 1991, AN, viii + 232 pp., paperback, \$14.95.

Chess Travellers Quiz Book, by Julian Hodgson, Cadogan, London, 1993, FAN, vi + 126 pp., paperback, \$14.95.

How Good Is Your Chess? by Daniel King, Cadogan, London,

1993, FAN, 128 pp., paperback, \$14.95.

Test Your Chess IQ: Grandmaster Challenge, by A. Livshitz (translated and edited by Ken Neat), Cadogan, London, 1993, FAN, viii + 134 pp., paperback. (Second edition, originally published in 1981.)

Saha Rieksti, by N. Zuravlevs, J. Klovans, and G. Kuzmicovs, Sahs Baltija, Riga, 1991, FAN, 128 pp., paperback (in Latvian and Russian).

## Openings

Schwarz ist Super ... in Sizilianisch Sweschnikow, by Andras Ador-jan and Thomas Horvath, Black is OK Books, Budapest, 1993, FAN, 160 pp., paperback (in German). GM Adorjan is famous for arguing that "Black is O.K." in various openings. Here Black is apparently doing even better. Sveshnikov players will easily be able to follow the figurine-algebraic notation, and if you can read German phrases like "Weiss gewinnt Material," you too will be O.K.

Accelerated Dragons, by John Donaldson and Jeremy Silman, Cadogan, London, 1993, FAN, viii + 227 pp., paperback, \$19.95. Donaldson and Silman are both fine chess writers, and they share a love for the Accelerated Dragon. This may be the definitive book on the opening. It has never been popular at the highest levels, perhaps because it invites White to play the feared Maroczy Bind. However, the authors show three ways for Black to combat the Bind and include full coverage of other lines. This is not a "Winning with" book, but an honest attempt to present a full picture of this opening system. The authors call the Accelerated Dragon "a perfect weapon for the Swiss-system warrior," while offering coverage deep enough to satisfy full-time professionals.

Benko Gambit! by Jon Edwards with contributions by John Fedorowicz, R \& D Publishing, Hagers-
town, MD, 1993, 76 pp., paperback, $\$ 10.95$. One in a series of "Power Play!" opening manuals, designed to be used with ChessBase's masterstrength playing program Fritz but perfectly adequate as standalone books. Not as comprehensive as traditional opening manuals (e.g., Fedorowicz's Benko Gambit treatise), these books teach openings by breaking them down into critical positions, including middlegames. Other titles received include The Sicilian! An Overview by Edwards with Henley, The King's Indian Attack! by Henley and Hodges, The Spanish Exchange! by Henley and Hodges, The Archangel!' A Defense Against the Ruy Lopez by Henley and Hodges, Center Counter! by Hodges with Fishbein, and The Dragon! A Sicilian Counterattack by Henley and Hodges. Interestingly, the latter two openings were introduced successfully in the recent Kasparov-Anand match.

Winning with the Spanish, by Anatoly Karpov, Henry Holt, New York, 1994, FAN, 176 pp., paperback, $\$ 16.95$. When Karpov writes an opening book, it is bound to be both self-justifying and essential.

Winning with the Hypermodern, by Raymond Keene and Eric Schiller, Henry Holt, New York, 1994, FAN, 189 pp., paperback, \$16.95. An oddly titled guide to several "hypermodern" openings and the players associated with them. Includes a general introduction to the hypermodern approach.

Mastering the Spanish with the Read and Play Method, by Daniel King and Pietro Ponzetto, Henry Holt, New York, 1994, FAN, 252 pp., paperback, $\$ 22.95$. The real formula for mastering the Spanish Game might be read and play, play, play, but this book, emphasizing characteristic pawn structures, strategic ideas, and tactical motifs illustrated by complete games rather than lists of variations, will start you off well.

## Donaldson and

Silman may have

## written the

definitive book on
the Accelerated
Dragon.

With all the opening monographs being published nowadays, it is hard to know whether you are looking at highquality, original analysis or just a database dump.

King's Indian Defense: Tactics, Ideas, Exercises, by Nikolay Minev, International Chess Enterprises, Seattle, WA, 1993, FAN, 106 pp., paperback, $\$ 12.95$. The popular Inside Chess columnist has produced an entertaining and practical monograph for players on both sides of the KID.
E.C.O. Busted! by Sid Pickard, Hays Publishing, Dallas, TX, 1993, AN, 240 pp., paperback, $\$ 21.00$. A compendium of corrections and updates. Very useful now that the Chess Informant organization is issuing single-variation monographs rather than revising the ECO volumes.

The Schliemann Defense, Volume 1: Tartakower Variation 5 ... Nf6, by Leonid Shamkovich and Eric Schiller, Chess Enterprises, Coraopolis, PA, 1993, AN, 125 pp., paperback, $\$ 9.95$. The first of a projected four-volume update of the same authors' excellent manual on the exciting Schliemann Defense.

Gambits in the Slav, by Jeremy Silman and John Donaldson, Chess Enterprises, Coraopolis, PA, 1993, iv + 159 pp., paperback, \$8.95. With all the opening monographs being published nowadays, it is hard to know whether you are looking at high-quality, original analysis or just a database dump. Silman and Donaldson have impeccable reputations and this book does nothing to diminish them.

Smith-Morra Declined: A Game Collection, by Ken Smith and Bill Wall, Chess Enterprises, Coraopolis, PA, 1993, AN, 120 pp., paperback, $\$ 7.95$. This companion volume to the same authors' Smith-Morra Gambit Accepted collection contains 400 game scores without notes. The ambitious student might want to write his own annotations to the games that interest him.

English Opening: Classical \& Indian, by Vladimir Bagirov (translated and edited by Ken Neat), Cadogan,

London, 1994, FAN, viii + 228 pp., paperback, $\$ 24.95$.

English Opening: Symmetrical, by Vladimir Bagirov (translated and edited by Ken Neat), Cadogan, London, 1995, FAN, viii + 216 pp., paperback, $\$ 24.95$.

The New St. George, by Michael Basman, Cadogan, London, 1993, FAN, viii + 170 pp., paperback, $\$ 19.95$. (Revised edition of Play the St. George, originally published in 1983.)

The Closed Spanish: Karpov/Zaitsev Systems, by Anatoly Bikhovsky, Henry Holt, New York, 1993, FAN, 141 pp., paperback, \$14.95.

The Nimzo Indian Defence, by Svetozar Gligoric, Cadogan, London, 1993, FAN, vi + 338 pp., paperback, $\$ 24.95$. (Second edition, originally published in 1985.)

Opening Systems for Competitive Chess Players, by John Hall, Hays Publishing, Dallas, TX, 1992, AN, 192 pp., paperback, \$13.99.

The Classical Caro-Kann, by Gary Kasparov and Aleksander Shakarov (translated by John Sugden, updated by Raymond Keene), Trafalgar Square, North Pomfret, VT, 1993, FAN, x + 166 pp., paperback, $\$ 24.95$. (Revised edition, originally published in 1984.)

The Modern Benoni, by David Norwood, Cadogan, London, 1994, FAN, 144 pp., paperback, \$19.95.

Nimzo-Indian Defence: Classical Variation, by Ivan Sokolov, Cadogan, London, 1995, FAN, viii + 148 pp., paperback, \$17.95.

A Fischer Favorite: The King's Indian Attack, by Eric Tangborn, International Chess Enterprises, Seattle, WA, 1992, AN, 32 pp . (oversized), paperback, $\$ 8.95$.

The New Bogo-Indian, by Shaun Taulbut, Cadogan, London, 1994, FAN, 188 pp., paperback, \$19.95.
(Revised edition of Play the BogoIndian, originally published in 1985.)

How to Defeat the Smith-Morra Gambit: 6 ... a6, by Timothy Taylor, Chess Enterprises, Coraopolis, PA, 1993, AN, 112 pp., paperback, \$8.95.

## Instruction

Learn Chess: A Complete Course, by C.H.O'D. Alexander and T.J. Beach, Cadogan, 1994, AN, xiv + 270 pp., paperback, $\$ 14.95$. (Originally published in 1963.) An oldie but goody.

The Genesis of Power Chess, by Leslie Ault, Thinkers' Press, Davenport, IA, 1993, AN, vi + 346 pp., paperback. An interesting collection of critical positions with questions posed for the reader. Somewhat marred by the answers being on the same pages as the questions.

Danger in Chess: How to Avoid Making Blunders, by Amatzia Avni, Cadogan, London, 1994, vi + 122 pp., paperback, $\$ 14.95$. Offers entertaining examples of superficial play, with advice on how to avoid it.

Chess Fundamentals, by José Capablanca, Cadogan, London, 1994, FAN, vi + 122 pp., paperback, $\$ 15.95$. (Originally published in 1921.) Capablanca, perhaps the greatest natural genius of chess, only wrote four books, of which this one and $A$ Primer of Chess (1935) have just been reissued in modern notation. If you read them all carefully, you may catch a glimmer of what made him unique.

What's the Best Move? by Larry Evans, Fireside / Simon \& Schuster, New York, 1995, DN, 186 pp., paperback, $\$ 12.00$. (Originally published in 1973.) Teaches basic openings by quiz format. One of the few Fireside chess books not written by Bruce Pandolfini.

Mastering Chess: A Course in 21 Lessons, by D. Kopec, G. Chandler,
C. Morrison, N. Davies, and I.D. Mullen, Cadogan, London, 1994, AN, xii + 135 pp., paperback, $\$ 14.95$. (Originally published in 1985.) One of the few instructional books that goes beyond simply discussing sample positions and offers specific methods of thinking (based on psychological research) and analyzing during the game. A truly original work.

Beginning Chess, by Bruce Pandolfini, Fireside / Simon \& Schuster, New York, 1993, AN, 271 pp., paperback, $\$ 12.00$. This and most of Fireside's recent chess books are by Bruce Pandolfini, the personable New York master and chess teacher who taught Josh Waitzkin and was portrayed by Ben Kingsley in the movie Searching for Bobby Fischer. These attractively produced volumes are meant for children and adult novices. The prolific Pandolfini seems to have a comfortable arrangement with Simon \& Schuster, but despite the bright covers and slick presentation, there is little depth. Pandolfini makes Fred Reinfeld-a didactic and often simplistic author popular with previous generations-look like a subtle and profound scholar of the game. However, you can't argue with his marketing muscle. A large American mail-order book club flogs Pandolfini's latest book by calling him "the international chess champion." Other titles received include More Chess Openings: Traps and Zaps 2 (1993), Square One: The Best Chess Drill Book for Beginners of All Ages (1994), Chess Target Practice: Battle Tactics for Every Square on the Board (1994), The Chess Doctor (1995), and Chess Thinking: The Visual Dictionary of Over 1,000 Moves, Rules, Strategies, and Concepts (1995).

Chess Training, by Nigel Povah, Cadogan, London, 1995, AN, 176 pp., paperback, \$17.95. Not enough books address practical questions of training. This one does, and is therefore valuable.

## IM Timothy <br> Taylor has

## written a

pornographic novel featuring a
"dashing chess
playing
motorcyclist." It
is not reviewed
anywhere else, to our knowledge.

Josh Waitzkin's Attacking Chess, by Josh Waitzkin with Fred Waitzkin, Fireside / Simon \& Schuster, New York, 1995, AN, 240 pp., paperback, $\$ 12.00$. An unusual book, part autobiography, part tactical quiz book, part inspirational advice for young players. An excellent first effort by the U.S. Junior Champion.

Chess Openings for Juniors, by J.N. Walker, Cadogan, London, 1995, AN, xiv + 154 pp., paperback, $\$ 14.95$. (Originally published in 1975.) Walker's books are rather British in tone, but present their material well. This well-written survey should be useful for all players rated below USCF Class A. Other titles received include the reprinted Test Your Chess: Piece Power (1980) and the new First Steps in Chess (1995).

Best Lessons of a Chess Coach, by Sunil Weeramantry and Ed Eusebi, McKay, New York, 1993, AN, xiv + 322 pp., paperback, \$14.00. The first book by a teacher of several masters, many scholastic championship teams, and hundreds of children, who has pioneered the inclusion of chess in school curricula. In a novel format, Weeramantry presents a selection of lessons he has actually given, compiled and edited from tape recordings.

Chess for Children, by Rosalyn B. Katz, Collins \& Brown / Cadogan, London, 1993, AN, iv + 92 pp., paperback.

Chess in the Classroom: A Complete Guide, by Rosalyn B. Katz, Executive Training Concepts, Mendham, NJ, 1992, FAN, vi + 217 pp. (oversized), paperback.

Easy Guide to Chess, by B.H. Wood, Cadogan, 1994, FAN, 156 pp., paperback, \$11.95. (Revised edition, originally published in 1942.)

## Fiction

The Chess Garden: The Twilight Letters of Gustav Uyterhoeven, by

Brooks Hansen (illustrations by Miles Hyman), Farrar, Straus and Giroux, New York, 1995, xii +483 pp., hardcover, \$23.00. A literary novel with a strong chess motif. It has received positive reviews in the mainstream press, including The New York Times.

Amanda, by Timothy Taylor, Blue Moon, New York, 1993, 144 pp., paperback, $\$ 5.95$. A pornographic novel by the international master featuring a "dashing chess playing motorcyclist" who marries the title character and cavorts amusingly with her and others; on the last page, he figures out how to beat Kasparov, but doesn't tell the reader. Not reviewed anywhere else, to our knowledge.

## Miscellaneous

Black is OK! Issue Zero, published by Andras Adorjan, Budapest, 1993. Billed as "a quarterly that fights against dogmas, superstition, and prejudices of all kinds," this periodical is idiosyncratic at every step, from the article titles ("A splendid torso ...," "The most welcome Yellow Danger") to the solicitations for advertisers: "This is the page where your advertisement could have been if we had met each other in time. What a pity we didn't!" It would also be a pity if no more issues were published. Were they?

How to Cheat at Chess, by William Hartston, Cadogan, London, 1994, DN, 96 pp., paperback, $\$ 9.95$. (Originally published in 1976.) This book and its illustrated, "uncensored sequel," Soft Pawn, are mildly amusing, but the humor often seems forced. Perhaps Hartston's manner loses something when it crosses the Atlantic.

Secrets of Spectacular Chess, by Jonathan Levitt and David Friedgood, Henry Holt, New York, 1995, FAN, 222 pp., paperback, $\$ 22.50$. A rare, original book on aesthetics in chess, concentrating on studies and prob-
lems but not ignoring practical play. The authors propose that beauty in chess is based on four principles: paradox, depth, geometry, and flow. Includes chapters on "Tactical Fantasies," "Art for Art's Sake," and "The Weird and the Wonderful," with exercises for the reader.

Life Maps of the Great Chess Masters, by Nathan Divinsky, International Chess Enterprises, Seattle, WA, 1994, vi + 314 pp. (oversized), hardcover, $\$ 46.95$. A compendium of game results (not scores) between most of the all-time greats, extending the database used for Divinsky's 1989 book (with Raymond Keene) Warriors of the Mind. Invaluable for collectors, historians, and those prone to arguing about statistics.

101 Questions on How to Play Chess, by Fred Wilson, Dover, New York, 1994, AN, ii + 78 pp., paperback, $\$ 1.00$. Worth every penny.

Chess and Machine Intuition, by George Atkinson, Ablex, Norwood, NJ, 1993, viii +175 pp., paperback, \$22.50 (hardcover, \$39.50).

1995 International Chess Calendar, Russell Enterprises, Milford, CT, 1994, FAN, \$8.95.

## Videotapes

Grandmaster Video Magazine 8, Grandmaster Video, Woking, United Kingdom, 1993, one videotape, running time 135 minutes. Includes an entertaining on-the-scene report by Cathy Forbes on the 1992 FischerSpassky match.

Kasparov-Short: The Inside Story (Grandmaster Video Magazine 9), Grandmaster Video, Woking, United Kingdom, 1993, two videotapes, running time 145 minutes.

## Software

King's Indian: Sämisch Variation, by Kick Langeweg, Interchess, Alkmaar, The Netherlands; in Nicbase, Nicconsult, and ChessBase formats (for

DOS); with book (in English, Dutch, and German), FAN, 106 pp., \$25.00. Each volume in this "Electronic Chessbook" series, using material from the vast New In Chess database, includes 500 games on diskette, 200 of them annotated, and a multilingual booklet with overviews and further annotations. If you haven't used a computer database to study chess before, this series is a great way to try it out. Other titles received include Sicilian: English Attack by Nikitin, French Defence: Advance Variation by Nikolic, The Budapest Gambit by van der Tak, and Slav Defence: Meran Variation by Kuijf.

M-Chess Professional 5.0 (for DOS), M Chess, San Rafael, CA. The 1995 world microcomputer champion by Marty Hirsch.

WChess (for DOS), IHP Inc., Mobile, AL. David Kittinger's chessplaying program scored $+4=2$ in 25 -minute games against grandmasters in the 1994 Harvard Cup. It can beat you, too.

HIARCS Master(for DOS), Applied Computer Concepts, Harlow, Essex, United Kingdom.

Monarch 1.0 Professional Chess Database System (for DOS), Strategic Concepts, Seattle, WA.

## Equipment

Chronos Digital Game Clock, DCI, Mountain View, CA. A superb clock for chess (and other games) at virtually any time control, including various types of increment and delay. Extremely sturdy metal construction with large buttons and displays. Highly recommended.

Quick Chess, Amerigames International, Glen Cove, NY. A chess variant designed for children. The board is $5 \times 6$ and each side has five pawns and one of each piece. Recommended by Laszlo Polgar, who has even published an entire book of problems and instructional material on the game.

## Secrets of

## Spectacular

Chess, by
Jonathan Levitt
and David
Friedgood, is a
rare, original
book on
aesthetics in
chess.

Items sent to American Chess Journal will be considered for review or listing in a future issue.

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## Robert Hübner analyzes the Immortal Game <br> Mark Dvoretsky on the endgame of CapablancaAlekhine, New York 1924 <br> A comprehensive review of chess rating systems <br> The chess fiction of Vladimir Nabokov <br> Lawson's End Game, Agur's Bobby Fischer: A Study of His Approach to Chess, and other books reviewed


[^0]:    Robert Hübner is a former world championship candidates' finalist and noted analyst whose latest book is entitled 55 Enormous Errors. He lives in Solingen, Germany. This is a translated revision of an article first published in German under the title "Abfall \#4" in ChessBase Magazine \#11 (May/7une 1989), and \#12 (7uly/August 1989). A second German version was published as "Die Unsterbliche Partie" in Schach Journal \#1-2 (1992), pp. 5-18. The biographical information on pp. 14-15 of this article was compiled by the editors.

[^1]:    1. Page numbers for Nabokov's major works refer to the Vintage paperback editions.
[^2]:    5. Key: 1 ©d8! waiting, after which Black is in zugzwang.
[^3]:    Mark E. Glickman is a USCF master and chairman of the USCF Ratings Committee. He received his Ph.D. in Statistics from Harvard University. He is Assistant Professor of Mathematics at Boston University, and lives in Cambridge, MA. The author thanks Chris Avery, Andrew Metrick, Ken Sloan, and Alan Losoff for their assistance in the preparation of this article.

[^4]:    2. This figure was provided by Alan Oakes, Director of Member Services at the ACBL.
[^5]:    3. A good overview of statistical modeling and analysis of paired comparison data can be found in Herbert David's The Method of Paired Comparisons (Oxford University Press, 1988).
    4. The Rating of Chessplayers, Past and Present (Arco, 1978).
    5. "Die Berechnung der Turnier-Ergebnisse als ein Maximumproblem der Wahrscheinlichkeitsrechnung," Mathematische Zeitschrifi 29 (1929), 436-460.
    6. "On the marking of chess players," Mathematical Gazette 39 (1955), 292-296.
    7. "The rank analysis of incomplete block designs. 1. The method of paired comparisons," Biometrika 39 (1952), 324-45.
[^6]:    8. "A law of comparative judgment," Psychological Review 34 (1927), 273-286.
[^7]:    19. The $95 \%$ margin of error is an estimate of the error in using the sample average to approximate the true (population) average. In particular, $95 \%$ of new samples would have the true average within the given range. Shorter segments indicate, to some extent, larger samples.
[^8]:    21. A good non-technical introduction to the concept of shrinkage can be found in Bradley Efron and Carl Morris, "Stein's Paradox in statistics," Scientific American, May 1977.
[^9]:    25. The lowest rating a player can earn in the current USCF rating system is 0 .
    26. For example, the article "Ratings-Some questions answered" by Gerry Dullea in the December 1979 issue of Chess Life dr Review made such a mistake.
[^10]:    27. The term "variance" has a specific technical meaning in statistical language, and is not used properly by the PCA system. The most obvious disparity in definitions is that a true variance is measured on a scale of squared units, whereas the PCA "variance" is measured on the same units as the rating.
[^11]:    28. The PCA algorithm does, however, incorporate the advantage due to playing White. This subject is discussed in a later section.
    29. The Elo updating formula is effectively a linear approximation to exponential weighting. This is different from linear weighting, however.
[^12]:    30. The highest attained rating for every player only began to be recorded after the inception of the rating floors.
    31. This practice is usually called "sandbagging."
[^13]:    34. The Mathematics of Games (Oxford University Press, 1989), 60.
[^14]:    35. As of 1994, the SAT was no longer designed to connect scores to the past in this manner. Instead, it now determines scores that correspond to percentiles of the current population taking the exam.
[^15]:    36. See Section 8.93 of The Ratings of Chessplayers, Past and Present.
[^16]:    37. The PCA determined this value by finding the average score for White in a database of over 100,000 games. Their analysis, however, did not take the players' strengths into account, so it is likely that the true advantage of playing White is less than 32 points.
    38. "On extending the Bradley-Terry model to incorporate within-pair order effects," Biometrics 33, 693-702.
    39. See Section 8.91 of The Rating of Chessplayers, Past and Present.
    40. "Ties in paired-comparison experiments: A generalization of the Bradley-Terry model," Journal of the American Statistical Association 62, 194-204.
[^17]:    42. The details of the calculations are found in "An extension of the Elo rating system," an unpublished paper by the author.
[^18]:    famie Hamilton is a USCF Master who lives in Washington, DC. His review of Knight Moves appeared in AC7 \#1.

[^19]:    Burt Hochberg is a Senior Editor of Games magazine and a former Editor in Chief of Chess Life. His memoir of creating bis most recent book, The 64-Square Looking Glass, appeared in AC7 \#2. He lives in New York City.

[^20]:    Fred Wilson is a dealer in chess books and equipment in New York City. He reviewed The Oxford Companion to Chess, Second Edition, in AC7 \#1. His most recent book is 101 Questions on How to Play Chess.

[^21]:    Alex Dunne is a rare USCF "double master"-of both over-the-board and postal chess-who writes the Chess Life correspondence chess column, "The Check is in the Mail." He lives in Pennsylvania.

