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**Gens una sumus?! –
Or Does Political Ideology Affect Experts' Aesthetic Judgment of
Chess Games?[±]**

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Abstract

This paper presents evidence on biased voting by jurors from the Warsaw Pact countries who ranked high-level chess games. The roots of this bias are probably ideological, as there were no formal benefits for biased voting. Furthermore, this bias is observed only for jurors from Eastern countries, not for those from the West (NATO), and most interestingly, it disappears after the collapse of the Warsaw pact in 1989.

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1. Introduction

Gens una sumus - We are one (chess) family! This slogan is used by the International Chess Federation (FIDE), with "we" referring to all chess players. However, during the Cold War, Soviet chess players behaved as if only other Soviets belonged to their family. Moul and Nye (2009) provide detailed evidence that Soviet chess players acted like a 'family' – or a cartel – between 1940 and 1978. When facing each other Soviet players strategically yielded results which reduced the chances of non-Soviet players, such as Bobby Fischer, winning the respective tournament.¹

Why did Soviet chess players behave in such a shameful way? Interpreting their results, Moul and Nye (2009) refer to "both formal and informal pressure on players to bend the rules" (p.20). There is hardly any doubt that Soviet chess functionaries were able to set incentives for Soviet players to maximize the chances of a countryman winning the tournament, which made it difficult for Soviet players not to collude. This argument stresses the effect of *external* influence, or restraints. Yet decisions are formed by both restraints and preferences. Hence the question arises whether players' preferences were also nationalistic, or, for example, anti-American. If so, 'group' preferences could be an alternative - or, more likely, complementary - explanation for the findings by Moul and Nye (2009).

In this paper, we use data on a certain type of chess players' decisions that were probably beyond the perception and control of Soviet chess politics, namely chess players' rankings of the most beautiful games recently played. Such information has been available since 1966, when the "Chess Informant" (or Šahovski Informator) was first released. The Chess Informant is a chess yearbook covering important games of world class grandmasters including game analyses and jury votes on the most beautiful chess game of recent months. Jurors are usually former world elite chess players who vote for the most beautiful game played in the last few months given a selection of games by current world elite players. Yet, neither players nor jury members benefit directly from collusive voting behavior as players participating in the best games do not receive any award and chess rankings are not affected. Moreover, while being highly recognized among amateur chess players the Chess Informant is rather unknown outside the chess community. Therefore, our framework allows an investigation whether or not collusive behavior exists in the absence of strategic or political incentives.

¹ Their evidence is most striking for 1950 to 1962, when the world champion's next challenger was determined in round robin tournaments, a mode that was thereafter ceased in favor of a knockout system less susceptible to collusion. But the practice of sparing each other with short draws in purely Soviet matches seems to have continued at least until 1978, the last year in Moul and Nye's (1978) data set.

We contribute to the literature on expert voting in two ways. First, we analyze to what extent bloc affiliation may impact a juror's voting behavior. In existing literature, bloc building of individuals according to similar political ideology has been investigated in public voting systems – such as the *Eurovision Song Contest* – but has hardly been analyzed in the context of expert voting. Moreover, biases in expert voting behavior are often associated with strategic incentives, for example in ice skating or ski jumping events. In our case, strategic incentives can largely be ruled out as stakes are low. Therefore, our approach adds to our knowledge on the extent of expert voting behavior biases in the absence of strategic incentives. Second, our sample comprises chess players and jurors mainly from either the Eastern Bloc (Warsaw Pact countries) or the Western Bloc (NATO countries), both for the Cold War period up to 1989 and for the years after the 'fall of the Iron Curtain'. This allows us to analyze whether biases, once created, are persistent and are still to be observed after the change of the ideological environment.

Our results suggest that during the Cold War period no systematic bias in votes from Western jurors is found while jurors from the Warsaw Pact countries systematically ranked games higher when the winner also came from the Warsaw Pact. Interestingly, this effect becomes insignificant in the period post 1989, indicating that the influence of political ideology disappeared when the political rivalry ended. Moreover, we observe that expatriates from the Soviet Union did *not* receive significantly lower scores – at first sight contradicting the aforementioned finding on political biases of Eastern jurors. We speculate that this puzzle might be explained with dual processing theory: jurors place unconsciously higher scores for “family members” while the conscious voting on expatriates is not systematically biased.

While there are hardly any studies on ideological effects in expert voting, section 2 selectively reviews previous studies on ideological effects in public opinion voting, bloc formation in expert voting, and incentives for strategic expert voting. Section 3 describes our data and empirical approach. Section 4 presents the results, discussed in section 5. Finally, section 6 concludes with a critical discussion on the implications of our findings.

2. Voting on beauty by the public and by experts: Previous studies

“Beauty lies in the eyes of the beholder”

(Margaret Wolfe Hungerford, 1878)

Any assessment of beauty - is (at least partly) subjective. Regardless of whether you consider beauty pageants, the choice of your favorite music band, or the appeal of works of art, the evaluation of quality or appeal strongly depends on personal taste. Yet, judging beauty is part of many competitions, and especially prominent in sports and arts. Jurors score points for aesthetics in performance in many sport disciplines such as ice skating, ski jumping, gymnastics, and dancing. Furthermore, in various song and beauty contests – e.g. the *Eurovision Song Contest* or the *Miss World Competition* – the winner is determined by voting procedures. In some of these contests the stakes are very high, as expert scoring decides on winners of world championships (e.g. in the case of ice skating) and lucrative contracts in the music or fashion industry. Thus, in view of the (sometimes) high stakes, voting procedures in some contests have long received the attention of economists and sociologists striving to understand voting behavior.

The literature on voting on beauty can roughly be divided into two strands, one dealing with public voting, the other with expert juries². In public voting procedures, all individuals – often restricted to a specific region or nation – are allowed to cast a vote and the outcome of the vote is determined by counting the votes. This type of voting is typical for casting shows, e.g. the *Eurovision Song Contest* or the *American Idol* show. An extant body of literature has investigated how public voting is affected by cultural or political proximity – which are often difficult to disentangle as similar culture is often associated with similar political ideology. The most prominent example, which has been studied extensively, is the *Eurovision Song Contest*.³ In this contest each member country of the European Broadcasting Union submits one singer or band who performs on live television against the other countries’ songs. After all the songs have been performed, the countries proceed by casting votes for the other

² Wijnberg (1995) provides a more fine-grained categorization, including both peer selection and expert selection as two types of voting procedures involving a jury. In peer selection, selectors and the selected are part of the same group, as e.g. peer review in scholarly literature. In the case of expert selection, the selectors are neither peers nor consumers of the contestants, but they have the power to shape selection by virtue of specialized knowledge and distinctive abilities (Wijnberg and Gemser, 2000). In the juries of the Chess Informant, the younger members are peers, while many of the older ones have a status of experts no longer involved in top level tournament chess.

³ The Contest has been broadcast every year since its inauguration in 1956 and is one of the longest-running television programs in the world. It is also one of the most-watched non-sporting events in the world, with audience figures having been quoted in recent years as anything between 100 million and 600 million internationally (Eurovision Broadcasting Union, 2012).

countries' songs by phone or text message; nations are not allowed to vote for their own song. At the end of the program, the song with the most points is declared the winner. As this contest offers the opportunity of analyzing preferences of, and for, nations in the absence of political contexts several studies build their analysis of collusive behavior on data drawn from this competition. By analyzing pooled data of voting outcome in the time period 1975 – 1992 a study by Yair (1995) identifies three voting blocs namely Western, Mediterranean and Northern Europe. A related study by Gatherer (2004, 2006) identifies two voting blocs regarding contests in the time period between 1975 – 2005, which were called ‘the Viking Empire’, comprising Scandinavian and Baltic countries and (somewhat misleadingly) ‘the Warsaw Pact’ comprising Russia, Romania and former Yugoslavia. The latter two studies indicate that success in the *Eurovision Song Contest* is indeed to a large extent dependent on bloc affiliation. In fact, the five highest numbers of scored points historically are received either by Scandinavian or former Soviet countries, supporting the aforementioned interpretation of Gatherer (2004).

Yet some studies challenge the view that bloc formation is the core driver influencing outcome of the *Eurovision Song Contest*. By applying network analysis techniques on voting data from 1992-2003 Fenn et al. (2006) provide evidence that ‘cliques’ exist. However, the latter study contradicts prior studies as such cliques cannot be explained by geographical, political or cultural proximity. Furthermore, a study by Ginsburgh and Noury (2008) implemented an index in their voting equations that allows controlling for song quality. When including this instrument it is detected that song quality as well as linguistic proximity influence voting behavior while political conflicts are less relevant. Yet the latter study focuses on potential negative effects of political conflicts rather than analyzing potential biases in favor of other countries with a similar political ideology.

The second stream of literature deals with voting procedures in which jurors are responsible for judging beauty (or skill level) with the help of their expertise, as for example in the case of ski jumping or ice skating. Despite the extant literature on potential effects of similar political ideology in public voting procedures, there is hardly any study focusing primarily on such potential effects in expert voting procedures. The typical difficulty that has to be overcome is that expert jurors may have incentives to cast biased votes in many cases. Utilizing information of winter sports scores and personal information from prior judges Zitzewitz (2006) provides evidence that expert jurors strategically rank countrymen higher. The latter study shows that ski jumping judges think that such voting behavior is fair in the sense that

they compensate for the nationalistic biases of other panel members, while figure skating judges appear to engage in vote trading and bloc judging. Furthermore, career concerns create incentives for judges to be nationally biased when national federations chose judges and to be fair when judges are chosen centrally.

It is difficult to find examples of expert voting where strategic behavior of jurors can be ruled out. We analyze the influence of political ideology and cultural proximity in voting on beauty of chess games – provided by an international chess yearbook. This evaluation of beauty in chess games neither yielded any specific prize (except for occasional sponsor gifts) to the winner, nor did the evaluated beauty of chess games have any impact in competitions. Thus, we argue that this data allows an investigation of cultural affect in the absence of any strategic incentives.

3. Data and Empirical Approach

3.1. Data

Our data analysis relies on beauty scores provided by the internationally distinguished yearbook called *Chess Informant* (or *Šahovski Informator* in original Serbian language), published in Belgrade, Serbia. Starting 1966, two issues were published per year until 1990, and since 1991 three issues per year are available. Each issue offers several hundred games or fragments of games from master play, many annotated by the players themselves. For two decades – prior to the emergence of computer databases – *Chess Informant* publications were a leading source of games and analysis for master level chess players (Winter, 1999). Yet, even after the increasing relevance of computer programs, the *Chess Informant* is still the leading published chess periodical.⁴

For each volume of the *Chess Informant*, a jury of leading players selects the best games, and these are published again in the next issue often with more extensive annotations.⁵ When the best games were reprinted in the next issue a table denoting the scoring of the judges is also given, such that the distribution of points is unfolded. One sample table of *Chess Informant* 3 is given in Figure 1. Such a *Chess Informant* table includes rich information, comprising

⁴ In order to overcome language barriers the Chess Informant uses codes for the classification of chess openings, and a system of symbols for organizing chess information and communicating this information across the chess community. Nowadays, this Chess Informant system has set the international standard in chess annotations. One of many examples for chess books using Chess Informant annotations is the Encyclopedia of Chess Openings, see e.g. Karpov et al. (1998).

⁵ In some cases, especially in the 1980's and 1990's the winner of the best game is rewarded a 1,000 dollar prize when the Chess Informant was able to find a sponsor. Currently, as in the beginning, winners do not receive any pecuniary reward for their win.

several aspects. The column heads are the jurors' names and the rows list the top ten games. Hence one row reports all the scores given to one particular game, while one column reveals one juror's preferences over the top ten games. In the example given in Table 1 eight jurors ranked the games in this issue; in the first column you see the votes of juror Bozidar Đurašević, while the last row presents the votes of juror Robert Wade. In most years, the jurors were given a selection of 30 games. They award 10 points to – in their opinion – the most beautiful game, 9 points to the second most beautiful game, etc. The game a juror ranks as the tenth most beautiful game receives 1 point, the remaining games do not receive any points. The missing values in the table denote that a juror did not give any points to this game, meaning that he or she did not find that this game belongs to the best ten games in the selection. Games that are voted into the "top ten" of the most beautiful games are listed, starting from the highest rated game to the tenth-placed game. In this example the game of Bent Larsen against Bobby Fischer was voted as the most beautiful game. It received 3 points from Bozidar Đurašević, 7 points from Svetozar Gligorić, and so forth. In total, the game received 54 points. Larsen is named first, which denotes that he was the White player, and Fischer's name is printed in bold letters which implies that he won the game.

Table 1: Sample table from Chess Informant 3, as reported in Šahovski Informator (2008)

	BO. ĐURAŠEVIĆ	GLIGORIĆ	KROGIUS	L. PORTISCH	SUETIN	TAIMANOV	W. UNZICKER	WADE	
1. BE. LARSEN - FISCHER	3	7	9	10	5	9	6	5	54
2. SPASSKY - GHITESCU	10	9	5	1	6	8	10	1	50
3. KORCHNOI - UDOVČIĆ	9	3	3	3	-	7	7	10	44
4. BOLESLAVSKY - DZINDZICHASHVILI	8	8	2	2	10	-	4	-	38
5. KERES - L. PORTISCH	4	-	10	10	8	-	5	-	36
6. L. PORTISCH - PETROSIAN	1	5	4	4	2	-	3	8	31
7. TAL - MI. FILIP	6	-	1	1	-	10	-	9	26
8. PETROSIAN - GLIGORIĆ	-	4	7	7	-	3	-	7	21
9. KAVALEK - PIETZSCH	5	-	-	-	-	5	9	-	19
10. PETROSIAN - F. GHEORGHUI	-	6	6	6	7	-	-	-	19

Though not visible in the table the ELO ratings of the chess players are given in the annotation of the games. Arpad Elo created the so-called ELO rating system which denotes the strength of a chess player. World elite players have ELO ratings between 2700-2800

points, average Grandmasters are rated between 2500 and 2600 points while beginners have a rating of approximately 800 points (see Elo, 1978).

For a total of 1,000 chess games, we know how the juries ranked them in comparison to nine other "top ten" games. One observation in our data set is one score given by one juror to one game. Thus, the number of observations per *Chess Informant* is the number of games listed – which is ten – multiplied by the number of jurors. In one issue, the jury had 7 members, in three issues 10 members, in 17 issues 8 members, and most of the time, in 79 issues, 9 members. Taking all *Chess Informants* from its release date in 1966 until 2007 into account we have 85 different jurors. Note that each juror sends his or her votes to the editor of the Chess Informant independently.

In total, these are 8,840 evaluations of games. However, the number of observations in our analysis is actually a little lower, as we exclude 29 drawn games (259 observations of juror scores), 7 correspondence games (63 observations of juror scores), and 17 games in which the players' ELO rating was not yet officially reported and too little information was given on players to calculate historical ratings⁶. Hence our analysis is based on 947 games with 8,377 observations of juror scores.

3.2. Variables of Interest

With the help of our primary data source, the juries' top ten tables from 1966 to 2007 as reported in Šahovski Informator (2008), we are able to generate several variables of interest. Variables of interest relate to attributes of the jurors, the players, as well as correlation of voting scores. As we are interested in voting bloc formation we divide the nationality of players and jurors in our sample into three blocs. Of course, there are many possibilities to do that, in this paper we report on the results of two. Table 2 shows how bloc affiliations are assigned.

⁶ The ELO rating system was introduced in 1960 by Arpad Elo, but it was not used officially by the World Chess Federation until 1970. For games played earlier than 1970 we used backward calculations of ELO ratings as given by Sonas (2012).

Table 2: Bloc Affiliations

“Warsaw” Bloc		“NATO” Bloc	Others	
Soviet Union: Armenia Azerbaijan Belarus Estonia Georgia Kazakhstan Latvia Lithuania Moldova Russia Turkmenistan Ukraine	Bulgaria Czechoslovakia (including, in later observations, the Czech Republic and Slovakia) GDR Hungary Poland Romania	Belgium Denmark France Germany Greece Iceland Italy Netherlands Norway Portugal Spain Turkey United Kingdom USA	Argentina Australia Austria Brazil Chile Colombia Costa Rica Finland Israel New Zealand Peru Philippines Sweden Switzerland	Yugoslavia: ⁷ Bosnia and Herzegovina Croatia Macedonia Montenegro Serbia Slovenia China Cuba India Iran Mongolia Palestine

Bold: Jurors *and* players from this country are represented in the sample (others: players only from this country)

In the following we list the composition of the dependent variables and the set of explanatory variables used.

Dependent Variables:

- *Juror Score:* This variable captures the number of points a juror i rewards to game j . Given our example table in Figure 1, the juror Suetin, for example, ranks the game of Bent Larsen against Fischer as the sixth most beautiful game indicated by a score of 5, while Lajor Portisch ranks the same game as the most beautiful game indicated by 10 points that he awards to the game.
- *Ten points:* This binary variable captures whether a game receives a score of 10 points from the respective juror.

Explanatory Variables:

- *Winner Warsaw Pact country:* This binary variable takes the value 1 if the winner belongs to a (former) Warsaw Pact country.
- *Winner NATO country:* This binary variable takes the value 1 if the winner belongs to a NATO country.

⁷ We do not have any jurors or players from Kosovo or Vojvodina in our sample, hence we did not need to assign these countries to any bloc.

- *Juror Warsaw Pact & Winner Warsaw Pact*: This variable measures whether both the juror and the winner of the game stem from countries belonging to the Warsaw Pact.
- *Juror NATO country & Winner NATO country*: This variable measures whether both the juror and the winner of the game stem from countries belonging to the NATO.
- *Winner Expatriate*: This variable takes the value 1 if the winner of the game is an expatriate from the former Soviet Union to a Western country (in fact there are only two examples of expatriates winning games in our sample, namely Boris Spassky and Viktor Korchnoi), given that the game was played after the emigration.
- *Winner Expatriate and Juror Warsaw Pact country*: This variable takes the value 1 if $Winner\ Expatriate = 1$ and the juror is from a Warsaw Pact country.
- *Average score of other jurors*: This variable captures the average score given by other jurors, which is computed by $\frac{1}{N-1} \sum_{k=1, k \neq i}^N VOTE_{kj}$ where N denotes the number of jurors.
- *Elo Rating Winner*: This variable is continuous and denotes the Elo-rating of the winning player.
- *Elo Rating Loser*: This variable is continuous and denotes the Elo-rating of the losing player.
- *Winner is world champion*: This variable is binary and takes a value of 1 if the winning player in game j was a former or current world champion at the time the game was played.
- *Loser is world champion*: This variable is binary and takes a value of 1 if the losing player in game j was a former or current world champion at the time the game was played.
- *Juror is Winner*: This variable takes a value of 1 if the juror is the winning player and 0 if not.
- *Juror is Loser*: This variable takes a value of 1 if the juror is the losing player and 0 if not.

With the help of this set of variables we analyze to what extent bloc affiliations influence voting behavior. In doing so, we include controls for the quality of the game. Note that the

Chess Informant usually chooses neutral jurors. Yet jurors had to score games they won or lost in 27 and 29 cases, respectively.

3.3. Empirical Approach

Our data set includes information on juror scores, with each juror having ranked games in a specific order. Thus, while our data captures more information than simply knowing what alternative is most preferred, different observations are not independent of each other as, e.g., the highest score of ten points can only be given once. We take account of the nature of the data when we investigate whether ranked outcomes are systematically biased by bloc affiliation of juror and winner. When comparing means, we use the Wilcoxon signed rank test and the Mann-Whitney-U-test, both of which are non-parametric techniques which account for ordinaly ranked data. In the econometric analysis we apply rank ordered logistic regressions, which is a generalization of the conditional logit model for ranked outcomes (see e.g. Allison and Christakis, 1994; Long and Freese, 2006). Like the conditional logit model, the rank ordered logistic regression can be used with case-specific explanatory variables and alternative-specific explanatory variables. Both types of variables are included in our analysis, since the scores of jurors are dependent on the alternative games in their choice set and – potentially – on the playing ability or world champion status of the players in the respective game (case).

Rank ordered logistic regression

The rank ordered logistic analyzes the ranking of alternatives as a sequence of choices. In our case a score of 10 indicates that a game is the first choice. Consider a juror decision on his or her given set of games: the juror is given alternative games and ranks the alternatives according to his or her preferences. Dropping juror subscripts, let s_j indicate the score that the juror awards to game j . Hence $s_j = 10$ if the respective game is the most beautiful one in the juror's opinion. The probability that the juror assigns the highest number of points to game 1 is written as $\Pr(s_1=10|\mathbf{X})$, where \mathbf{X} is the set of explanatory variables. The probability of the second choice is conditional on the first choice and the explanatory variables, which can be denoted as $\Pr(s_2=9|\mathbf{X}, s_1=10)$. In our example this is the probability for game 2 to receive the second highest score, given that 10 points have been already awarded to the first game, and given the explanatory variables of game 2. Extending this logic each possible ranking's probability can be computed. For example, if we are interested in the probability that b , c and

d are the scores of games 1, 2 and 3, respectively, this probability is computed in the following way:

$$\Pr(s_1 = b, s_2 = c, s_3 = d|X) = \Pr(s_1 = b|X) * \Pr(s_2 = c|X, s_1 = b) * \Pr(s_3 = d|X, s_1 = b, s_2 = c)$$

Conditional Logistic Regression

The rank ordered logistic regression analysis is essentially an extension of the conditional logistic regression model for binary outcomes. By using the reduced information whether a game received ten points or not, we also investigate whether our explanatory variables have an impact of a juror awarding the respective game the highest score, declaring it as the most beautiful game. In doing so, we apply the conditional logistic regression which accounts for the choice set given. The conditional logistic regression on the likelihood of a game receiving ten points is again dependent on the characteristics of the game played and the characteristics of the alternative games in the choice set. Formally, the conditional logistic regression estimates a model with the basic probability function:

$$\Pr(s_j = 10|X) = \frac{\exp(x' \beta_{10})}{\sum_{j=0}^{10} \exp(x' \beta_j)}$$

4. Results

4.1. Descriptive Statistics

In Table 3 we examine whether juror origin has an impact on his (or her) score. We distinguish between scores given by jurors from Warsaw Pact countries and those by jurors from a NATO country. Differences in scores are reported for games with Warsaw Pact winners, winners from NATO country and winners from other countries. This comparison is done separately for the years before and after the fall of the Iron Curtain.

Table 3: Average scores given by jurors in dependence on winner origin

	Winner from...					
	Warsaw Pact		NATO country		Other	
	< 1990	≥ 1990	< 1990	≥ 1990	< 1990	≥ 1990
Juror from Warsaw Pact	4.61	4.11	3.63	3.97	3.75	4.15
Juror from NATO country	4.18	4.25	4.19	4.03	3.74	4.39
N (games)	280	310	107	84	66	100
p-value ^a	0.00***	0.47	0.03**	0.73	0.99	0.50

^a: Wilcoxon signed-rank test

***= 1% level of significance, **= 5% level of significance

Table 3 shows that games won by players from Warsaw Pact countries were rated significantly higher by jurors from the same bloc than by jurors from NATO countries. Vice versa, a similar result is obtained for games won by players from NATO countries. When solely regarding the results of the analysis in the cold-war period we would have been unable to discriminate between a number of possible reasons behind this finding. Jurors might show regional preferences, or preferences for some kind of "chess school". Yet these mechanisms do not help to explain our finding that differences in voting between Eastern and Western jurors become negligible after 1990. Note that chess players develop their personal playing style as teenagers, hence even if possible boundaries between regional chess schools should have disappeared after 1990, the immediate effects on the top ten games should be minimal. Hence we are left with an explanation that focuses on jurors rather than players: Our first piece of evidence tentatively suggests that political ideology did affect the voting outcome; in section 4.2 we will check whether this can be replicated with multivariate methods.

As noted above, the group of jurors and players are not necessarily completely disjoint. The extent to which scores can be subjective is nicely illustrated with the (rare) cases in which a juror is involved in one of the games that are to be judged. If the juror is the loser, he typically does not like the game. For example, the game Gelfand - Shirov, won by Gelfand, received 10

points from seven jurors, 9 points from one juror and 0 points from Shirov in Informator 73. On average, losers gave a score of 2.34, compared to everyone else's score of 4.17 (table 4).⁸

Table 4: The bias of jurors who lost the game

Juror is...	N (scores)	Average - Score	p (Comparison with games without juror involvement) ^a
Loser of the game	29	2.34	0.0065
Not involved	8322	4.17 ^b	
Winner of the game	26	4.57	0.60

^a: Mann-Whitney-U-test

^b: The main reason why this is not equal to the average over the possible scores $\{1, 2, \dots, 10\}$, which would be 5.5, is that jurors gave scores for 30 games, while we only have each juror's scores for those 10 games with the highest sum of scores

4.2. Estimation Results

Since the coefficients of the rank ordered logistic regression are difficult to interpret, we also report the odd ratios, which have a more straightforward interpretation. Like in conditional logit or multinomial logit models, the odd ratios indicate the percentage change in the odds of ranking a particular alternative ahead of the base category for a unit change in the standard deviation of an explanatory variable, holding all other variables constant. As the explanatory variables we use the variables introduced in section 3.2. In Table 5 we report the coefficients and odd ratios of the rank ordered logistic regression. This is done separately for the time periods prior to 1990 and subsequent to 1990. Furthermore, we report a basic model which only includes our main variables of interest, namely bloc affiliation and scores for the expatriate players Korchnoi and Spassky, whereas the full model includes all explanatory variables. Models (1) and (2) represent the basic and full model, respectively, for the time period until 1990. Correspondingly, the basic and full model for the time period after 1990 are presented in models (3) and (4), respectively.

The results suggest that biased voting behavior was especially present during the Cold War when the likelihood that a game was ranked ahead of a given alternative was 37.3% higher when both juror and the winning player came from a country belonging to the Warsaw Pact,

⁸ A chivalrous exception, as a juror who lost the game that is to be judged, is Korchnoi, who gave 9 points to a game that he lost against Almasi, while six jurors awarded 0 points to this game.

holding all other variables constant. This effect is significant at the 1 percent level. Aside from average score of other jurors and self-participation of jurors, this variable is the only significant one.⁹ Interestingly, this effect disappears after the end of the Cold War when the effect of both player and juror coming from a Warsaw Pact country becomes insignificant. It can also be noted that juror and winning player from the NATO does not have any significant effect on ranking the games, neither pre- nor post-1990. Moreover, it is noteworthy that jurors from Warsaw Pact countries do not rate games won by expatriate players – having emigrated from the Soviet Union – significantly different from games won by players of countries outside the Eastern bloc.

Table 6 reports the results for the conditional logistic regression analysis on the likelihood that a juror awards the highest score, namely ten points, for a game. As in Table 5, we report four models, comprising basic and full models for both time periods prior to and after 1990. (The number of observations are reduced as in 70 cases a juror awarded ten points to a game which is not included in the top ten of games. Thus, the analysis is now based on 879 games with 7744 juror scores given.)

The results confirm the rank ordered logistic regression analysis results as we see that hardly any variable has a significant effect on the likelihood of scoring 10 points. The average score of other jurors has a moderate impact. Yet, during the Cold War jurors from Warsaw Pact countries award the maximum score of 10 points significantly more often when the winner is also from the Warsaw Pact.

⁹ As far as variables such as winners' Elo ratings do have an impact on the judgments, they seem to be sufficiently captured by other jurors' evaluations.

Table 5: Rank ordered logistic regression of jurors' scores of beauty in chess informants' chess games

	Pre 1990				Post 1989			
	(1)		(2)		(3)		(4)	
	Coef.	Odd Ratio	Coef.	Odd Ratio	Coef.	Odd Ratio	Coef.	Odd Ratio
Winner Warsaw Pact country	0.069 (0.081)	7.2	-0.114 (0.086)	-10.8	-0.022 (0.056)	-2.2	-0.017 (0.056)	-1.6
Winner Warsaw Pact country & Juror Warsaw Pact country	0.261*** (0.106)	29.8	0.316*** (0.108)	37.3	-0.016 (0.111)	-1.5	0.001 (0.115)	0.4
Winner NATO country	0.040 (0.079)	4.1	-0.003 (0.082)	-0.4	-0.029 (0.077)	-2.9	0.019 (0.082)	2.0
Winner NATO country & Juror NATO country	0.044 (0.115)	4.5	0.043 (0.122)	4.5	-0.049 (0.106)	-4.8	-0.064 (0.110)	-6.3
Winner Expatriate	-0.120 (0.160)	-11.3	-0.217 (0.173)	-23.8	-0.381 (0.407)	-31.7	-0.087 (0.407)	-8.4
Winner Expatriate & Juror Warsaw Pact country	0.307 (0.238)	36.0	0.286 (0.259)	33.2	0.190 (0.639)	21.0	-0.061 (0.709)	-6.0
Average Score of other jurors			0.152*** (0.014)	16.4			0.171*** (0.013)	18.8
Elo Rating Winner			0.001 (0.000)	0.0			0.000 (0.000)	0.0
Elo Rating Loser			0.001 (0.001)	0.1			0.000 (0.000)	0.1
Winner is (former or current) world champion			0.063 (0.060)	6.6			-0.092 (0.065)	-8.8
Loser is (former or current) world champion			0.046 (0.079)	4.8			0.064 (0.089)	6.6
Juror is Winner			0.549 (0.400)	73.1			-0.030 (0.313)	-3.0
Juror is Loser			-0.861* (0.466)	-57.8			-0.732** (0.384)	-51.9
Wald χ^2	24.2***		182.7***		1.8		220.2***	
N (juror scores)	3929		3929		4448		4448	
N (games)	443		443		504		504	

(Robust standard errors in parentheses, the asterisks *, **, *** denote significance at the 10% level, 5% level and 1% level, respectively)

Table 6: Conditional logit estimation of the likelihood of scoring ten points

	Pre 1990				Post 1989			
	(1)		(2)		(3)		(4)	
	Coef.	Odd Ratio	Coef.	Odd Ratio	Coef.	Odd Ratio	Coef.	Odd Ratio
Winner Warsaw Pact country	0.416 (0.228)	51.7	-0.184 (0.257)	-16.8	0.037 (0.151)	3.7	0.033 (0.154)	3.4
Winner Warsaw Pact country & Juror Warsaw Pact country	0.680** (0.284)	97.3	0.794*** (0.294)	121.3	0.261 (0.283)	29.8	0.187 (0.288)	20.6
Winner NATO country	0.317 (0.241)	37.2	0.171 (0.261)	18.7	-0.062 (0.210)	-6.0	0.059 (0.227)	6.1
Winner NATO country & Juror NATO country	-0.231 (0.329)	-20.6	-0.202 (0.347)	-18.3	-0.713* (0.329)	-51.0	-0.765** (0.349)	-53.4
Winner Expatriate	0.501 (0.379)	65.2	0.115 (0.396)	12.2	-	-	-	-
Winner Expatriate & Juror Warsaw Pact country	0.126 (0.597)	13.5	0.141 (0.644)	15.1	-	-	-	-
Average Score of other jurors			0.340*** (0.029)	40.6			0.357*** (0.029)	42.9
Elo Rating Winner			0.001 (0.001)	0.1			0.000 (0.000)	0.0
Elo Rating Loser			0.000 (0.000)	0.1			0.002 (0.001)	0.2
Winner is (former or current) world champion			0.145 (0.145)	15.6			0.052 (0.145)	5.4
Loser is (former or current) world champion			0.159 (0.164)	17.2			-0.202 (0.209)	-18.3
Pseudo R ²	0.018		0.134		0.008		0.133	
Wald χ^2	29.4***		226.9***		2618***		2318**	
N	3677		3677		4067		4067	

(Robust standard errors in parentheses, the asterisks *, **, *** denote significance at the 10% level, 5% level and 1% level, respectively)

5. Discussion

Recent research has shown that the way chess players play their games reflects their preferences, be it time preferences (Gränsmark, 2012) or risk preferences (Gerdes and Gränsmark, 2010). Furthermore, these preferences can be shaped by game-specific attributes. Dreber, Gerdes and Gränsmark (2010) show that the risks taken by male experts against women are not constant. Rather, they increase significantly with the opponents' attractiveness. Given these findings, it is highly plausible, *ex ante*, that preferences should also determine the perceived beauty of chess games. In this study we address the research question whether 'bloc association' affects jurors preferences on the aesthetics of chess games played by other players (or in rare cases themselves). To be more precise, we aim to answer two research questions: First, do political affiliations play a role in judgment of beauty in chess games? And second, did communist propaganda (or chess politics) contribute to forming these preferences?

To answer to the first question we must differentiate between two opposing blocs . For jurors from Warsaw Pact countries the evidence indicates that they preferred games won by players of their own bloc. Yet, a similar effect is not detected for the Western bloc comprising NATO countries as jurors from NATO countries do not judge games won by players of their bloc significantly higher. Taken exclusively, one could imagine a number of possible reasons for this bias. However, as the bias is found only for the time of the Cold War, the evidence very likely does neither indicate cultural or geographical preferences nor playing school effects, but rather results from political propaganda. It is important to recall that in the Soviet Union (and, to a lesser extent, in Eastern European countries), chess was of special importance during the Cold War. Leading chess players were highly reputable and it was seen as an opportunity to crown their (intellectual) glory when a "family member" holds the world champion title. Former world champion Anatoli Karpov is quoted saying that "there was no line between chess and politics" (Soltis, 2000, p.2). There are two main reasons for this phenomenon. First, chess suits authoritarian regimes well, as it directs intellectual energy into an unpolitical area (Soltis, 2000, p. 2, p. 25). Second, it is very suitable for propaganda: It was possible to claim that the supremacy of "the Soviet chess school" was a Communist supremacy. (Arguably Soviet masters were wise enough to be eclectic; according to Johnson, 2007, p.77, they "incorporated the best ideas wherever they were to be found." However, as chess is a subtle and complex game, this was not at all obvious to the public.)

From the governments' perspective, the behavior of Eastern bloc jurors must be called a success - not although, but precisely because the voting on the beauty of chess games was beyond the attention of official chess politics. If authoritarian regimes want to last longer, they cannot only rely on command and control, they also need to win their subjects' hearts. Strategic behavior in Cold War chess tournaments, as detected by Moul and Nye (2009), could be enforced by the Soviet government, even against the will of the players who had to participate. We find that the Soviet regime also had an impact on behavior that was not directly monitored and incentivized - i.e., voting on the beauty of chess games. One might either find this result frightening, or one might find it reassuring that the impact on (jurors') preferences ceased to exist when the Iron Curtain fell.

References

- Dreber, Anna, Christer Gerdes and Patrik Gränsmark (2010), Beauty Queens and Battling Knights: Risk Taking and Attractiveness in Chess, IZA Discussion Paper No. 5314.
- Elo, A.E. (1978): *The rating of chessplayers*, past and present. Arco, New York.
- Eurovision Broadcasting Union (2012): “The History of the Eurovision Song Contest”, http://www.ebu.ch/en/eurovisiontv/entertainment/eurovision_song_contest.php.
- Fenn, D., Suleman, O., Efstathiou, J. and N.F. Johnson (2006): “How does Europe *Make Its Mind Up*? Connections, cliques, and compatibility between countries in the Eurovision Song Contest”, *Physica A: Statistical Mechanics and Its Applications* 2, 576-598.
- Gatherer, D. (2004): “Birth of a Meme: the Origin and Evolution of Collusive Voting Patterns in the Eurovision Song Contest”, *Journal of Memetics—Evolutionary Models of Information Transmission* 8, unnumbered.
- Gatherer, D. (2006): “Comparison of Eurovision Song Contest simulation with actual results reveals shifting patterns of collusive voting alliances”, *Journal of Artificial Societies and Social Simulation* 9(2), unnumbered.
- Gerdes, Christer and Patrik Gränsmark (2010), Strategic behavior across gender: A comparison of female and male expert chess players, *Labour Economics* 17, 766-775.
- Ginsburgh, V. and A.G. Noury (2008): “The Eurovision Song Contest. Is voting political or cultural?”, *European Journal of Political Economy* 24, 41-52.
- Gränsmark, Patrik (2012), Masters of our time: Impatience and self-control in high-level chess games, *Journal of Economic Behavior and Organization* 82, 179–191
- Hungerford, Margaret Wolfe (1878): *Molly Bawn*, London: Smith, Elder.
- Johnson, Daniel (2007), *White King and Red Queen*, London: Atlantic Books.
- Karpov, A., Balashov, Y. and V. Chekov (1998): *Encyclopedia Modern Chess Openings: Sicilian Defence, volume 2*, Kiel: Schmidt Schach GmbH.
- Moul, C.C. and J.V.C. Nye (2008): “Did the Soviets collude? A statistical analysis of championship chess 1940-1978”, *Journal of Economic Behavior and Organization* 70, 10-21.
- Šahovski Informator (2008): *The Best of the Best 1000*, Belgrade: Šahovski Informator.
- Sonas, Jeff (2012): Chessmetrics – Historical ratings, available at: <http://www.chessmetrics.com/cm/CM2/HistoricalRatings.asp>.
- Soltis, Andrew (2000), *Soviet chess 1917-1991*, Jefferson, North Carolina, and London: McFarland.
- Wijnberg, N.M. (1995): “Selection Processes and Appropriability in Art, Science, and Technology”, *Journal of Cultural Economics* 19, 221-235.
- Wijnberg, N.M. and G. Gemser (2000): “Adding Value to Innovation: Impressionism and the transformation of the Selection System in Visual Arts” *Organization Science* 11, 323-329.
- Winter, E. (1999): “*Kings, Commoners and Knaves*”, Russell Enterprises, Milford (CT).
- Yair, G. (1995): “Unite Unite Europe. The political and cultural structures of Europe as reflected in the Eurovision Song Contest”, *Social Networks* 17, 147-162.
- Zitzewitz, E. (2006): “Nationalism in Winter Sports Judging and its Lessons for Organizational Decision Making”, *Journal of Economics & Management Strategy* 15, 67-99.