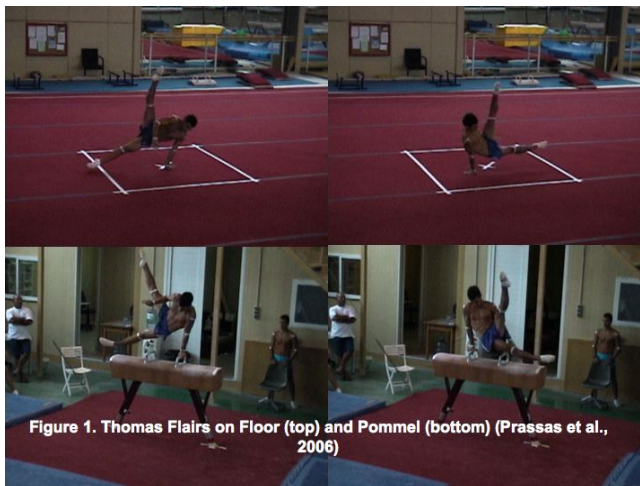


## TEMPORAL CHARACTERISTICS OF THOMAS FLAIRS ON THE POMMEL AND FLOOR

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**INTRODUCTION:** To perform successfully on any apparatus, gymnasts must execute skills with creativity and virtuosity. Whereas creativity is demonstrated by introducing new skills, combining existing ones, or adapting skills to different apparatuses, virtuosity is expressed by executing skills with exceptional technique (Prassas et al. 2006). The Thomas Flairs (Fig. 1), originally introduced and performed on the pommel horse, have been adapted on other apparatuses including the floor. Understanding the timing of the different phases of the skill and what effect the different physical characteristics of the two apparatuses may impose on that timing, would be valuable to coaches and gymnasts seeking to improve performance, judges evaluating gymnastic routines, and scientists studying motor skills.



**METHODS:** Thomas Flairs performed by two skilled gymnasts were videotaped utilizing two 60 Hz cameras. Viewed from above, both gymnasts performed the skill rotating clockwise. In each apparatus, Flairs were analyzed utilizing the Ariel Performance Analysis System (APAS). Temporal and kinematic data for one full circle beginning with and ending at the right hand contact with the floor or pommel were examined and compared. The feet, hips, shoulders, and elbow joints, and both hands were digitized. Position data were smoothed by digital filtering at 7 Hz.

**RESULTS AND DISCUSSION:** Temporal results are presented in Table 1. The results suggest that Tomas Flairs in both the pommel horse and floor are executed with similar “tempo”. Specifically, gymnasts spent more time in front support than in rear and—for gymnasts rotating clockwise when seen from above—less time in right support than in left. It remains to be seen if these trends can be generalized.

**Table 1. Temporal Characteristics of Thomas Flairs on Floor and Pommels**

Variable	Floor		Pommels	
	Subj. 1	Subj. 2	Subj. 1	Subj. 2
Total Time (sec)	1.13	1.08	1.1	1.13
Time in Front Support (%)	17.6	13.8	16.7	17.6
Time in Rear Support (%)	14.7	10.8	13.6	11.8
Time in Right Support (%)	32.4	33.8	31.8	32.4
Time in Left Support (%)	35.3	41.5	37.9	38.2

### REFERENCES:

Prassas, S., Ariel, G., Ostarello, J. & Tsarouchas, E. (2006). Thomas Flaires on the pommel and floor: a case study. *Proceedings of XXIV International Symposium on Biomechanics in Sports*, Volume 1 (p 262), Department of Sport Science and Kinesiology, University of Salzburg, Austria.