



## Technical-tactical evolution of the international competitions of karate

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### Introduction:

With this research we want to study, through the match analysis, the technical-tactical evolution of the last years in the international competition of karate (kumitè). The Match Analysis in combat sport is used for several reasons such as:

- to understand the current tendencies of the competition
- to study the techniques and the strategies used by the champions of the several categories
- to enrich one's technical-tactical background
- to find useful strategies to face the potential opponents.

For studying the recent evolution of the kumitè of high level, we analyzed the final matches (5 category: 60-65-70-75-80 kg) of the European Championship of karate in 1996, 1999 e 2002.

### Methods :

The material we used for the study was: 1 video recorder (sinudyne sv 14232s), 1 digital stopwatch "Casio at 203", 3 videotapes of the final matches of the last three editions of the European Championships of karate (Paris 96', Athens 99', Estonia 02') and specific tables to collect data.

We carefully observed the video tapes and we analysed the following parameters:

- 1) total number of techniques and number of valid techniques; (Tab.1)
- 2) Variety and kind of technique used (*Gyaku Tsuki*, *Kyzami Tsuki*, *Uraken uchi*, *Mae geri*, *Ura Mawashi geri*, *Mawashi geri*, *Sweep and closed*); (Tab.2)
- 3) length of phase "of study" and "of attack/defence"; (Tab.3)

The data collected through the tables have been studied statistically with Excel 2000.



### Results:

A constant data seems to be the prevalent use of arm's attacks and, particularly, of the Gyaku Tsuki technique (Graf.2). As already verified in literature, this technique resulted significantly more used (and more effective) than other techniques in the three championships ( $p < 0,0001$ ).

The relationship between the total length of the phase of attack and the phase of study (average value 13%) seems to depend only on the characteristics of the single athletes (Tab. 3). Even the number of attacks launched and their efficacy seems to depend mainly on the characteristics of the single athletes, even if in the time there has been a general tendency to use an higher number of attacks, from 16,4 to 20,8 (Tab. 1).

It is interesting to note that from 1999 to 2002 (Tab. 1), the efficacy level of the techniques used by the athletes decreased from 34% to 16% ( $p < 0,02$ ) with an increase of the average number of attacks launched (from 18,6 to 20,8) and a average decrease of the scores obtained (from 6,4 to 3,4).

Tab. 1 - Technical analysis (for year) of European C. (5 weight cat.)

		Technique number	point	Efficacy %
1996	W tot	44	16	36%
	L tot	38	9	24%
	TOT	82	25	30%
	Mean	16,4	5	-
1999	W tot	47	22	47%
	L tot	46	10	22%
	TOT	93	32	34%
	Mean	18,6	6,4	-
2002	W tot	59	15	25%
	L tot	45	2	4%
	TOT	104	17	16%
	Mean	20,8	3,4	-
Mean tot V		10,0	3,5	35%
Mean tot S		8,6	1,4	16%

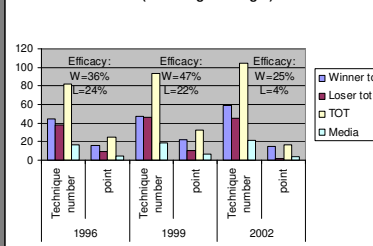
Tab. 2 - Techniques more utilized in 3 European C.

	GT	KT	UU	MG	UMwG	MwG	Swcl
Tot technique	185	21	5	2	12	43	5
Tot point	69	4	1	0	2	4	2
Efficacy %	37%	19%	20%	0%	17%	9%	40%

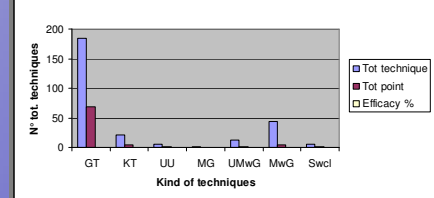
Tab. 3 - Analysis of match time mean (sec.)

	study	attack	TOT	% attack
1996	155	25	180	14%
1999	155,6	20	175,6	11%
2002	156,4	23,6	180	13%
Mean	155,7	22,9	178,5	13%

Graf. 1 - Technical analysis (for year) of European C. (in 5 categ. di weight)



Graf. 2 - Techniques more utilized in 3 European C.



### Conclusions:

The comparison between the two last European championships shows an inverted ratio between the number of the techniques launched during the match and their efficacy. This data could show that it is better a qualitative training based on the increase of the rapidity of the specific action and reaction, than a training based on the increase of the metabolic capacities.

Of course the kind of work to do will depend mainly on the physical and technical characteristics of the single karateka. These characteristics, independently from factors like the weight category or the performance level, are really different for each athlete, as it verified in this and in other researches we conducted.

### References:

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