



Biomechanics applied to racket sports

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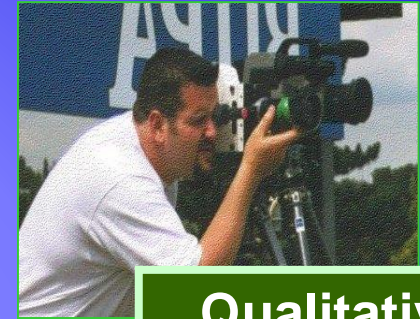
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6th World Congress of Racket Sport Science

biomechanical methods

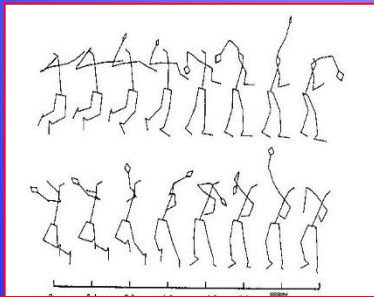
observations

- qualitative analysis



Qualitative
analysis

- quantitative analysis



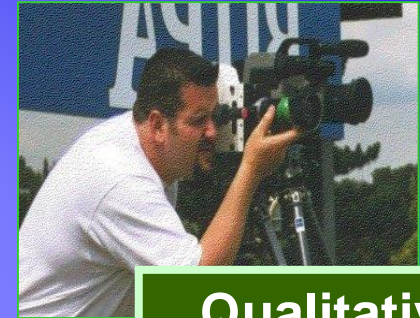
Quantitative analysis

measurements

biomechanical methods

observations

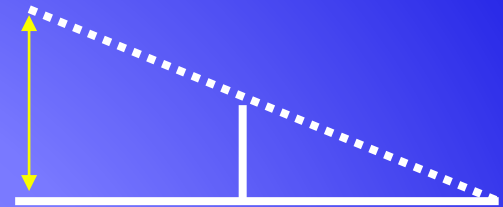
- qualitative analysis
- quantitative analysis



Qualitative
analysis



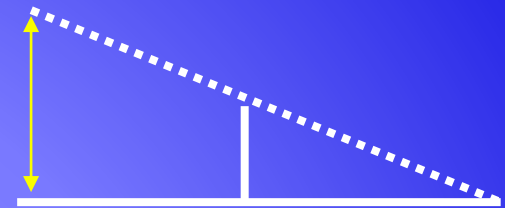
Qualitative



positioning



Qualitative



timing

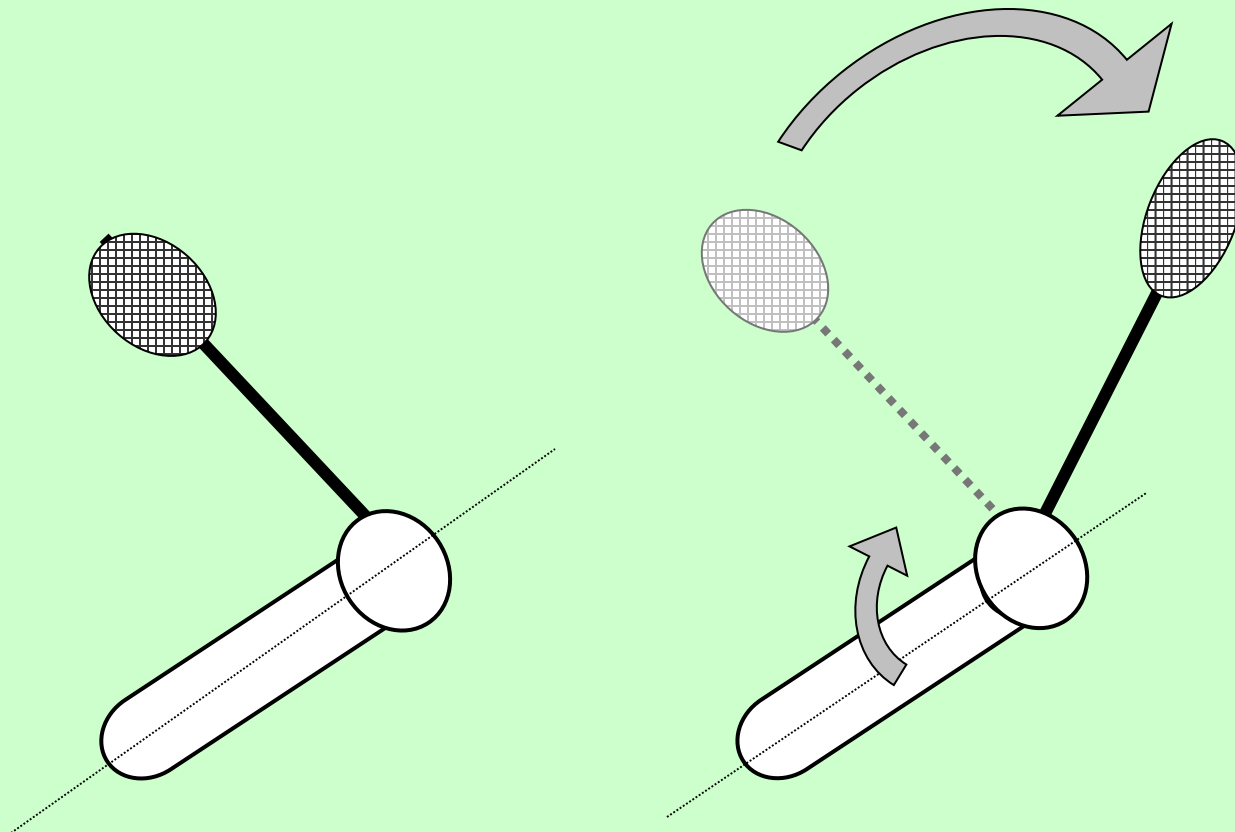


Qualitative



Stroke production - the serve

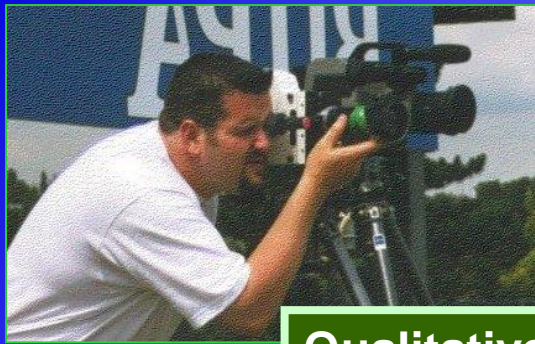
the serve - upper arm internal rotation and forearm pronation



Principles of movement applied to racket skills

principles of movement

- proximal-to-distal sequencing
(*enhancing speed*)
- stretch-shorten cycle
(*enhancing power*)



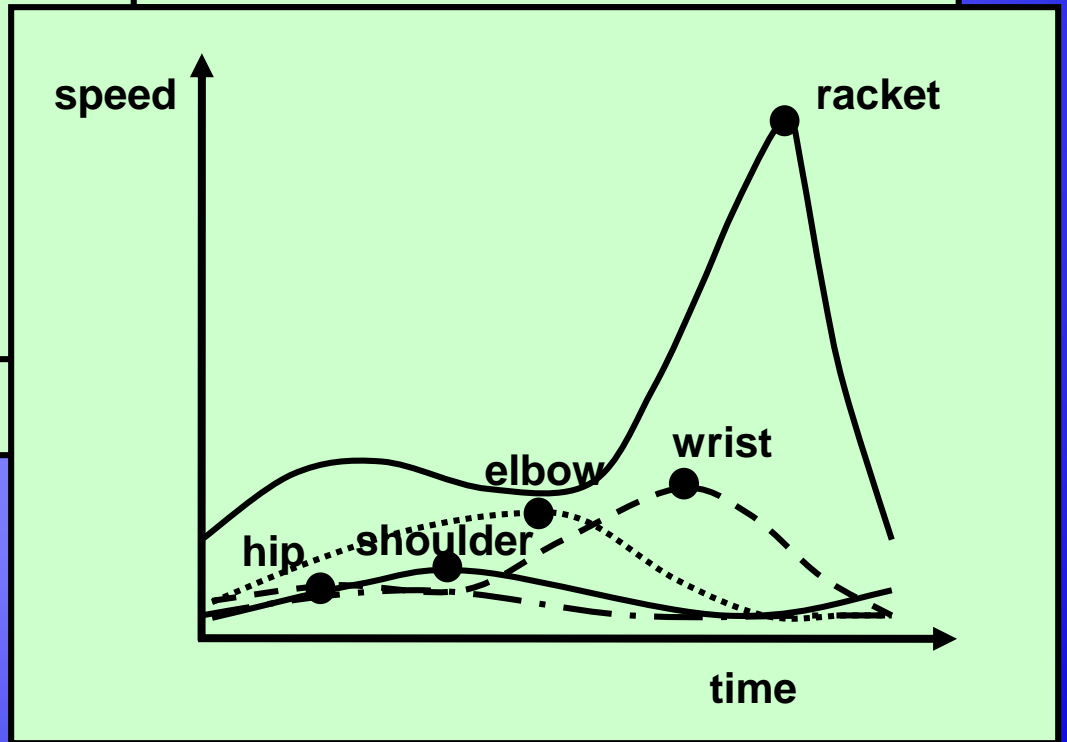
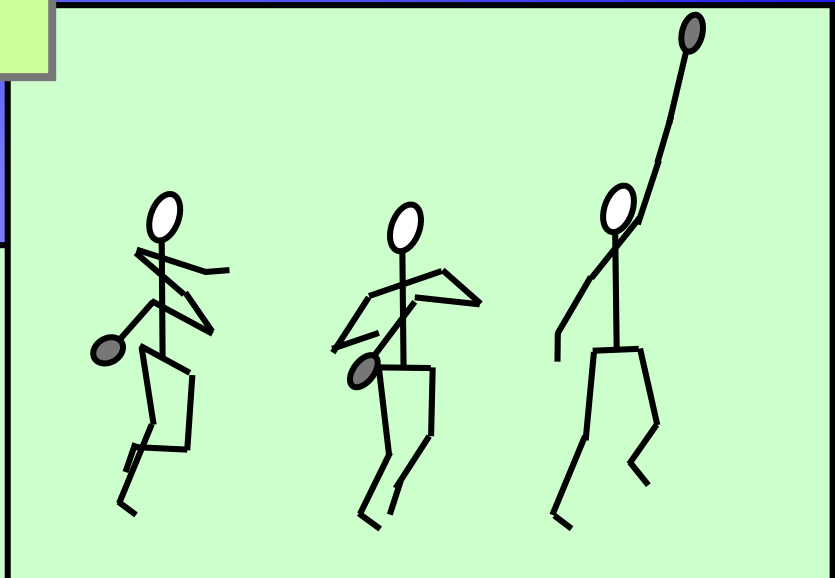
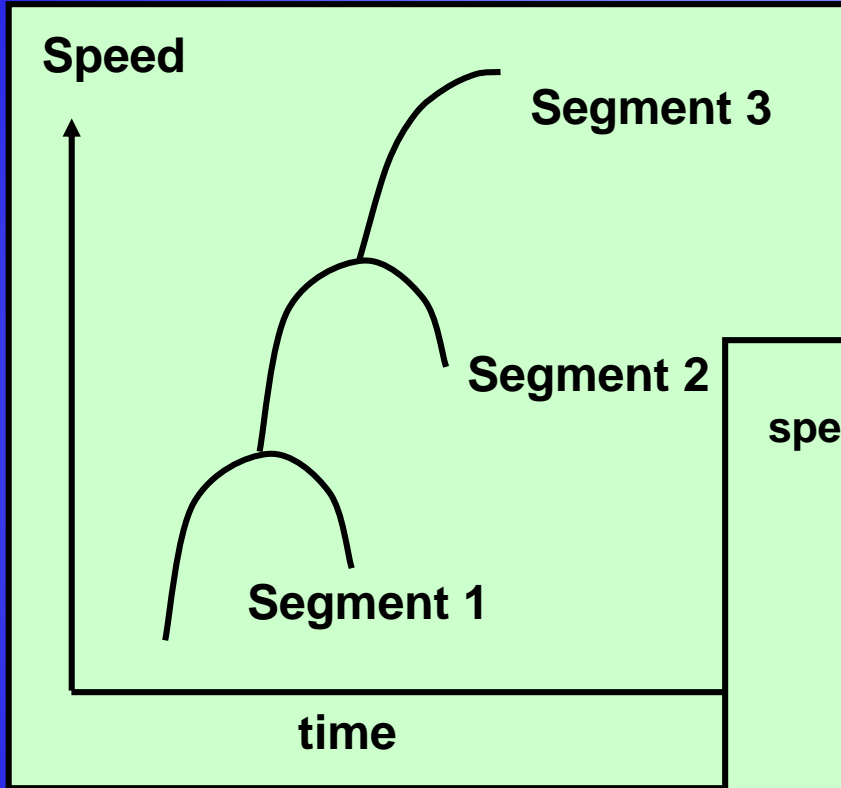
Qualitative



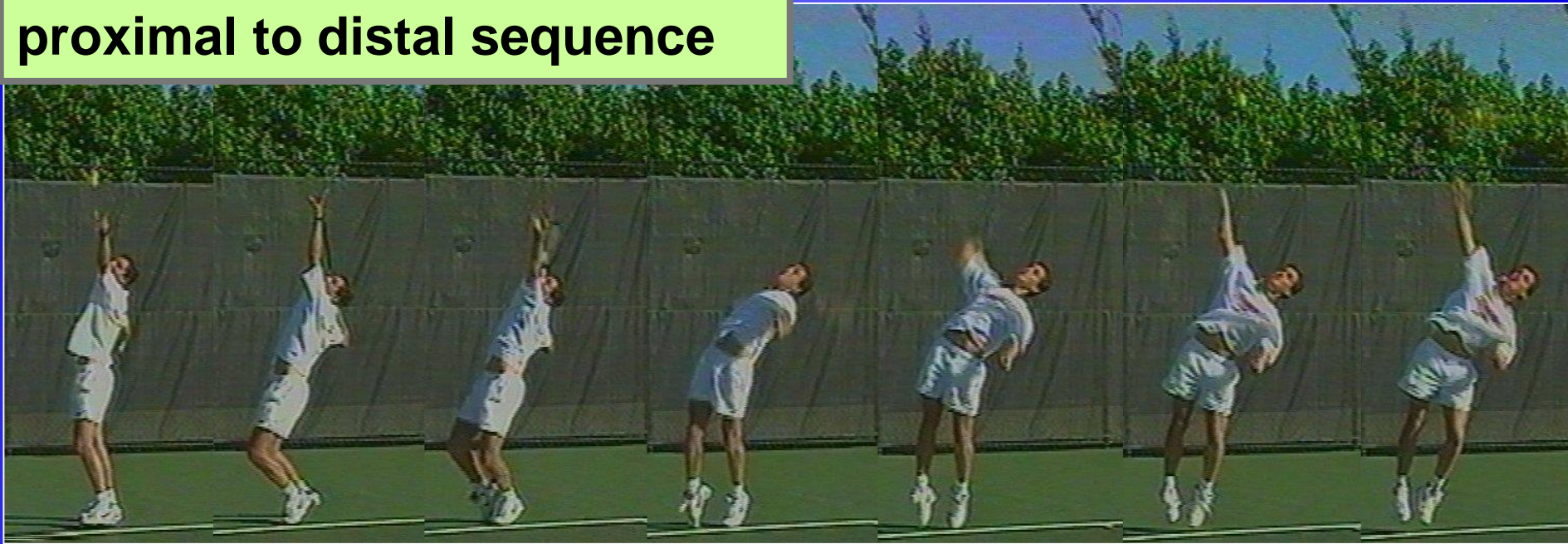
principles of movement 1

- proximal to distal sequence

proximal to distal sequence

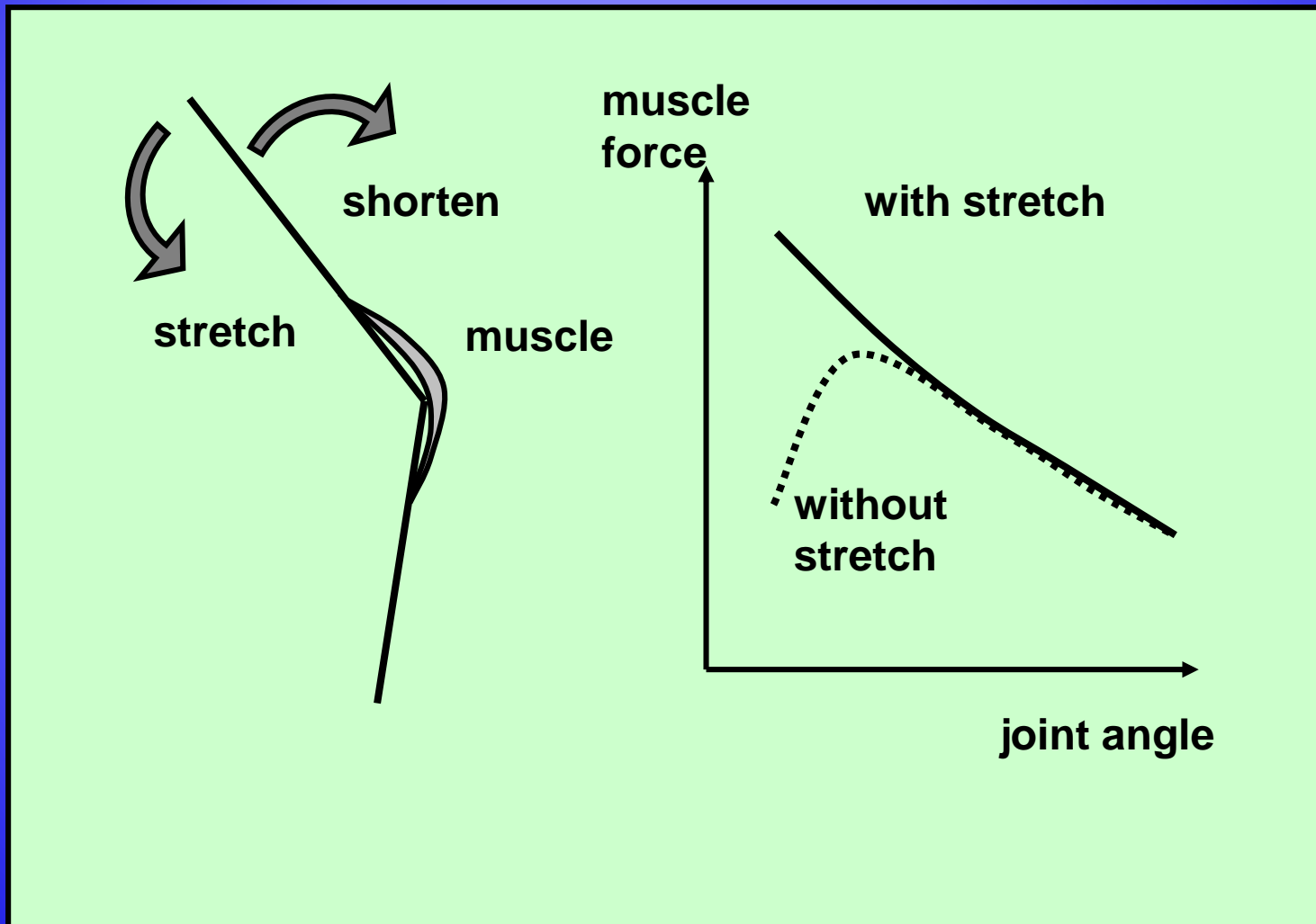


proximal to distal sequence



principles of movement 2

- stretch-shorten cycle



stretch-shorten cycle - chest



stretch-shorten cycle - shoulder



conclusions ...



- Qualitative analysis based on video can enable the coach to study more about a player's positioning, timing and stroke production
- Coaches' attention can be focussed on specific points when observing performance
- Knowledge of ***principles of movement*** help the coach to develop a player's technique which will lead to improved performance



thank you

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