Eighth International Conference on Perception and Action

Proceedings

July 9-14, 1995
Faculty of Sport Sciences, University of the Mediterranean
Marseille, France

Organized by

Benoît G. BARDY
University of the Mediterranean

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CONTENTS

PROGRAM

ABSTRACTS OF THE SYMPOSIA

1. THE ACQUISITION OF PERCEPTUO-MOTOR SKILLS: THE CURRENT STATUS OF ECOLOGICAL DEVELOPMENTAL THEORIES 17
2. EVENT DYNAMICS PERCEPTION: COLLISIONS AND BEYOND 23
3. HUMAN FACTORS 31
4. ECOLOGICAL ACOUSTICS 37
5. RHYTHMIC AND DISCRETE MOVEMENT: THE CHALLENGE OF A UNIFIED ACCOUNT 43
6. THE VISUAL PERCEPTION OF BIOLOGICAL MOTION 49
7. INTRINSIC DYNAMICS OF PATHOLOGICAL MOTOR PATTERNS 57
8. INTERACTION BETWEEN PERCEPTION OF SELF MOTION, OBJECT MOTION AND LAYOUT 63
9. PERCEPTION-ACTION COUPLING AND LEARNING IN SPORT 69
10. MOTION CONTROL IN VIRTUAL ENVIRONMENTS: EMPIRICAL AND APPLIED APPROACHES 75
11. THE EMERGENT NATURE OF AFFORDANCE IN SOCIAL INTERACTION 81
12. IS PICTURE PERCEPTION SPECIAL? 87
13. VISUALLY GUIDED REACHING 93
14. ASYMMETRIES IN COORDINATION: DYNAMICAL PERSPECTIVES 99
15. REPRESENTATION, ACTION, AND THE DEVELOPMENT OF REPRESENTATION-ACTION COUPLINGS 105
16. AFFORDANCE, ACTION AND VALUE: A POSTMODERN PERSPECTIVE 111
17. AMODAL PERCEPTUAL ORGANIZATION OF SPOKEN EVENTS 119
18. HAPTIC INFORMATION FOR SPATIAL PERCEPTION 127

POSTERS 133
PROGRAM

SUNDAY - JULY 9
18:00 - 22:00  Registration and "Get Together"
CMCJ, World Trade Center
2, rue Henri Barbusse
13001 Marseille
-91.39.33.85.

In addition to the registration time for Sunday show above, the Conference Center
Registration Desk will be open every day from 8:00 to 12:00. The Registration Desk is
located in the hall next to Room Europe 57.

[ Program continued on next page ]

VIIth International Conference on Perception and Action

MONDAY - JULY 10

8:30 - 10:00  Opening
10:00  Coffee break
10:30 - 12:10  The Acquisition of Perceptuo-Motor Skills: The Current Status of
Ecological Developmental Theories
Audrey L. H. van der Meek and Blandine Brem.
10:40  Understanding change in infant skill acquisition
Karen E. Adolph and Robert S. Siegler
11:00  Dynamics in development
Beatrice Verbeuken
11:20  Development is cultural learning
John Pickering
11:40  Beyond perception and action, what develops? Self-awareness in a
meaningful environment
Philippe Rochat
12:00  Discussion
12:10  Lunch and Poster Session
14:00 - 15:40  Event Dynamics: Perception: Collisions and Beyond
Steve Flinn and Thomas A. Stoffregen
14:05  Experimental quality on a collision course
Sverker Runeson
14:35  Anomalous completion in intrasaccadic motion: Stimulus or event?
Bruce Bridgeman, Heiner Deubel, and Werner Schneider
14:55  Object dynamics and the anticipatory modulation of grip force
Alan Wing, Randy Flanagan, and James Tresilian
15:15  Issues in the visual perception of caught weight
Steve Flinn, Thomas A. Stoffregen, and Jay Smart
15:35  Discussion
15:40  Coffee break
16:00 - 17:40  Human Factors
Kim Vicente
16:10  Perceptually-based displays can improve monitoring and control. Will
what they teach transfer to the use of traditional displays?
Judith A. Efflen, Nam-Gyoon Kim, and Robert E. Shaw
16:35  Some constraints on an ecological theory of strategic action
Alex Kirlik
17:00  Ecological design and telepresence: Preserving space-function-distance
relationships
Bill Buxton
17:25  Discussion
Program

17:40 Break

18:00 - 19:00 Poster Session

18:00 - 20:00 Evening Discussion: Ecological Approaches to Developmental Psychology and Social Psychology: Some Common Concerns
James Good and Blandine Bril

The purpose of this discussion group is to provide an opportunity to identify issues and problems of common concern to researchers utilising the ecological approach in their studies of human development and social behaviour. It is intended to focus on topics which have not been covered directly in this year's symposia, e.g., the role of culture, the importance of social context, the nature of social development.

20:00 Free Evening

VIIIth International Conference on Perception and Action

TUESDAY - JULY 11

8:00 Coffee

8:30 - 10:10 Ecological Acoustics
Larry Rosenblum and Rainer Guski

8:40 Ecological acoustics: Which ecology? What acoustics?
James A. Ballas

9:00 The auditory categorisation of the sound of falling wooden blocks
Stef Deboeck

9:20 Studies on the auditory perception of impending collision
Andreas Hellmann

9:40 Acoustic information for imminence of object pass by
Terri Erwin

10:00 Discussion

10:10 Coffee break

10:30 - 12:10 Rhythmic and Discrete Movement: The Challenge of a Unified Account
Yves Guiard and Gregor Schüller

10:35 Fitts’ law in the rhythmic versus discrete case: Chronometric and kinematic data
Yves Guiard

10:55 Imitation of rhythmic patterns: Symbolic and «direct» mediation between perception and action
Stefan Vogt

11:15 On rhythmic and discrete synergies: Current theories and new directions
Michael T. Turvey

12:00 Discussion

12:10 Lunch and Poster Session

14:00 - 15:40 The Visual Perception of Biological Motion
Maggie Shiffibi

14:00 The global perception of biological motion across time
Maggie Shiffibi

14:25 Perception of biological motion patterns in unusual orientations
Marina A. Pavlova

14:50 Perception of biological motions by infants
Bennett L. Berententhal

15:15 Motor-perceptual interactions
Paolo Viviani

15:40 Coffee break
16:00 - 17:40  **Intrinsic Dynamics of Pathological Motor Patterns**  
*Jürgen Konczak*

16:10  Interlimb coupling in hemiplegic CVA patients  
*Charles B. Walter and Christine Cunningham*

16:30  Effects of L-DOPA administration and visual cues on the kinematics of Parkinsonian gait  
*Daniel R. Mestre, Carlien van den Brand, Olivier Blin, and Jean Philippe Azulay*

16:50  Dynamics of movement coordination and tremor during gait in Parkinson’s disease  
*Richard E. A. van Emmerik and Robert C. Wagenaar*

17:10  Central timing mechanisms in Parkinson’s disease: On the control of repetitive lip- and finger movements  
*Jürgen Konczak*

17:30  Discussion

17:40  Break

18:00 - 19:00  **Poster Session**

20:00 -  **Bouillabaisse Evening** (optional)  
Les Salons de la Résale  
25, rue Fort Notre Dame  
13001 Marseille  
-91.54.19.10-

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**WEDNESDAY - JULY 12**

8:00  Coffee

8:30 - 10:10  **Interaction Between Perception of Self Motion, Object Motion and Layout**  
*Valérie Cornilleau-Peres and William H. Warren, Jr.*

8:40  Judgements of object motion and ego-motion  
*Albert van den Berg and Eli Brenner*

9:05  Visual control of posture  
*Stephanie de Boer and Tjeerd Dinse*

9:30  Neural mechanisms for detecting object motion, self motion, and time-to-collision  
*Barrie J. Frost*

9:55  Discussion

10:10  Coffee break

10:30 - 12:10  **Perception-Action Coupling and Learning in Sport**  
*Benoît G. Baudy, Jean-Jacques Tempfleid, and Michel Laurent*

10:40  Coordination and control in volley-ball serve: A preliminary study  
*Jean-Jacques Tempfleid, Martin Farrel, Michel Laurent, and Muriel De la Grasta*

11:00  Multispecification: No choice  
*Gilles Montagne, Michel Laurent, and Alain Durey*

11:20  Learning to hit accelerating objects  
*Reinoud J. Bootsm and Valérie Fayt*

11:40  Prospective control in somersaulting  
*Benoît G. Bardy*

12:00  Discussion

12:10  Lunch and Poster Session

14:00 - 15:30  **Annual Meeting of the International Society for Ecological Psychology (ISEP)**

15:30  Coffee break

16:00 - 17:40  **Motion Control in Virtual Environments: Empirical and Applied Approaches**  
*John P. Wann*

16:10  Time-to-passage and time-to-contact judgments in non-constant optical flow fields  
*Mary K. Kaiser and Heiko Hecht*

16:30  Time-to-wall-crossing (TWC) and perspective flight path displays  
*Max Mueller, Hans J. van der Vaart, and Erik Theunissen*
16:50 Virtually controlled locomotion
William H. Warren, Jr.
17:10 Controlling steering and braking during simulated and real driving
David N. Lee, John P. Wann, and Simon K. Reeskin
17:30 Discussion

17:40 Break

18:00 - 19:00 Poster Session

18:00 - 20:00 Evening Discussion: The "When" and "Where" of Goal-Directed Action
Jeroen B. J. Smets

How can we integrate the neurophysiological knowledge of spatial perception into an ecological description of goal-directed action? If you have ideas, you can present them during the first half hour. A discussion of the merits and limitations of the presented approaches will follow.

20:00 - Free Evening

THURSDAY - JULY 13

8:00 Coffee

8:30 - 10:10 The Emergent Nature of Affordance in Social Interaction
Jerry P. Ginsburg and James M. Good

8:30 Introduction and overview
James M. Good

8:35 Affordances in human learning and development
Edward S. Reed

9:00 Object-affordances guiding mother-child interaction
L. van Leeuwen, R. Kaufmann-Hayoz, F. Kaufmann, and D. Walther

9:25 Affordances are relationships
Alan Focke

9:50 Discussion: The joint creation and detection of affordances
Jerry P. Ginsburg

10:10 Coffee break

10:30 - 12:10 Is Picture Perception Special?
Harold A. Sedgwick

10:40 Illusions and pictorial representation
Barbara Gillam

11:05 Perceiving layout in pictures and natural scenes
James E. Cutting

11:30 Visual perception of events and action from kinematic (video) and static (photographic) displays
Alan P. Costall and S. Stavros Valenti

11:55 Picture perception is on a continuum with direct perception
Harold A. Sedgwick and Andrea L. Nicholls

12:10 Lunch and Poster Session

14:00 - 15:40 Visually Guided Reaching
Reinoud J. Bootisma and Geoffrey P. Bingham

14:10 Environmental pitch, pointing, and orienting
Arnold E. Stopera and Abigail Baustia

14:35 Picking up a moving object: Emergent timing in the reaching movement
Frank T. J. M. Zaal, Reinoud J. Bootisma, and Piet C. W. van Weeringen

15:00 Monocular perception of egocentric distance via head movement and its use in guiding a reach
Geoffrey P. Bingham and Christopher C. Pagano

15:25 Discussion
Program

16:00 - 17:40  Asymmetries in Coordination: Dynamical Perspectives
                Richard G. Carson

16:10  Asymmetrical coupling in multifrequency tapping: Fast hand dominates slow hand
                Liese Piiper, Peter J. BEEK, and Piet C. W. van WIETINGEN

16:30  Asymmetry effects in subjects with spastic hemiparesis
                Bert STEENBERGEN, Wouter HULSTIJN, Aviva De VRIES, and Maria BERGER

16:50  Nonlinear dynamics of bimanual laterality
                Paul J. TREFFNER

17:10  Asymmetries in coordination: Constraints on dynamic stability
                Whistler D. HERLICH, Romeo CHUA, Richard G. CARSON, and Michael KHAN

17:30  Discussion

17:40  Break

18:00  Poster Session

19:00  Reception Hosted by the City of Marseille
                Hôtel de Ville
                2, Place Maureau
                13 002 Marseille

FRIDAY - JULY 14

8:00  Coffee

8:30 - 10:10  Representation, Action, and the Development of Representation-Action Couplings
                John J. RIESER

8:40  Object representations and infants reaching for objects in the dark
                Rachel K. CLIFTON

9:00  Planning and perceiving as complementary processes in the guidance of action
                Claes H. von HOFSTEDEN

9:20  Locomotion and the organization of knowledge
                Herbert L. PICK

9:40  Young children's knowledge of changing perspective when locomoting through imagined surroundings and manipulating imagined objects
                John J. RIESER

10:00  Discussion: James A. THOMSON

10:10  Coffee break

10:30 - 12:10  Affordance, Action and Value: A Postmodern Perspective
                John PICKERING

10:40  Beyond goals: The place of values in a world of postmodern affordances
                Bert H. HODGES

11:00  An ecological approach to intelligence
                John T. SANDERS

11:20  Propagating cultural knowing
                Patricia ZUKOW-GOLDRING

11:40  Gibsonian and quantum mechanical perspectives on the evolution of perceptual systems
                Ernő E. KADAR, Robert E. SHAW, and Oded M. FLASCHER

12:00  Discussion

12:10  Lunch and Poster Session

14:00 - 15:40  Amodal Perceptual Organization of Spoken Events
                Robert E. REMEZ

14:00  Effects of listener expectation on eye movement behavior during audiovisual perception
                Eric VATHIOUTIS-BATESON, Inge-Marie EIGST, Samio YANO, Kevin G. MUNHALL, and Philip RUBIN

14:20  Read my lips: Where? How? When? And ... so What?
                Christian BENOT, Christian ABBY, Marie-Agnès CATHARD, Thierry GUARD-MAGNIÉ, and Tahar LALOUCHE
14:40  Modality matters
       Lynne E. Bernstein

15:00  What role may amodal event informatin play in infants' perception
       of non-native versus native phonetic contrasts
       Catherine T. Best

15:20  Articulatory dynamics specified across modalities
       Lawrence D. Rosenblum

15:40  Coffee

16:00 - 17:40  Haptic Information for Spatial Perception

       Patrick A. Case

16:10  Left-Right differences in object holding and motor skills in 6-month-old
       infants
       Arlette Streen

16:30  Spatial perception by dynamic touch
       Christopher C. Pagano

16:50  Distant touch: Space, haptics and orientation
       John Kennedy, Giuseppe Mirabella, and Akalya Navaratnam

17:10  Haptic distal spatial perception mediated by strings
       Patrick A. Case

17:30  Discussion

17:40  Break break

18:00 - 19:00  Poster Session

20:00  Conference Banquet at the "Vieille Charité"

       Vieille Charité
       2, rue de la Vieille Charité
       13007 Marseille
       +33 56.28.38-

I

THE ACQUISITION OF PERCEPTUO-MOTOR SKILLS:
THE CURRENT STATUS OF ECOLOGICAL DEVELOPMENTAL THEORIES

SYMPOSIUM ORGANIZERS

Audrey L. H. van der Meer\textsuperscript{a} and Blandine Bril\textsuperscript{b}
\textsuperscript{a} Department of Psychology, University of Edinburgh, Edinburgh, Scotland, U.K.
\textsuperscript{b} Cognition et Contexte, Ecole des Hautes Etudes en Sciences Sociales, Paris, France.

Within the ecological approach to development, two main approaches can be
discerned. First, there is the direct perception approach to perceptual learning
and development. A good example of research from within this approach is
affordance research (e.g., Adolph, Eppler, & Gibson, 1994), examining whether
infants can detect what the environment offers them in terms of their own
changing action capabilities. Second, there is the dynamical systems approach
to development (e.g., Smith & Thelen, 1994). This approach exploits dynamical
tools and concepts in an attempt to give a comprehensive description of
developmental phenomena.

Whatever the approach, the context of action is central to the analysis. Here
context includes "natural" components such as gravity as well as material or social
elements of the environment. An emphasis is made on the way these elements will shape
human experience since the very beginning of life: it offers possibilities for actions.
Learning, then, is viewed as the exploration of the perceptuo-motor workspace resulting
from the interplay between the environment, the task, and the organism (Newell, 1986).

A study of the recent literature enables one to conclude that infant research from
an ecological perspective is a very active area - one of the growth points within
ecological psychology (Gordon, 1989). However, some dissatisfied voices can now be
heard from within our own camp (Michaels & Beek, 1994). Is it enough for ecological
developmentalists to report that infants do as well as adults on a whole range of tasks?
Are the possibilities of pattern dynamics overestimated with respect to developmental
problems?

This symposium invites developmentalists to share their views on the state of
ekological theories of development and learning, to reflect on what we should aim to
achieve over the next few years, and to back up their ideas with novel empirical data.