

PIERRE GASSENDI
AMBULO ERGO SUM
I WALK, THEN I AM

The philosophical prioritization of cognition over movement

The idea

RENÉ DESCARTES
COGITO ERGO SUM
I THINK, THEN I AM

18 November 2014

nature

Born to run
How evolution got us up to speed

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focus on the wide-ranging set of perceptual, **cognitive**, emotional, and social changes associated to the development of locomotion

TARGET ARTICLE

Travel Broadens the Mind

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focus on the evolutionary relevance of running from an energetic and biomechanical perspective

Charybdis:
 Early specialization in youth sport → focus on performance.
 Contributing factors interacting with the demands of sport systems: perceptions of Eastern European sport programs, parent's expectations, labeling youth as talented at an early age, sporting goods and services industry, and expertise research (Malina, 2012).

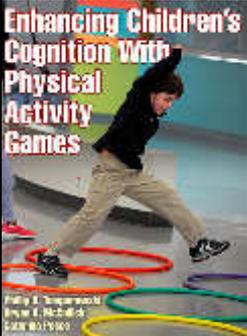


Scylla:
 predominant "medical" perspective from which researchers generally examine dose-response relations between physical activity and health outcomes to derive prescription guidelines (e.g., Bouchard, 2001; Lee, 2008).

Against Charybdis:

(I) Evidence that highly skilled or creative athletes (Baker, 2003; Memmert et al., 2010) have a past history of early diversification → toward a healthier model of socialization into sport (Coté & Hay, 2002); benefits of multi-sport interventions in PE (Pesce et al., 2012). component skills approach' to the study of sport e in sports can lead to adaptations in basic cognitive → broad transfer hypothesis (Furley & Memmert, 2010)

- Pesce, C. (2012). Shifting the focus from quantitative to qualitative exercise characteristics in exercise and cognition research. JSEP.
 - Tomporowski, McCullick, Pendleton, D.M., & Pesce, C. (in press). Exercise and children's cognition: The role of exercise characteristics and a place for metacognition.



Against Scylla:

that fundamental motor skill proficiency developed in childhood have a strong influence on subsequent PA levels and fitness during adolescence mediated by perceived competence (Barnett et al., 2008, 2009; Stodden, 2008)

(II) Disconfirmations of the hypothesis that physical fitness gains mediate PA effects on cognition (Etnier et al., 2006) → further pathways by which quality PA impacts cognitive functioning



**Economy - sustainable action:
Implemented project**



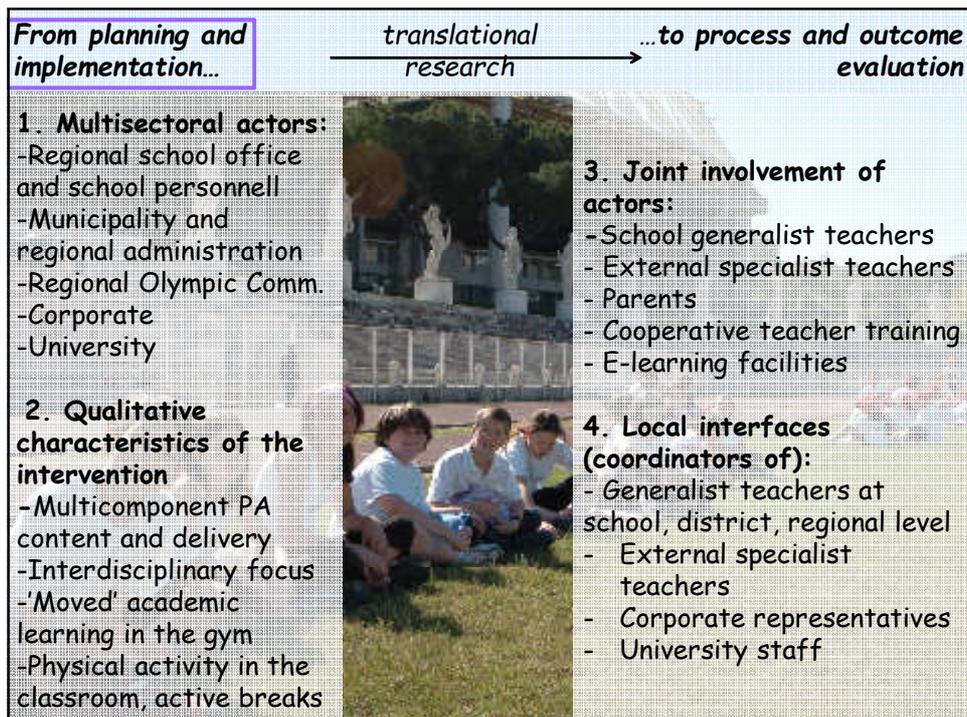
Physical activity promotion for children:

- What is the role of public-private multisectoral strategies?
- What strategies underly corporates' committment for PA promotion?
- Are there ways to go beyond traditional boundaries of CSR?

- Leone L., Ling, T., Baldassarre, L., Barnett, L. Capranica, L., & Pesce (in revision). Corporate responsibility for childhood physical activity promotion in the UK. *Health Promotion Int.*
 - Leone, L., & Pesce, C. (submitted). A realist synthesis of physical activity promotion guidelines: methodological issues. *Evaluation.*

Main characteristics of the implemented project:

1. Multisectoral public and private actors
2. Qualitative characteristics of the intervention
3. Joint involvement of generalist and specialist teachers in the intervention and in the teacher training, e-learning facilities
4. Local interfaces (coordinators of each subgroup of actors) to ensure the cascade process (planning → implementation → evaluation)



Variation and variability:

Key words in human motor development qualifying a new perspective in developmental exercise and cognition research (Hadders-Algra, 2010)

From the past century...

A dexterous action displays outstanding features of **switchability**, **resourcefulness**, **maneuverability**.

J.A. Bernstein (1940). On dexterity and its development. In Latash & Turvey, 1995)

resurrecting & revisiting

...to the new millennium

"What is old is new again": PA games with contextual interference (Tomporowski, McCullick, & Horvat, 2010)

"Back to the future": youth integrative neuromuscular training (Faigenbaum, 2013)

"Designed sports training": combining novelty & diversification (Moreau & Conway, 2013)

From planning and implementation...

translational research

...to process and outcome evaluation

Critical analysis

1. Outcome evaluation:

- physical fitness
- motor coordination and skills
- cognition and metacognition
- life skills

2. Process evaluation:

- Local implementation, fidelization, realization
- Identification of possible areas for improvement: **RE-AIM** (Glasgow et al., 2004)

Reach: 80% of all preschool and primary school children (900) 😊

Effectiveness: promising preliminary outcomes! 😊

Adoption:

- Schools, children and school personnel 😊
- Parents (1:20) 😞

Implementation fidelity:

- Good homogeneity-diversity trade-off setpoint 😊
- Organizational problems for cross-over design 😞

Maintenance

- Project adherence 😊
- Adherence to teacher training 😞
- Dissemination/Institutionalization? 😞

