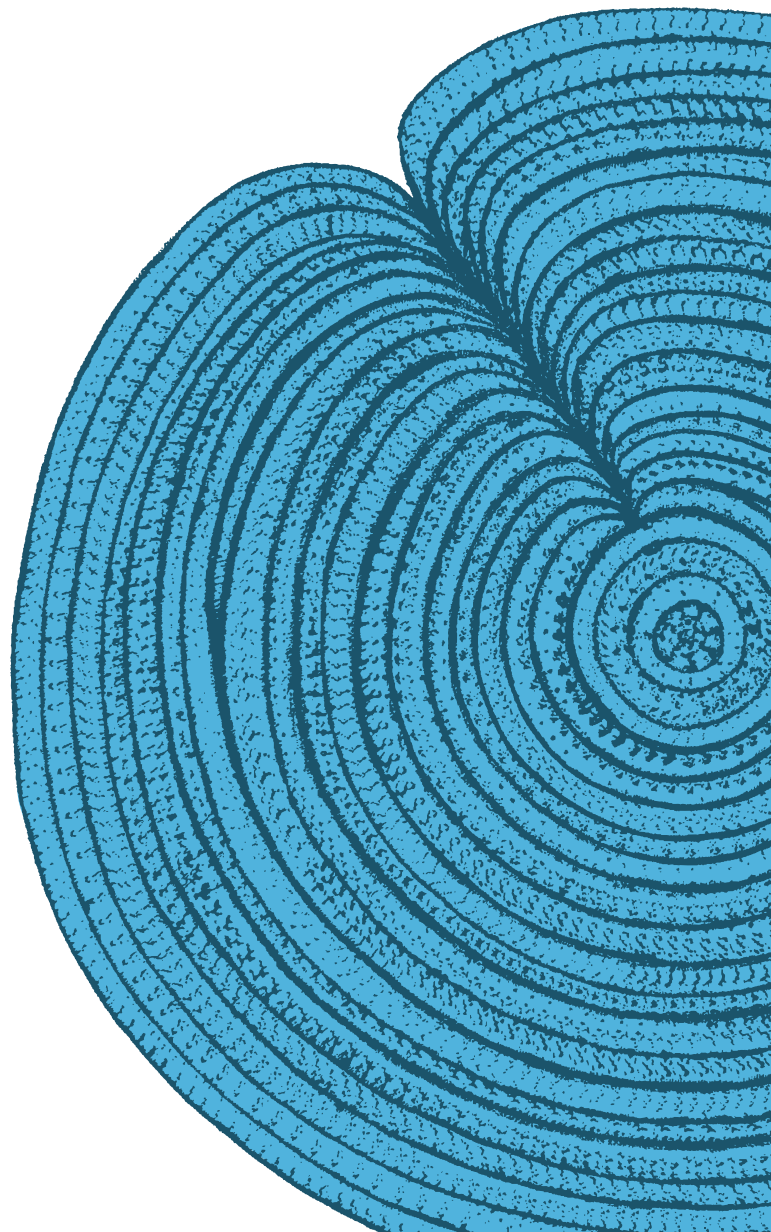




UNIVERSITÀ
DEGLI STUDI DI TRIESTE
Department of Life Sciences
Psychology Unit *Gaetano Kanizsa*

TSPC2016

Proceedings of the
Trieste Symposium on Perception and Cognition
November 4



edited by
Paolo Bernardis
Carlo Fantoni
Walter Gerbino

EUT

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Preface

This book of proceedings collects the abstracts of talks and posters presented at the *Trieste Symposium on Perception and Cognition 2016*, organized by the Psychology Unit of the Department of Life Sciences, University of Trieste, and held at campus on the 4th of November.

This year TSPC2016 did also include the 24th annual *Kanizsa Lecture*, which has been delivered, as a special event fitting into the long tradition of *Kanizsa Lectures* opened in 1993 by Irvin Rock (see The Kanizsa Lectures list).

The TSPC2016 book of proceedings opens with the abstracts of the 24th Kanizsa Lecture held by the 2016 invited speaker W. Tecumseh Fitch, Department of Cognitive Biology, University of Vienna, Austria.

A second contribution of the TSPC2016 book includes abstracts from the "Roundtable Comparative Perception: A tribute to Professor Mario Zanforlin" (Organizer: Cinzia Chiandetti). The roundtable featured 5 key speakers – Osvaldo Da Pos, Yegor Malashichev, Christian Agrillo, Daniel Osorio, and Meta Virant-Doberlet - in the field of comparative perception and cognition honouring the memory of Professor Mario Zanforlin, who has recently passed away. The invited speakers show that the comparative perspective with which to look at various phenomena that has been Mario's approach will continue to prompt works in the broad fields of perception and cognition. Osvaldo Da Pos, worked on aggressive behaviour and steroid hormones in human and non-human species but later he focused on perception and specifically on colour perception. His main contribution has been the application of the model of transparency to chromatic colours. Within this roundtable, he witnessed the everlasting bond between Padova and Trieste and discussed about the relationship between Stimuli and Context in perception. Yegor Malashichev, works on lateralization and his contribution follows the guidelines of the true European ethological school: observing an organism in its own environment. From

reptiles to whales, from frogs to kangaroos he showed that humans aren't all that unique and claimed about Mother-infant lateral biases in humans and wild animals: conservatism of the phenomenon and its benefits for fitness. Christian Agrillo, after studying biological motion in the chicks, has specialized on numerical representation running experiments with different animal species and recently has started to investigate visual illusion in animals. Christian presented his latest studies in monkeys and fish. Daniel Osorio, studies colour vision and object recognition by observing different animal species from butterflies to primates. He has also investigated symmetry perception in the chick with two influential Mario's students, Lucia Regolin and Giorgio Vallortigara. Daniel is involved in animal welfare and is part of a team writing the guidelines for the use of cephalopods. In his talk, he provides insights on How Cuttlefish see objects. Meta Virant-Doberlet studies vibrational communication in insects. She investigates this intriguing, and unsuspected, signalling trying to respond to all 4 Tinbergen's questions and has presented "A day in a life of a bug linguist".

The third part of the volume collects abstracts of talks and posters presented at regular oral and poster sessions of TSPC2016.

Each abstract published in the proceedings has been evaluated by an anonymous expert reviewer and by the organizers. The list of anonymous reviewers who supported the editorial process is reported in the next section.

About 54 active participants gathered at TSPC2016, coming from Italy and other European countries (Serbia 7, Germany 2, Greece 1, Slovenia 1, Hungary 1). It featured 9 talks and 45 posters. The book of proceedings includes written reports of all talks, and 40 out of 45 posters. Several areas of cognitive science were covered, including: perception (talks 4, 6, 8; posters 4, 5, 17, 24, 27, 29, 36); mindfulness (talk 1); action and perception (talk 6; posters 4, 19, 22, 30, 34); attention (posters 7, 29); memory (talk 3, 7; posters); learning (poster 17); development (posters 14, 23, 25, 31, 33); language (poster 13, 39); problem solving and reasoning (poster 20); personality (posters 11, 18, 25); decision-

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making (poster 20); concepts and categorization (talks 2; poster 4, 16, 33, 38, 39); social cognition (talk 4, 5; posters 6, 9, 40); animal cognition (talk 9; posters 1, 3, 8, 15, 36, 37); neuropsychology (poster 2, 10, 12, 22, 26, 28, 35, 38); rehabilitation (posters 22); developmental disorders (posters 2, 5, 10, 12); applied psychology (poster 7, 21, 28, 30, 32, 34); executive processes: monitoring, inhibitory control (posters 7, 14, 18, 23, 35);

In terms of disciplines, contributions included modelling, behavioral experiments with humans and animals, cognitive neuroscience, linguistics, philosophy, and vision.

We thank all authors who submitted an abstract to be included in the proceedings, and the reviewers who supported the editorial process with their fast and constructive reactions.

Finally, for their institutional and financial support to TSPC2016 we thank the Department of Life Sciences and the PhD program in Neural and Cognitive Sciences of the University of Trieste.

Paolo Bernardis
Carlo Fantoni
Walter Gerbino
organizers and editors

and Cinzia Chiandetti

Acknowledgments

A special thank to all reviewers of the TSPC 2016 abstracts:

Agostino Accardo, Tiziano Agostini, Christian Agrillo, Marina Aiello, Nicola Bruno, Cristina Burani, Corrado Cavallero, Cinzia Chiandetti, Claudio de'Sperati, Lisa Di Blas, Donatella Ferrante, Giovanni Galfano, Piero Giulianini, Michele Grassi, Giampiero Leanza, Paola Lorenzon, Francesco Marcatto, Mauro Murgia, Maria Chiara Passolunghi, Barbara Penolazzi, Valentian Piccoli, Marta Stragà, Antonio Vallesi.

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Listen carefully! The importance of auditory cues in anticipating volleyball serves

Fabrizio Sors¹, Mauro Murgia¹, Franziska Lath^{1,2}, Alexandra Bader^{1,3}, Tiziano Agostini¹

¹ Psychology Unit “Gaetano Kanizsa”, Department of Life Sciences, University of Trieste, Italy; ² Department of Psychology, University of Erfurt, Germany ³ Department of Psychology, University of Innsbruck, Austria.

Keywords: early information, auditory information, visual information, anticipation, volleyball serves

Previous research highlighted that early visual information has a key role in ball sports, as its correct interpretation fosters accurate predictions concerning the ball motion [1,2]. Other studies revealed that auditory information can provide important cues in various sport situations [3,4]. The present study combines these two lines of research with the aim to investigate the role of early auditory and visual information in anticipating volleyball serves.

To this purpose, several overhand serves were audio- and video-recorded from the perspective of a defence player. The recordings were edited to create two kinds of stimuli – auditory and visual – lasting 1250 ms (1000 ms before the hand-ball impact and 250 ms after it). 36 participants were recruited for the experiment: 22 were novices to volleyball, while 14 were amateur volleyball players. Their task was to predict the landing zone of the serves – i.e. near the net, in the middle of the court, or near its end – relying either on the auditory information (Audio condition) or on the visual information (Video condition). A within subjects design was used, with the two conditions carried out in a counterbalanced order among participants.

As concerns response accuracy, an independent samples t-test revealed no significant difference between the two groups of participants. As a consequence, the comparison between the two experimental conditions was conducted without making a distinction between novices and experts; in this regard, a one sample t-test highlighted that participants were significantly more accurate in the Audio condition than in the Video condition. As concerns response times, no significant difference was observed neither between groups, nor between conditions.

These outcomes suggest that the early auditory information associated with volleyball serves would provide more salient cues than the respective visual information for predicting the landing zone of the serves themselves. Future studies should further investigate in this direction, considering also other sport situations, to better understand the contribution of auditory and visual information in anticipating the ball motion; future developments in this field would be useful from both a research perspective and an applied one.

In conclusion, the anatomical findings support the hypothesis of a shared neural subsystem for natural food and living things, and transformed food and non-living things. In turn, these results provide evidence that food concepts may be organized according to sensory/functional properties.

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