

# Comparative analysis of the games of the finalists from the biggest International and Bulgarian Table Tennis Competitions in 2000

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**Abstract** What are the similarities and differences in playing styles of the best masters - Bulgarian and foreign - in table tennis? The detailed answer to this question is extremely topical and with great practical significance. The subject of the investigation was the playing style and its effectiveness. The participants in the investigation were finalists from:

- Olympic Games Sydney 2000: Kong Linghui (China) – Waldner (Sweden); Wang Nan (China) - Li Ju (China);
- 22nd European Championship, Bremen: Karlsson (Sweden) – Primorac (Croatia); Gotch (Germany) – Stef (Romania);
- Final of Top "12", Sofia: Doichinov – Parapanov; Simeonova – Shirilinkova.;
- Individual Republican Championship: Asenov – Parapanov; Kasabova – Shirilinkova.

The purpose of our investigation was a detailed analysis of the playing style and its effectiveness of the finalists - men and women - from the biggest Bulgarian and International Championships in 2000. To achieve this end the following goals had to be settled: predominantly execution determination of the single strokes, the play positiveness, and effectiveness during the final games. The finalists' play from the specified competitions was video filmed and then recorded with special methods for registration of indexes that are of interest to us. The results were processed by mathematical and statistical methods and presented in tables and diagrams. The analysis allowed us to conclude that the best Bulgarian competitors in table tennis are in arrears compared with the world elite.

*(Key words: comparative analysis, style of play, positiveness and effectiveness of play, play confidence, predominant execution)*

## 1 Introduction and formulation of the problem

What are the similarities and the differences in the playing styles of the best world, European and Bulgarian table tennis players? The detailed answer to this

question is extremely topical and has big practical significance.

The literature in the table tennis is scanty in respect of the investigations upon the playing style and its effectiveness.

The structure of the competitive activity of the best players determined by Djokic (2000) allows us to compare his results with the results of our work.

The results of the detailed analysis of the play between Samsonov (BRS) and Person (SWE) in the final game of the Yugoslav Open Championship - 1998 were published by Grubor (1999).

The percentage of major strokes, degree of confidence and effectiveness determined in our previous investigation (Otcheva and Drianovski, 2000) permit us to consider some tendencies in the development of the contemporary playing style (Yuza et al., 1992; Drianovski, 1983).

## 2 Methods and subjects

The aim of our investigations is a comparative analysis of the playing style and its efficiency.

To attain this aim it was necessary to resolve the following goals:

- predominant execution of the various strokes
- determination of their playing confidence and
- determination of the effectiveness during the final games of the Olympic

Games Sydney 2000, The European Championship 2000 (Bremen), the finals of the Bulgarian Republican Championship and the Tournament Top "12" - 2000.

The object of our investigations were the play style of the players: Kong Linghui (CHN), Waldner (SWE), Karlsson (SWE), Primorac (CRO), Asenov (BUL), Parapanov (BUL), Doitchinov (BUL), Wang Nan (CHN), Li Ju (CHN), Gotsch (GER), Steff (ROM), Kasabova (BUL), Schirilinkova (BUL), Simeonova (BUL).

The games of the finalists of the listed competitions were taped on a video player and were then analyzed in detail, as a special method of taping was used for the indexes, and the connections between them, that have interested us.

## 3 Results and analysis

The data from these games were analyzed by mathematical and statistical methods (alternative analysis) and are shown numerically in Tables 1, 2, 3. They are illustrated graphically in Figure 1- 10.

Analysis of the first basic task: Determination of the percentage of the separate strokes used by each of the finalists during the indicated games (the number of the strokes of the particular type as a percentage of the total number of executed strokes). From Figure 2 is obvious that highest percentage of predominant execution of top-spin forehand has the Bulgarian player Parapanov - 38.4 % and top-spin backhand - 21.61 % the Olympic Champion Kong (CHN) in his final game he has used 34.61 % top-spin forehand and 4.1 % top-spin backhand. The Bulgarians Parapanov and Asenov used more regularly top-spin

forehand and top-spin backhand. The finalists from the European Championship, Carlson (SWE) and Primorac (CRO), used top-spin backhand more often, which helped to suggest a tendency towards a more universal bilateral game with top-spin forehand and top-spin backhand. The inferiority of the Bulgarian Asenov is clearly expressed — top-spin backhand 5.8 %. With the women it is obvious that the finalist in the European championship Steff (ROM) has the highest proportion of top spin forehand - 52.1 %. At the Olympic Champion we determined predominant execution of top-spin forehand 48 % (Figure 3).

Table 1. Men (kinds of strokes)

TABLE 1 - MEN (KINDS OF STROKES)																	
Legend (All figures are in %)																	
1 Predominant execution of the strokes				2 Percentage of effectiveness					3 Percentage of reliability of the strokes								
Player	All strokes		Top-spin F%	Top spin B%	Lift B%	Lift F%	Kontra attack F%	Kontra attack B%	Intermediate F%	Intermediate B%	Short drop Ball F%	Short drop Ball B%	Push defensive B%	Flip over table B%	Flip over table F%	Slice over table F%	
	F%	B%	Kill strokes F%	Kill strokes B%		Kill overhead F%	Lob offensive F%	Lob defensive B%	Chops defensive F%	Chops defensive B%			Push defensive F%				Slice over table B%
KONG LINGHUI CHN	51,5	48,5	1	34,4	4,1	0,5							18,7	0,5			
			2	27	16									87			
			3	81	100	100		100	95	89	84	100	85		69	100	
WALONE R SWE	52,4	47,6	1	31,7	6,9				14,5	7,2	6,7	5,9	2,8		1,2	1,7	
			2	0,5	33	16				1,8							
			3	83	58				82	83	75	60	83		89	64	100
KARLSS ON SWE	42	58	1	32	14	4,3	2,3	4,1	8,5	3,3	6,1	6,6	2,9	1,3	4	0,3	
			2	2,9	2			0,6	0,9								
			3	84	80	100	100	64	92	100	94	66	100	84	100	100	100
PRIMORA C CRO	63	37	1	33	14,8	0,4			7	20	0,4	2		0,8	5	0,6	
			2	0,4	15	8											
			3	81	80	100			72	68	94	80		40	48	36	84
average figures (foreigners)			1	32,78	9,96	1,73	2,30	2,16	11,50	10,10	4,93	4,73	2,85	0,87	3,40	1,16	
average figures (foreigners)			2	1,27	2,00	-	0,00	0,60	1,36	-	-	-	-	-	-	-	0,80
average figures (foreigners)			3	27,00	13,30	-	-	-	-	-	-	-	-	-	-	-	-
average figures (foreigners)			3	82,25	79,60	100,00	100,00	82,00	85,26	90,00	86,75	72,76	91,60	70,50	82,67	66,67	84,87
average figures (foreigners)			3	66,67	64,00	100,00	-	66,00	67,60	100,00	100,00	-	-	75,76	-	-	100,00

TABLE 1 - MEN (KINDS OF STROKES)																	
Legend (All figures are in %)																	
1 Predominant execution of the strokes				2 Percentage of effectiveness					3 Percentage of reliability of the strokes								
Player	All strokes		Top-spin F%	Top spin B%	Lift B%	Lift F%	Kontra attack F%	Kontra attack B%	Intermediate F%	Intermediate B%	Short drop Ball F%	Short drop Ball B%	Push defensive B%	Flip over table B%	Flip over table F%	Slice over table F%	
	F%	B%	Kill strokes F%	Kill strokes B%		Kill overhead F%	Lob offensive F%	Lob defensive B%	Chops defensive F%	Chops defensive B%			Push defensive F%				Slice over table B%
ASENOV BUL	60	40	1	29,5	5,8	5,8			6,2	6,6	6,6	6,2	2	1,6	1,9	4,6	
			2	1,5	6												
			3	76	86	75			64	83	57	62	51	74	81	56	80
PARAPANOV BUL	57,3	42,7	1	38,4	21,6			1,5	6,7	5,9	0,4	8,2	0,4	1,1	8,9		
			2	1,1	27	16			3,4								
			3	87	88			100	83	100	64	79	54	86		63	
DOITCHINOV BUL	42,4	57,6	1	25	15,8	6,7			2,7	8,3	4,6	0,9	2,3	2,3	1,2	1	4,6
			2	14	6												
			3	54	62	85			64	83	80	54	64	76	75	75	56
PARAPANOV BUL	57,2	42,8	1	36,7	16,6	5,9	1,8	4,8	13,2	0,9		2,3	2	3,7	0,1	0,9	
			2	0,9	25	7			6,7	0,9							
			3	75	85	54		50	60	71	100		46	50	75	100	
average figures (Bulgarians)			1	32,40	14,36	4,13	1,85	6,10	6,60	3,13	6,10	1,76		2,17	2,98		
average figures (Bulgarians)			2	1,30	0,30	-	-	5,05	0,30	-	-	-	-	-	-	-	-
average figures (Bulgarians)			3	20,25	9,75	-	-	-	-	-	-	-	-	-	-	-	-
average figures (Bulgarians)			3	73,00	80,26	71,33	75,00	67,76	84,25	75,25	65,00	63,76	65,60	70,33	73,60	68,00	
average figures (Bulgarians)			3	100,00	100,00	100,00	-	94,00	94,00	100,00	100,00	-	-	69,00	-	36,00	

Table 2. Women (kinds of strokes)

TABLE 2 - WOMEN (KINDS OF STROKES)																	
Legend (All figures are in %)																	
1 Predominant execution of the strokes			2 Percentage of effectiveness						3 Percentage of reliability of the strokes								
Player	All strokes		Top-spin F%	Top spin B%	Lift B%	Lift F%	Kontra attack F%	Kontra attack B%	Interme date F%	Interme date B%	Short drop Ball F%	Short drop Ball B%	Push defensive F%	Flip over table B%	Flip over table F%	Slice over table F%	
	F%	B%	Kill strokes F%	Kill strokes B%		Kill overhead F%	Lob offensive F%	Lob defensive B%	Chops defensive F%	Chops defensive B%			Push defensive F%				
WANG NAN CHN	70	30	1	48	71	0.9											
				0.4	0.4		0.4						12	1.4	2.8	0.4	
				18	7									4.6			0.7
LIJU CHN	52	48	1	82	74			80	100								
				100	100	100							85	100	100	100	
				31	15.1					6.7	4.7	5.2	7.5		14.7	2.1	1.5
GOTSCH GER	53	47	1	16	13												
				84	54				67	88	100				84	100	66
				6.7	1.4			1.5	2.3	43.2	37.5						
STEFF ROM	70	30	1	52.1	14.6			0.6	0.4	10.8	7.9	2.4	0.2				
				1.62	2.00			0.2	1						1.8	0.8	
				20	7												
average figures (foreigners)			1	34.45	12.27	0.90		0.60	3.63	6.10	6.55	6.73	0.35	9.83	1.77	1.70	1.26
average figures (foreigners)			2	19.00	9.00			0.40	0.86	1.65	43.20	37.50					0.70
average figures (foreigners)			3	83.60	68.33	100.00		100.00	78.26	98.67	94.50	94.33	100.00	82.25	86.33	100.00	83.00
average figures (foreigners)				94.67	75.00				73.00	84.00	60.00			83.00			100.00

TABLE 2 - WOMEN (KINDS OF STROKES)																	
Legend (All figures are in %)																	
1 Predominant execution of the strokes			2 Percentage of effectiveness						3 Percentage of reliability of the strokes								
Player	All strokes		Top-spin F%	Top spin B%	Lift B%	Lift F%	Kontra attack F%	Kontra attack B%	Interme date F%	Interme date B%	Short drop Ball F%	Short drop Ball B%	Push defensive F%	Flip over table B%	Flip over table F%	Slice over table F%	
	F%	B%	Kill strokes F%	Kill strokes B%		Kill overhead F%	Lob offensive F%	Lob defensive B%	Chops defensive F%	Chops defensive B%			Push defensive F%				
KASABOVA BUL	62	38	1	35	12.6	2.4	6.2	2	6.6	3.2	5.4	6.8	2.6				
					1.2			0.6	1.2								
				16	5												
SCHIRILINKOVA BUL	42.6	57.4	1	5.9		2.3											
				23.4	0.5					6.5	36	2.6	17.7	4.1	0.5	0.5	
				10													
SIMEONOVA BUL	50.9	49.1	1	63	75	1.8											
				32	21.8					5	5.9	9.5	17.2	1.1	1.1		
				21	2												
SCHIRILINKOVA BUL	40	60	1	7.3		2.7	5	1.5	3.9								
				24.7													
				16													
average figures (foreigners)			1	20.05	17.20	2.30	6.60	2.83	5.47	6.40	21.36	3.43	7.13	11.83	0.86	1.40	3.00
average figures (foreigners)			2	24.05	0.85			1.85	1.26	0.10							
average figures (foreigners)			3	18.60	3.60												
average figures (foreigners)				13.00													
average figures (foreigners)			1	67.50	75.00	54.00	49.00	64.33	66.00	51.60	48.57	77.00	87.60	48.33			
average figures (foreigners)				72.00	69.50			74.00	63.00				87.60				

Of the Bulgarian players Kasabova has the biggest percentage of top-spin forehands - 35 % against 32 % of Simeonova. There the inferiority of the Bulgarian women is obvious. The average percentage of top-spin forehand of the foreign women is 34.45 % against 20.05 % at the Bulgarian players. (Table 3).

From the diagram of Figure 2 is obvious that the percentage of top-spin backhand of the Bulgarian men is more balanced with that of the foreign players with the exception of Asenov.

Table 3. Average figures in %

		TABLE 3 - average figures in %															
		1 Predominant execution of the strokes				2 Percentage of effectiveness				3 Percentage of reliability of the strokes							
All strokes	F%	B%	Top spin	Top spin	Lift	Lift	Kontra	Kontra	Interna	Interna	Short	Short	Push	Flip	Flip	Slice	
			F%	B%			attack	attack					diata				diata
			Kill	Kill			overhead	Lob	Lob				Chops				
			strokes	strokes			F%	offensive	defensive				defensive				
			F%	B%			F%	F%	B%				F%	B%		F%	
MEN (foreigners) average figures	1	1.73	32.78	9.95	2.30	2.30	2.15	11.50	10.10	4.93	4.73	2.85	12.63	0.87	3.40	1.15	
			1.27	2.00	0.60	1.35								2.68		0.60	
			27.00	13.00													
MEN (Bulgarians) average figures	1	6.13	82.25	79.50	100.00	100.00	82.00	85.25	90.00	86.75	72.75	91.50	70.50	82.67	66.67	94.67	
			56.67	54.00	100.00	86.00	87.50	100.00	75.75	75.75							100.00
			32.40	14.95	1.30	0.90	1.65	5.10	8.50	3.13					2.17	2.98	
TOTAL MEN average figures	1	3.93	73.00	80.25	71.33	100.00	75.00	67.75	84.25	75.25	65.00	53.75	66.50	70.33	73.50	68.00	
			100.00		100.00	84.00	94.00	100.00	59.00	59.00							36.00
			32.59	12.45	2.30	1.90	8.30	9.30	4.03			4.91	2.30	12.63	1.52	3.19	1.15
WOMEN (foreigners) average figures	1	0.90	23.63	10.88													
			1.28	1.45													
			77.63	79.88	85.67	100.00	78.50	78.50	87.13	81.00	68.88	72.83	68.50	76.50	70.08	81.33	
WOMEN (Bulgarians) average figures	1	2.30	78.33	54.00			66.00	90.75	100.00				67.38			68.00	
			34.45	12.27			0.60	3.63	6.10	6.55			9.03			1.25	
			19.00	9.00			0.40	0.85	1.65	43.20	37.50	6.73	0.35	3.13	1.77	1.70	0.70
TOTAL WOMEN average figures	1	1.60	43.50	68.33	100.00	100.00	78.25	88.67	94.50	84.33	100.00	62.25	86.33	100.00	83.00		
			94.67	75.00			73.00	84.00	60.00			83.00				100.00	
			27.25	14.73	5.60	1.72	4.55	6.25	13.95			5.08	3.74	9.96	1.31	1.55	2.13
TOTAL MEN average figures	2	77.00	12.84	1.43									2.77			0.70	
			18.75	6.25													
			75.50	71.67	48.00	77.17	72.13	70.08	71.58	85.67	93.75	57.81	86.33	100.00	83.00		
TOTAL MEN average figures	3	77.00	83.33	72.25	100.00	100.00	74.00	63.00	84.00	60.00			84.50			100.00	

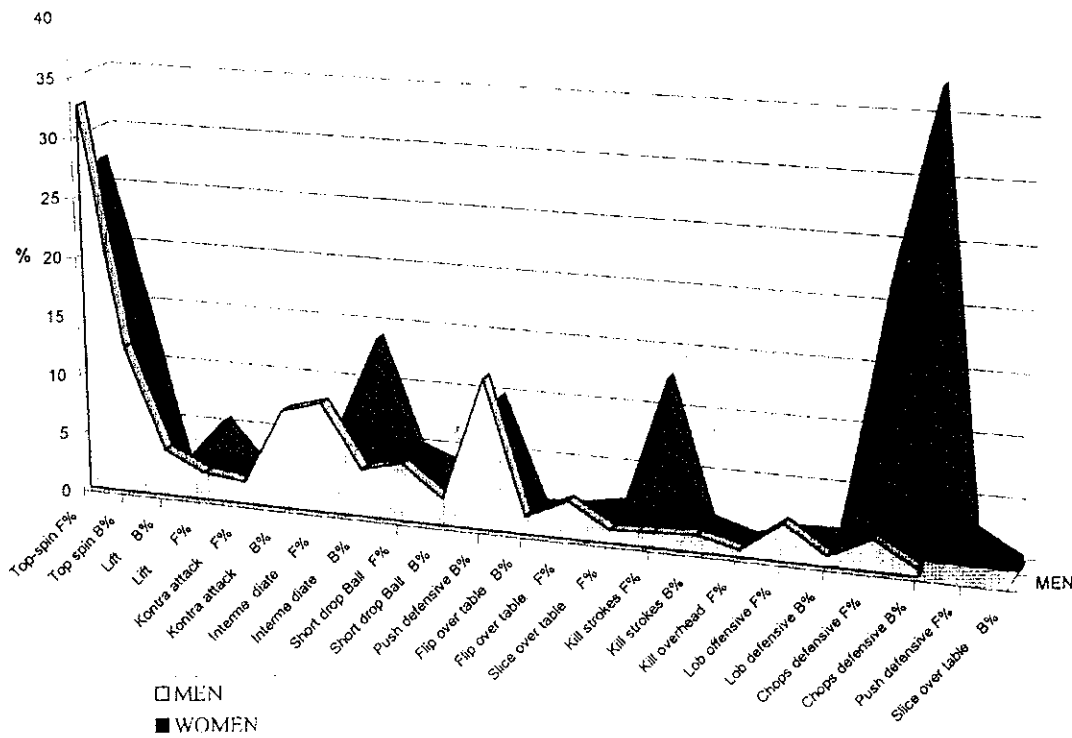
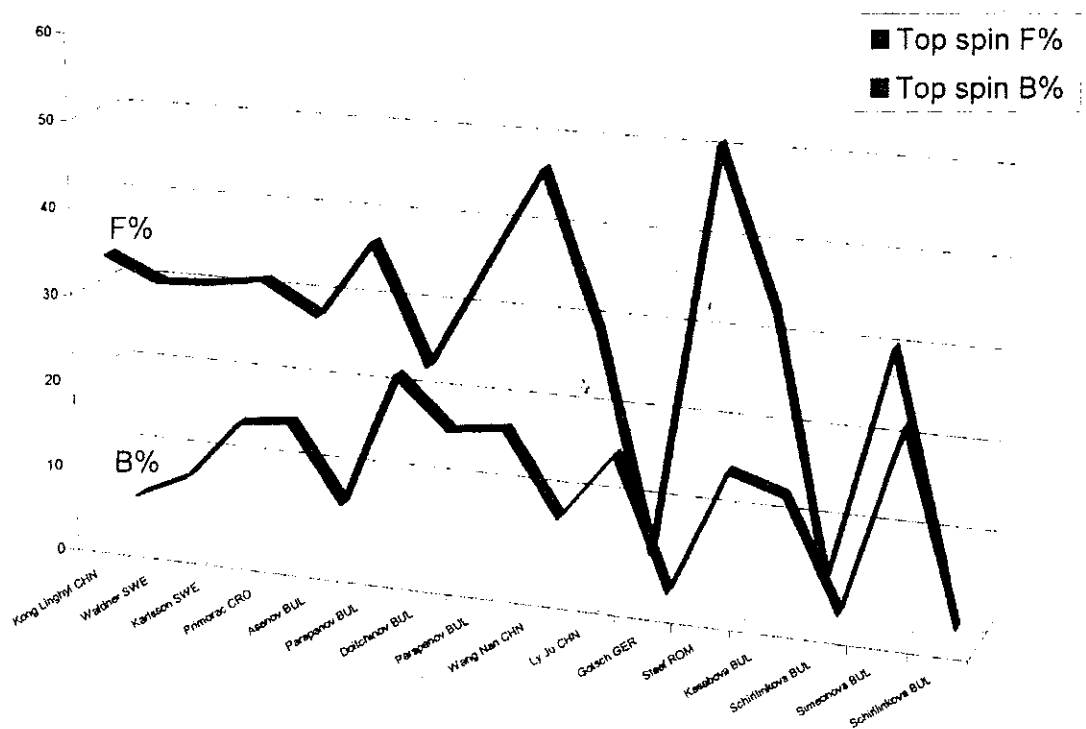


Figure 1. Predominant execution of the strokes (kinds of strokes — men, women)



**Figure 2.** Predominant execution of the strokes  
(Top Spin F%, Top Spin B%)

Analyzing the data from the tables for percentage execution of completed forehand strokes (F) Figure 4,5 it is obvious that the highest Bulgarian players are Parapanov and Schirilinkova, who often take some risks in the game. The finishing stroke from the backhand is very rarely used. From Table 3 it is clear that the average percentages of the forehand and backhand finishing strokes do not differ appreciably from those of the foreign participants - men or women.

Analysis of the second basic task: Determination of the percentage of effectiveness of the various strokes for each of the players (calculated as the number of executed strokes of a particular type compared with the points gained from them as a percentage).

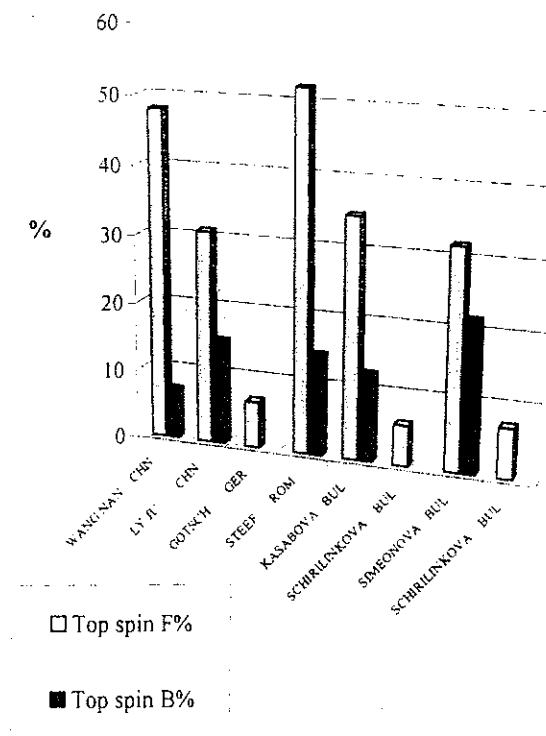


Figure 3. Predominant execution of the strokes — women (Top-Spin F%, Top-Spin B%)

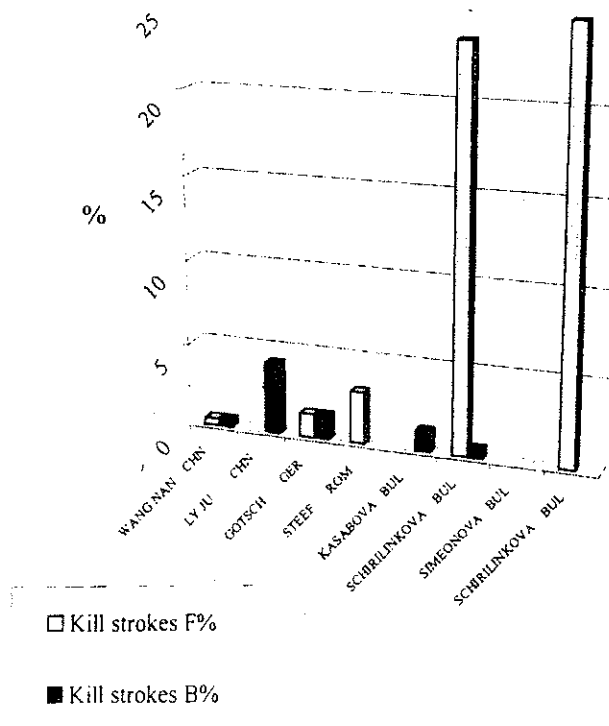


Figure 4. Predominant execution of the strokes — women (Kill strokes F%, Kill-Strokes B%)

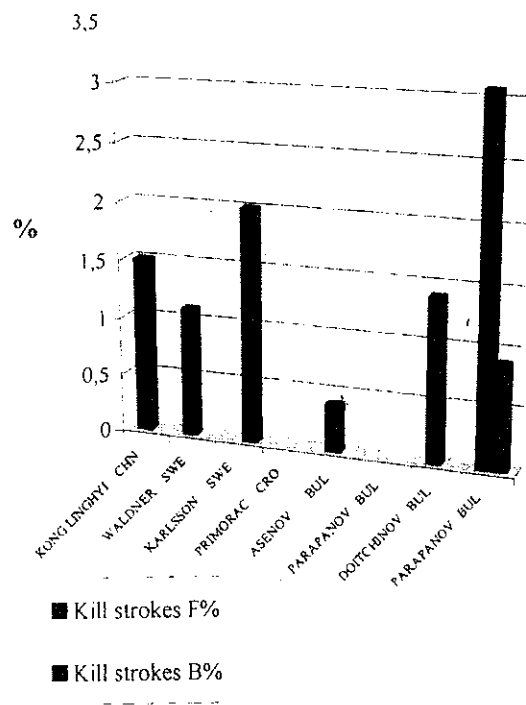


Figure 5. Predominant execution of the strokes — men (Kill strokes F%, Kill-Strokes B%)

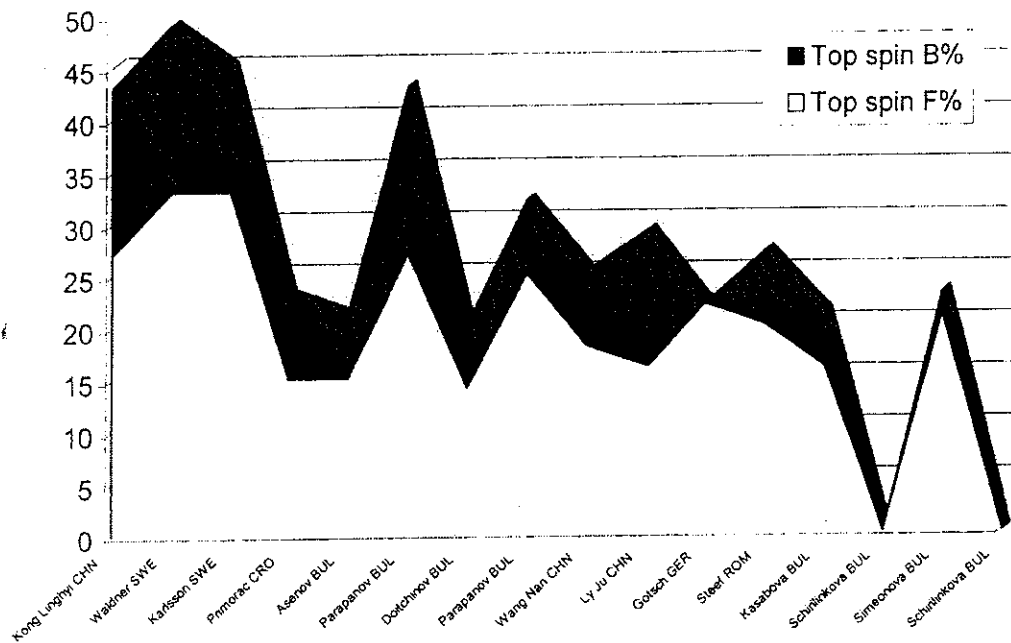


Figure 6. Percentage of effectiveness (Top-Spin F%, Top-Spin B%)



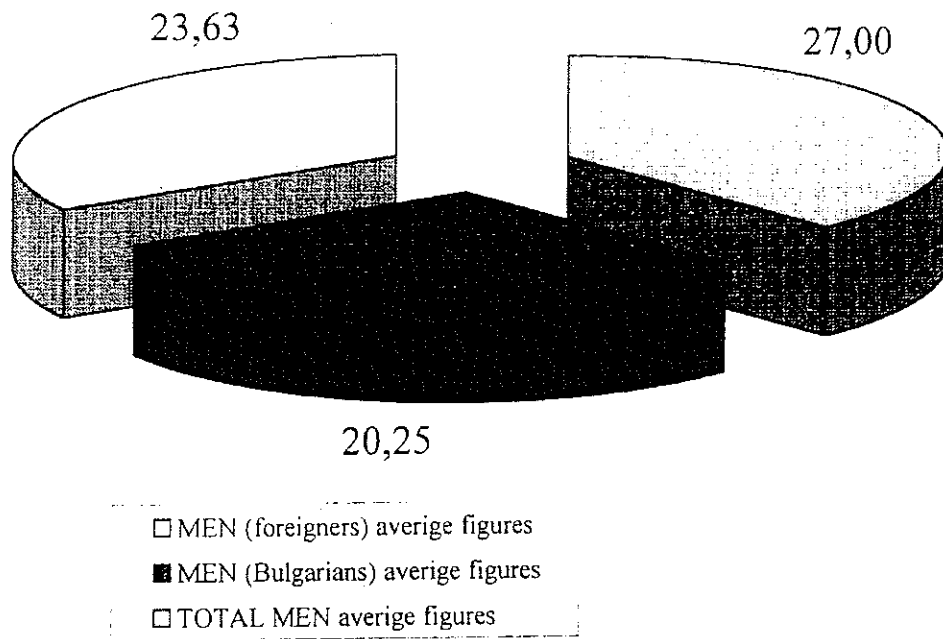


Figure 7. Percentage of effectiveness for Top-Spin F% — Men (Foreigners, Bulgarians, Total)

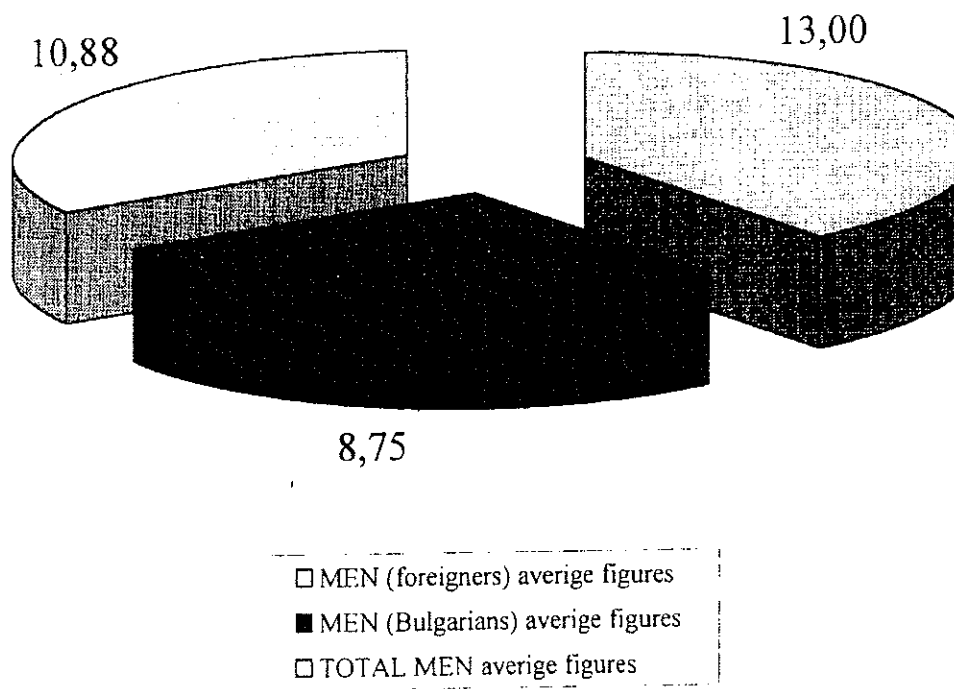


Figure 8. Percentage of effectiveness (Top-Spin B)

From Figure 6 is clear that with the top-spin forehand the foreign women have better results than the Bulgarians. The effectiveness of the top-spin backhand of Kasabova and Simeonova are equal to those of the European Champion Steff and the Olympic Champion Wang Nan. From the average percentages of effectiveness on Figure 7, 8 is obvious that the effectiveness the Bulgarians' top-spin forehands are 4 % to 7 % less effective. At the same indicator the differences between the women in average indexes is 4.25 % in favor of the foreign players. The obvious conclusion is that the Bulgarian players - men and women must devote more to tactical attack combinations.

Olympic Champion Kong (CHN) has the highest percentage of effectiveness at top-spin backhand, while Waldner and Doitchinov (BUL) have the lowest. Because all of these rarely use this stroke, the top-spins of Waldner and Karlsson are the most effective, and those of Doitchinov (BUL) and Asenov (BUL) are lowest. The differences between them are significant and considerable and the reduction in this index by the Bulgarians is obvious.

Among the women (Figure 6) the percentages of effectiveness of top-spin forehand are nearly even. The percentage of the effectiveness of top-spin backhand clearly favors the foreign women.

Analysis of the third basic task: Determination of the percentage of reliability (that is calculated as all executed strokes of a particular type are compared the successful ones, as the mistakes must be deducted: the points that are missed and those that are hit out or in the net).

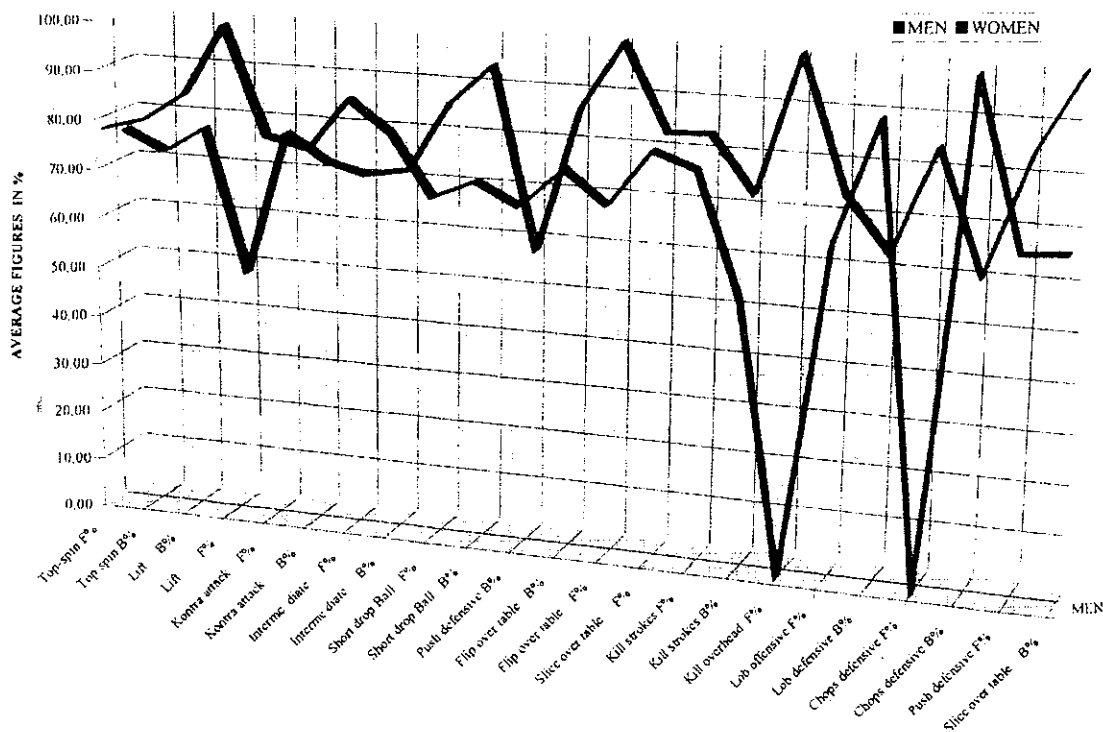
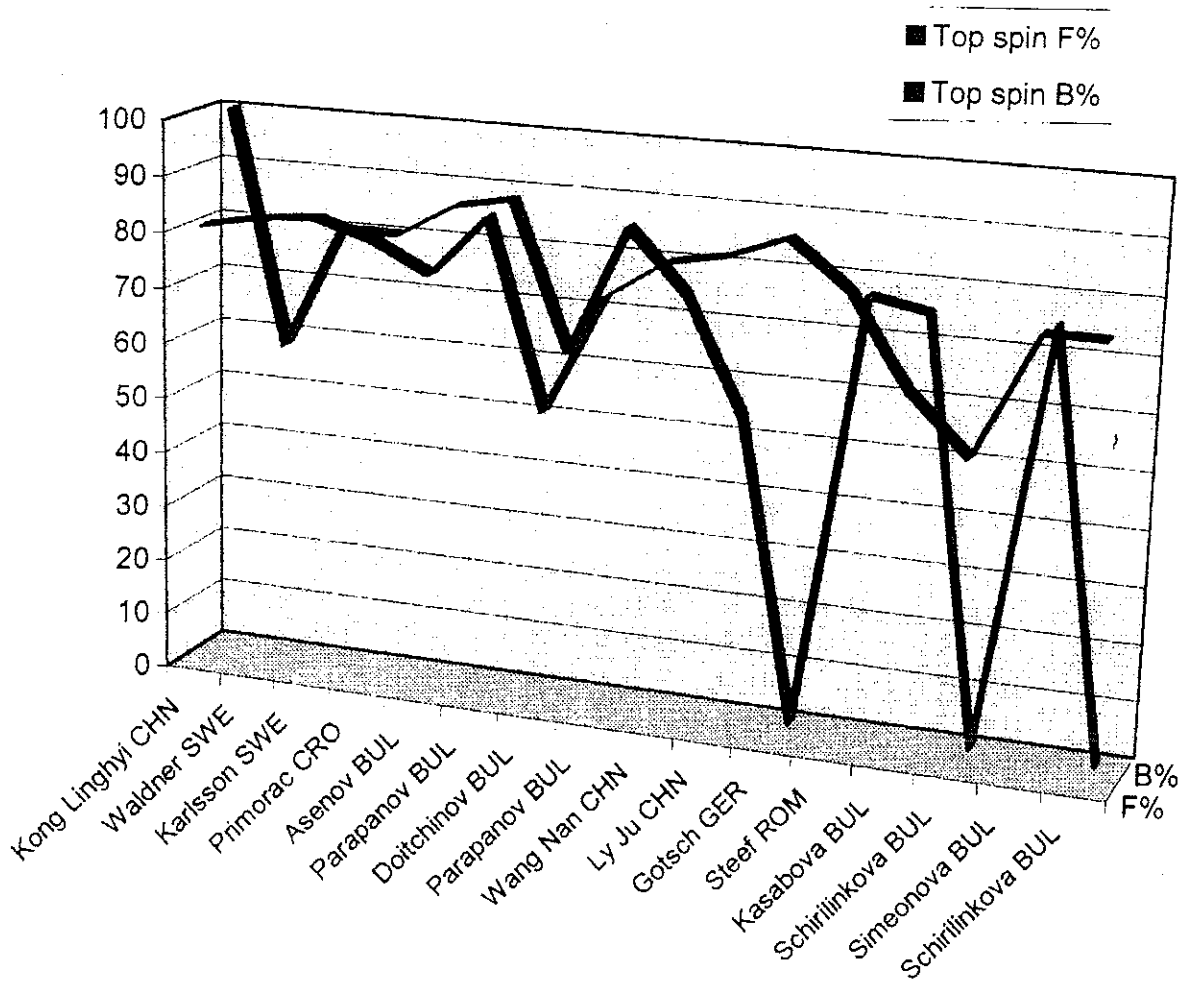


Figure 9. Percentage for reliability of the strokes



**Figure 10.** Percentage for reliability of the strokes (Top-Spin F%, Top-Spin B%)

From Tables 1, 2, 3 and Figure 9, 10 it is obvious that the percentages of reliability of the main strokes by the foreign men are significantly higher than those of the Bulgarian players the same is true for the women.

The differences in the separate 'average values are high (above 15 %), considerable and essential (Figure 9, 10). And here the inferiority of the Bulgarian players, men and women, must be restored by more hours of work for improvement in technical and tactical training, and improvement of different strokes and combinations.

To achieve a higher reliability of play during the competition it is obviously necessary to achieve a higher percentage of training reliability in conventional situations in given circumstances and precise practice.

Here the inferiority of the Bulgarian men and women compared with the foreign masters is biggest, and it requires urgent correction in the educational-training process for this problem to be surmounted.

#### 4 Conclusions

The detailed analysis of the calculated results enables us to make some important conclusions in respect of the inferiority in the development of the play style of the Bulgarian men and women compared with the world champions and masters.

The practical recommendations for improvement of the training methods of the Bulgarian players have already been expressed in the analysis of the results according the three main tasks.

#### 5 References

- Djokic Z (2000) The structure of competitors' activities of top table tennis players. Abstracts of The Sixth ITTF Sport Science Congress.
- Drianovski Y (1983) Tactics in modern table tennis. NSA, Sofia, Bulgaria.
- Grubor R (1999) The men's singles final at the Yugoslav Open, Samsonov versus Persson. ITTF Table Tennis Illustrated May-June 1999.
- Otcheva G and Drianovski Y (2000) Survey of the game styles of some of the best Asian players at the 12th World University Table Tennis Championship. Programme & Abstracts of The 6th International Table Tennis Federation Sports Science Congress.
- Yuza N et al. (1992) Game analysis of table tennis sciences in top Japanese players of different playing styles. International Journal of Table Tennis Sciences No.1.