

-嚴進洪-

Motor Skill Control, Learning, Concentration, & Sport Performance: Psychological Basis

運動技能學習和發揮的心理機制--注意力的因素

Jin H. Yan, Ph.D.



香港中文大學

The Chinese University of Hong Kong

Brain--Behavior Model



The function of motor cortex
or basal ganglia in motor
control & learning

Training Experience

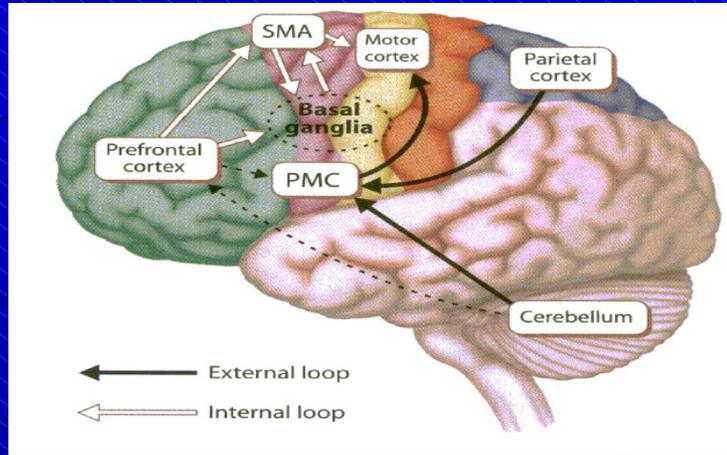
or

Age



Perceptual-Motor Integration

**Input
(Stimulus)**



**Movement
(output)**

**Stimulus
Identification**



**Response
Selection**



**Response
Programming**

嚴進洪: 專業和非專業網球選手在運動表現上的差異

Performance Differences between Expert and Recreational Tennis Players



TennisServer.com © Pablo Sanfrancisco 2007

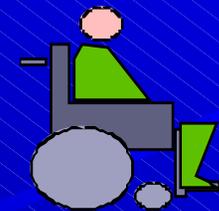
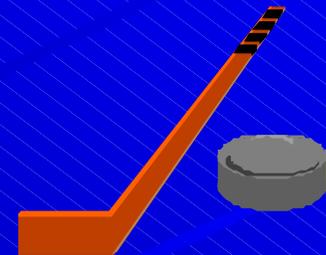
Visual Attention & Search in Sports

嚴進洪



Sport & Exercise Psychology

- Exercise Psychology
- Sport Psychology
- Rehabilitation Psychology



(Rejeski & Brawley, 1988)

Sport Performance

Age: growth & maturation

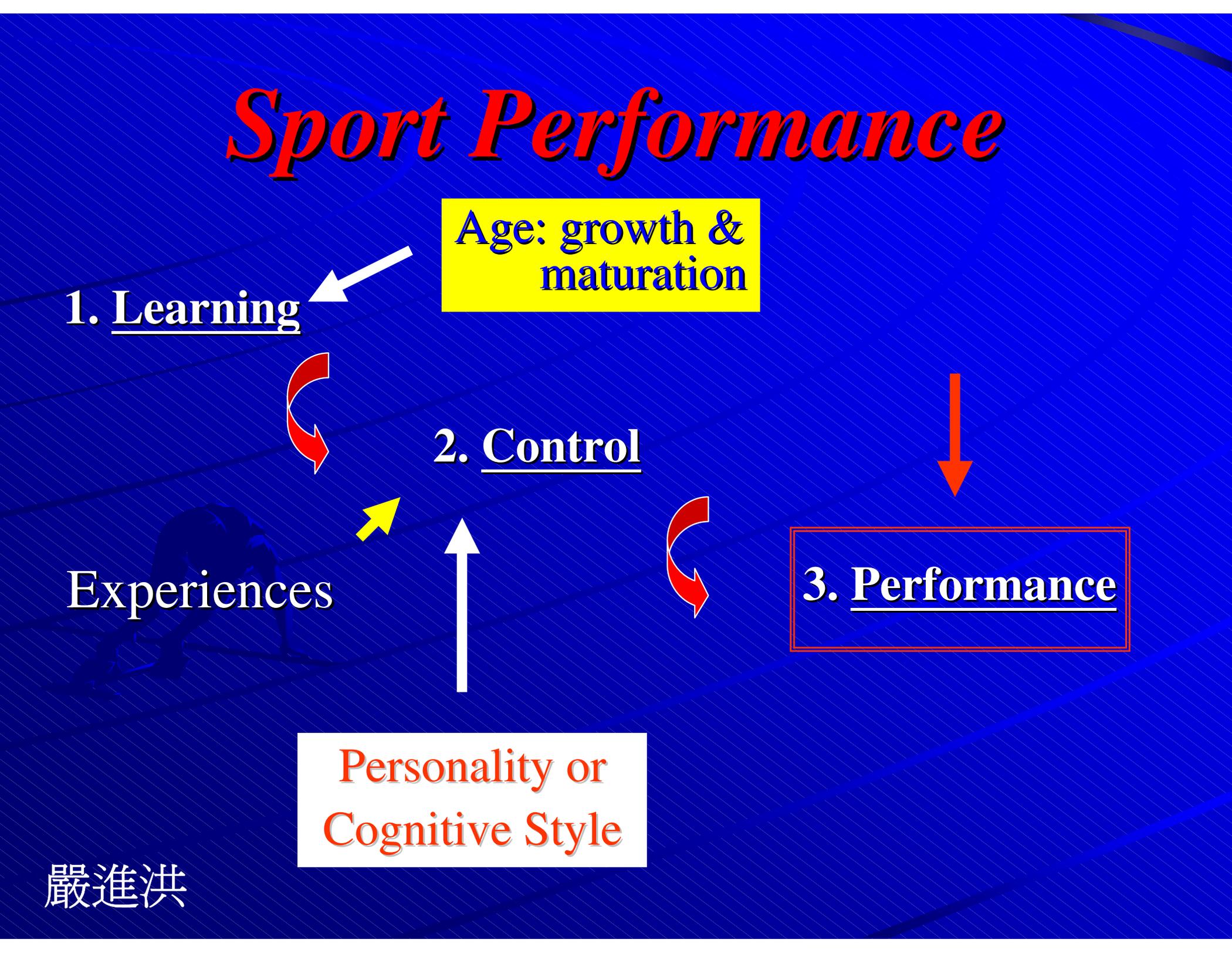
1. Learning

2. Control

3. Performance

Experiences

Personality or
Cognitive Style



嚴進洪

Concentration



Outline

- ✦ What Is Concentration?
- ✦ Concentration and Optimal Performance
- ✦ Types of Attentional Focus
- ✦ Attentional Problems
- ✦ Choking As an Attentional Problem

(continued)

Outline

- ◆ Self-Talk

- ◆ Assessing Attentional Skills

- ◆ Tips for Improving Concentration On Site

- ◆ Exercises for Improving Concentration



What Is Concentration?

Key

**Concentration =
Attention.**



What Is Concentration?

Concentration

The mental effort placed on sensory or mental events. It is the person's ability to exert deliberate mental effort on what is most important in a given situation.

What Is Concentration?

Four components of concentration

- **Focusing on relevant environment cues: Selective attention: selecting what cues to attend to and disregard**
- **Maintaining attentional focus**
- **Situation awareness: The ability to understand what is going on around oneself (to size up a situation)**
- **Shifting attentional focus when necessary**

Concentration and Optimal Performance

Elite athlete peak performance is associated with

- being absorbed in the present and having no thoughts about past or future,
- being mentally relaxed and having a high degree of concentration and control, and
- being in a state of extraordinary awareness of both the body and the external environment.

Differences Between Experts and Novices in Attentional Processing

Experts as compared to novice performers

- ✦ make faster decisions and better anticipate future events,
- ✦ attend more to movement patterns,
- ✦ search more systematically for cues,
- ✦ selectively attend to the structure inherent in sport, and
- ✦ are more skillful in predicting ball flight patterns.

Concentration and Optimal Performance

Focus on only the relevant cues in the athletic environment and eliminate distractions.

The ability to automatically process or execute movements is critical in performance environments.

Four Types of Attentional Focus

Broad



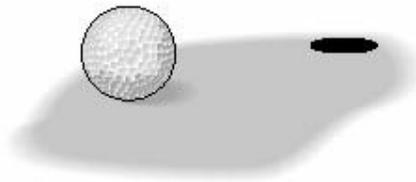
Used to rapidly assess a situation (e.g., a football quarterback rapidly assesses the positioning of the defensive backs)



Used to analyze and plan (e.g., developing a game plan or strategy)

Width

Narrow



Used to focus exclusively on one or two external cues (e.g., the ball)



Used to mentally rehearse an upcoming performance or control an emotional state (e.g., mentally rehearse golf putting or taking a breath to relax)

External

Internal

Direction

Choking As an Attentional Problem

Choking is an attentional process that leads to impaired performance and the inability to retain control over performance without outside assistance.

Choking is characterized by performers' exhibiting conscious step-by-step execution of skills and a breakdown of automated movement patterns.

Inattention blindness

非注意盲视

- ✦ Also known as *perceptual blindness*, is the phenomenon of not being able to see things that are actually there.
- ✦ Athletes?

