



ICSC 2021

Cognition and Action in a Plurality of Spaces

Rome, 13-17 September 2021

Detailed Conference Program

(as of September 7, 2021)

Monday, September 13

12:30 – 13:00

OPENING SESSION

Chair: *Marta Olivetti Belardinelli* (ICSC Presidential Board, Sapienza University of Rome)

Official greetings by:

Giuseppe Ciccarone (Vice Rector of the Sapienza University of Rome)

Klaus Mainzer (President of the European Academy of Sciences and Arts)

Pierluigi Zoccolotti (Director of the Dept. of Psychology, Sapienza University of Rome)

Antonino Raffone (Director of ECONA, Sapienza University of Rome)

13:00 - 14:00

KEYNOTE LECTURE 1:

Marko Nardini: *Merging familiar and new senses to perceive and act in space*

Chair: *Anna Belardinelli*

14:00 - 14:20

BREAK

14:20 - 15:40	SYMPOSIUM 1 <i>Behaviors and collective spatial representations in interactive situations</i> Convenors: <i>Guelton & Quesnot</i>	SYMPOSIUM 2 <i>Navigation and environment representation: Personality and individual differences</i> Convenors: <i>Meneghetti & Pazzaglia</i>	TALK SESSION 1 <i>Language & gesture 1</i> Chair: <i>Ansay</i>
14:20 - 14:40	#90 - <i>Bunel</i> : Construction of a geographic database for analysis of collective mental maps	#176 - <i>Saxon et al.</i> : Individual differences in spatial memory for a large-scale virtual environment	#139 - <i>Kwarteng & Ansay</i> : Spatial cognition in L2: Prepositional use among Akan-English bilinguals
14:40 - 15:00	#75 - <i>Guelton</i> : Analytical means of spatial representation resulting from collective interactions	#28 - <i>van der Ham</i> : The impact of stereotypes and self-assessment on navigation performance	#144 - <i>Yin & Li</i> : Syllable discrimination based on voice onset time modulates McGurk effect
15:00 - 15:20	#179 - <i>Quesnot</i> : Impact of social interactions on the acquisition of spatial knowledge	#32 - <i>Miola et al.</i> : Spatial learning and gender: Cognitive, motivational, and social factors	#155 - <i>Duroisin & Mengue-Topio</i> : Evolution of spatial decentration and language comprehension among young children
15:20 - 15:40	#118 - <i>Pasala</i> : Panorama and vista of street contribute perceptual salience in collective maps	#101- <i>He et al.</i> : Does GPS use impair navigation skills? Insights from a cohort analysis	#183 - <i>Sun.</i> : Time as space metaphors in Chinese sign language
15:40 - 16:00	BREAK		
16:00 - 17:00	KEYNOTE LECTURE 2: Barry Smith: <i>Making spaces: The natural, cultural, cognitive and social niches of human activity</i> Chair: <i>Barbara Tversky</i>		
17:00 - 17:20	BREAK		
17:20 - 19:20	SYMPOSIUM 3 <i>Cognition and Action in Virtual Spaces</i> Convenors: <i>Antonucci & Iosa</i>	TALK SESSION 2 <i>Representation & memory 1</i> Chair: <i>Bucciarelli</i>	TALK SESSION 3 <i>Time & number 1</i> Chair: <i>Skov-Petersen</i>
17:20 - 17:40	#208 - <i>Tieri</i> : Virtual bodies in virtual spaces	#15 - <i>Iani et al.</i> : Spatial reasoning benefits from motor imagery	#72 - <i>Skov-Petersen</i> : On temporal vs. spatial scale
17:40 - 18:00	#205 - <i>Roduta et al.</i> : The impact of virtual space in a simulation to enhance student performance	#89 - <i>Soyer</i> : Attention-based integration of visual context in place representations	#113 - <i>Zhou & Bao</i> : Duration perception in portraits with different perspectives
18:00 - 18:20	#203 - <i>Tosoni et al.</i> : Macro-affordance: Extrapersonal distance and locomotion in virtual environments	#106 - <i>Tinella et al.</i> : Spatial skills mediate cognitive efficiency and fitness-to-drive	#114 - <i>Wang et al.</i> : Sequential effect in duration reproduction is from both perception and response

18:20 - 18:40	#207 - Maselli et al.: Catching virtual throws: Assessing predictive skills in sensorimotor interactions	#145 - Chamberlain et al.: New metrics and analytical tools for measuring spatial memory	#123 - Zhao et al.: Subjective waiting time: Better use progress bars or rings?
18:40 - 19:00	#198 - Iosa et al.: The Michelangelo effect: Art modifies spatial trajectories on virtual canvases	#184 - Marre et al.: Situated cognition, mental imagery and memory strategies	#149 - Zhang & Wang: Subjective time dilation in space: Challenging current theories
19:00 - 19:20			#153 - Mu et al.: Transition zone: The influence of pause duration in temporal reproduction

Tuesday, September 14

13:00 - 14:00	KEYNOTE LECTURE 3: Toru Ishikawa: <i>Spatial thinking, cognitive mapping, and spatial awareness</i> Chair: Santa Iachini
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14:00 - 14:20	BREAK
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14:20 - 15:40	SYMPOSIUM 4 <i>From individual to social spaces: Low- and high-level mechanisms of interpersonal Interactions</i> Convenors: Fini & Era	TALK SESSION 4 <i>Representation & memory 2</i> Chair: Lasaponara	POSTER SESSION 1 <i>Attention, perception, & emotion</i> Presentation time for all posters: 14:20 – 15:40
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14:20 - 14:40	#66 - Michalland: Haptics, lateralized affordances and object interactions during the pandemic	#47 - Orti et al.: Aging effects on spatial switching ability from allocentric to egocentric	#4 - Angioletti et al.: To touch or not to touch? EEG correlates of an in-store sensory experience
			#30 - Izadifar: Subjective time perception in musical imagery: An fMRI study on musicians
			#36 - Gyorkő & Kiraly: Early development of visuo-spatial ability and correlations with ADHD
			#64 - Casado Palacios et al.: Audio-tactile dynamic multisensory integration in sighted and blind individuals

14:40 - 15:00

#147 - Fusaro & Lisi:
The influence of sexual orientation on nonverbal interactions

#62 - Sbordone, et al.:
The role of spatio-temporal components in egocentric and allocentric encoding

#74 - Oztok & Gulhan:
Effects of complexity and naturalness of pocket park designs on user preference

#77 - Rapuano et al.:
Spaces for relax, spaces for recharge: Effect of urban spaces on people's mood

#79 - Iachini et al.:
The influence of sounds on individuals' mood

#129 - Tong & Fan:
The eccentricity effect on endogenous attention

15:00 - 15:20

#124 - Bardi:
From Theory of Mind to social interaction: The case of implicit processes

#126 - Edgar et al.:
Do you see what I see? Exploring differing awareness of the same situation

#158 - Mauti:
The relationship between allocentric neglect and extinction in stroke patients

#169 Salsano et al.:
Probing the spatial bias in hemispatial neglect using a landmark task and fMRI

#182 - Maezawa & Kawahara:
Improved ability of object detection using echolocation by a repetitive task

15:20 - 15:40

#159 - Bolis:
'I interact therefore I am' - Human becoming in and through social interaction

#161 - Mengue-Topio & Duroisin:
Spatial perspective taking in children: The effect of oblique orientation

#186 - Somma et al.:
Pseudoneglect in children and young adults evaluated by means of the E-BTT

#193 - Chiarella et al.:
Aesthetic appreciation in art context. Human vs. AI authorship

#202 - Szewczyk et al.:
The effect of spatio-temporal sequential learning on covert selective attention

15:40 - 16:00

BREAK

16:00 - 17:00

KEYNOTE LECTURE 4:
Anthony Chemero: *Skill and the perception of space*
Chair: Thomas Hünefeldt

17:00 - 17:20

BREAK

17:20 - 19:20	SYMPOSIUM 5 <i>Conceptualizing musical features through spatial cognition</i> Convenor: <i>Besada</i>	TALK SESSION 5 <i>Body & action 1</i> Chair: <i>Farné</i>	TALK SESSION 6 <i>Attention & perception 1</i> Chair: <i>Santangelo</i>
17:20 - 17:40	#99 - <i>Andreatta et al.</i> : Conceptualizing chord relationships via spatial visualization within the Tonnetz	#69 - <i>Buck & Bodenheimer</i> : Peripersonal space in virtual reality	#14 - <i>Peviani et al.</i> : Training-induced contraction of visual space is retinotopic, not spatiotopic
17:40 - 18:00	#48 - <i>Besada & Vidal Badía</i> : Confronting composers' visual imagery with listeners' experience of music	#96 - <i>Chakraborty et al.</i> : Using mobile augmented reality for spatial cognition	#68 - <i>Szubielska et al.</i> : Adults' spatial scaling across different perceptual conditions
18:00 - 18:20	#60 - <i>Pagán Cánovas & Besada</i> : Contemporary composers twisting timelines: A cognitive approach	#100 - <i>Riecke et al.</i> : Simultaneous locomotion and interaction in VR: Walking > Leaning > Controller	#107 - <i>Lafitte et al.</i> : Left spatial neglect encompasses impaired verticality perception
18:20 - 18:40	#91 - <i>Bisesi</i> : Modeling perceived distance among music collections: A machine-learning approach	#151 - <i>Riecke et al.</i> : HyperJump: Merging teleporting and continuous VR locomotion into one paradigm	#152 - <i>Kostov</i> : Contrast polarity as a factor in an attentional account of spatial compatibility
18:40 - 19:00	#93 - <i>Legrain et al.</i> : Spatial mental anchorpoints during identification of notes' pitch by musicians	#197 - <i>Chumaira et al.</i> : Review on techniques to measure spatial affordances in VR environment	#154 - <i>Ganczarek et al.</i> : Does linear perspective accurately depict how we perceive distance?
19:00 - 19:20		#210 - <i>Valzolgher et al.</i> : Reaching to sounds to improve spatial hearing: A visual virtual reality approach	#177 - <i>Contemori et al.</i> : An online tool for the detection of pathological spatial asymmetries

Wednesday, September 15

13:00 - 14:00	KEYNOTE LECTURE 5: Kate Jeffery: <i>How environmental movement constraints shape the neural code for space</i> Chair: <i>Antonino Raffone</i>
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14:00 - 14:20 **BREAK**

14:20 - 15:40

SYMPOSIUM 6

The body as the link between mind and space: A philosophical and neuroscientific discourse to understand the role of architecture in cognitive and emotional processing

Convenor: *Vecchiato*

SYMPOSIUM 7

Cognitive maps for abstract information: From working memory to long-term memory

Convenors: *Fias & van Dijck*

POSTER SESSION 2

Action, motion, & navigation

Presentation time for all posters: 14:20 – 15:40

14:20 - 14:40

#17 - Papale:

A walk in the visual neuroscience: Feedbacks and lessons learned

#39 - Cristoforetti et al.:

Mapping serial order in working memory onto mental space

#9 - Fernandez-Mendez et al.:

Role of visuospatial and motor abilities for predicting geometry in 2-3 graders

#11 - Fronda et al.:

Cognitive processing during a green hotel exploration: EEG evidence

#22 - Meneghetti et al.:

Orienteering practice: How does it relate to visuospatial individual factors?

#34 - Argiuolo et al.:

Analysis of spatial behaviour by the means of Euclidean distances

14:40 - 15:00

#19 - Robinson:

Architecture as situated poetics

#82 - Bottini:

Knowledge across reference frames: Cognitive maps and image spaces

#50 - Ferrara et al.:

Action and defence function of the reaching space: Effect of humans and objects

#55 - Cassioli et al.:

A co-bot quality cycle: Neuroscientific view on fatigue and executive functions

#63 - Dutriaux et al.:

Neural correlates of spatial reorientation and egocentric localization in memory

15:00 - 15:20

#6 - Djebbara:

Neurophenomenology for architecture: An embodied and enactive inference approach

#37 - Salvaggio:

Visualizing mathematics: Insights from eye-tracking studies

#67 - Michalland et al.:

Movement and haptic anticipation: Clues to facilitate human-robot interaction?

#108 - Diaine et al.:

How to measure writing and drawing tilts after stroke: Methodological approach

#141 - Chazelle et al.:

Do people see themselves as fatter when an artificial intelligence says so?

#171 - Garcia-Sterling:

Applying a healing process to hospital wayfinding systems during COVID-19

15:20 - 15:40

#18 - Presti et al.:
Linking architecture and emotions by the recognition of virtual body expressions

#40 - Rinaldi:
Spatial representations recovered from language

#187 - Dubois et al.:
How do our demographics shape our trajectories?
#188 - Luyat et al.:
A decrease of the tool effect in older adults
#195 - Petrarca et al.:
Updating SOT with a Dynamic Oriented Integrated Rehabilitative (DORIS) system

15:40 - 16:00

BREAK

16:00 - 17:00

KEYNOTE LECTURE 6:
Alexander Stahn:
Brains in space – Effects of extreme environments on brain plasticity and spatial cognition
Chair: *Wolfgang Plastino*

17:00 - 17:20

BREAK

17:20 - 19:20

SYMPOSIUM 8
Time windows in cognitive processing
Convenors: *Bao & Poppel*

TALK SESSION 7
Body & action 2
Chair: *Hirtle*

TALK SESSION 8
Orientation & wayfinding 1
Chair: *Minear*

17:20 - 17:40

#119 - Liu et al.:
Distinct timing mechanisms in static and dynamic visual rhythm synchronization

#29 - Esposito et al.:
Audiomotor contributions to the audiospatial calibration of the horizontal plane

#5 - Nenna et al.:
Cognitive-motor multitasking during outdoor spatial navigation in AR

17:40 - 18:00

#137 - Chen et al.:
The 3 second time window in birdsongs: Beyond defining a territory

#45 - Dupin:
Effect of age and space distortions on spatial body representation

#51 - Grison et al.:
Challenging automated landmarks-based route-guidance with field testing

18:00 - 18:20

#134 - Wang & Shi:
Two distinct representational spaces of duration in sensory and motor timing

#58 - Miklashevsky & Fischer:
Motor simulation in sentence-picture verification: Beyond Ostarek et al. (2019)

#70 - Minear & Sensibaugh:
Individual differences in navigating a threatening virtual environment

18:20 - 18:40

#102 - Zhang & Lin:
Holistic processing in temporal order perception of tones

#110 - Lafitte et al.:
What are the determinants of tilted writing and drawing after stroke?

#132 - Rasse et al.:
Emotional landmarks and spatial learning in virtual environmental space

18:40 - 19:00

#112 - Zeng:
A potential mechanism of simultaneity perception

#173 - Vitali et al.:
Is non-nutritive sucking a tool for blind infants to map space? An EEG study

#174 - Adhikari et al.:
Embodied VR flying improves spatial orientation while reducing cybersickness

19:00 - 19:20

#167 - Cai & Lin:
Multisensory temporal order judgements: More salient effect of spatial attention

#214 - Tversky:
Mind in motion: How action shapes thought

#211 - Corrias et al.:
Virtual Kitchen 2.0: Comparing different tutorials approaches in VR training

Thursday, September 16

13:00 - 14:00

KEYNOTE LECTURE 7:

Olaf Blanke: *Bodily self-consciousness and egocentric space*

Chair: *Albert Postma*

14:00 - 14:20

BREAK

14:20 - 15:40

SYMPOSIUM 9

The perception of space around us: From behavioral to simulated data

Convenors: *Simione & Gigliotta*

TALK SESSION 9

Architecture & design

Chair: *Bhatt*

POSTER SESSION 3

Representation, memory, & language

Presentation time for all posters: 14:20 – 15:40

14:20 - 14:40

#189 - Simione & Chiarella:

From self to others, through the peripersonal space: How it is built compassion

#92 - Yanaş & Gül:

Investigating embodied simulation experience in perception of architectural space

#8 - Hofmann & Jansen:

The relation of mental rotation and postural stability

#13 - Jost & Jansen:

Visual representation as a link between manual and mental rotation

#38 - Palmer:

Separating sagittal and transverse in egocentric frame of reference

14:40 - 15:00

#201 - Gigliotta et al.:

A neurorobotic model of stress-induced pseudoneglect

#142 - Satyavarapu:

The role of culture in shaping the visual-heritage of South Indian temple cities

#41 - Zucchelli et al.:

Agoraphobia disorder and spatial working memory

#56 - Kasek et al.:

Impacts of COVID-19 control measures on metacognition and spatial cognition

#81 - Rahe:

Effects of different kind of sports on (perceived) mental rotation performance

15:00 - 15:20

#192 - Chiarella & Simione:

Does sensory memory depend on visuospatial attention?

#162 - Kondyli & Bhatt:

Cognitive modelling of visuospatial complexity in the streetscape

#97 - Cerqueglini:

Egocentric, axial information in allocentric representations in aş-Şâniş Arabic

#131 - Fan et al.:

Multiple temporal reference frames: Evidence from a temporal reproduction task

#133 - Meinhardt et al.:

On a taxonomy of early visual-spatial abilities in testing versus training

15:20 - 15:40

#199 - *Ognibene, et al.*:
From learning to search to finding what others miss: Developing a theory of mind

#170 - *Emo et al.*:
Linking the design of university learning spaces to students' experience

#157 - *Škilters & Zariņa*:
Meaning of a shape as a result of previous knowledge and axial rotation

#178 - *Hartmann et al.*:
Horizontal and vertical spatial associations of serial order in working memory

#209 - *Nair et al.*:
Event segmentation through the lens of multimodal interaction

15:40 - 16:00

BREAK

16:00 - 17:00

KEYNOTE LECTURE 8:
Anjan Chatterjee: *The neuroaesthetics of architectural spaces*
Chair: *Joanna Ganczarek*

17:00 - 17:20

BREAK

17:20 - 18:20

TALK SESSION 10
Time & number 2
Chair: *Myachikov*

TALK SESSION 11
Body & action 3
Chair: *Škilters*

TALK SESSION 12
Orientation & wayfinding 2
Chair: *Nitsche*

17:20 - 17:40

#53 - *Cantarella & Silvia Bisiacchi*
Temporal perception: How does multisensory integration occur?

#33 - *Magenes et al.*:
From action to spatial cognition: The rehabilitation program based on SaM method

#59 - *Kocabiyik & Kan-Kilic*:
City exploration through the eyes of the visually impaired

17:40 - 18:00

#84 - *Yang*:
Mental spaces in random number generation

#116 - *Montani et al.*:
Action performance in shaping conscious behavior

#76 - *Zanchi et al.*:
Idiosyncratic benefits in multisensory spatial navigation

18:00 - 18:20

#127 - *Lhuillier & Gyselinck*:
Speed knowledge shrink geographical representations: Space-time discontinuity

#128 - *Josa et al.*:
Playing immersive videogames leads to estimate indoor 3D space as more accessible

#146 - *Fink & Giudice*:
Vibrotactile maps for promoting spatial understanding in autonomous vehicles

	SYMPOSIUM 10 <i>Spatial attention performance assessed by the ANT on children and young adults: Its association with age, intelligence, and impulsiveness</i> Convenors: <i>Saracini & Lucero</i>	TALK SESSION 11 (continued)	TALK SESSION 12 (continued)
18:20 - 18:40	#140 - <i>Casagrande et al.</i> : Assessing the attentional networks in children: A child version of the ANTI	#163 - <i>Zariņa et al.</i> : Impact of symmetry type and axial direction on interface layout preference	#160 - <i>Nitsche</i> : Sonic environments: Localization of sounds and re-localization of their hearer
18:40 - 19:00	#148 - <i>Lucero et al.</i> : wSMT, Intelligence, and attentional performance on children: Preliminary results	#172 - <i>Ranzini et al.</i> : Influence of hand action on the processing of symbolic numbers	#191 - <i>Mastrodonato & Camarda</i> : The role of orientation within complex historical urban contexts in Italy
19:00 - 19:20	#130 - <i>Saracini et al.</i> : Impulsiveness influence on attentional networks in young adults	#200 - <i>Calafiore et al.</i> : Humans select informative views efficiently to recognise actions	#204 - <i>Fragueiro et al.</i> : Travel in the physical and mental spaces of navigation and memory

Friday, September 17

13:00 - 14:00	KEYNOTE LECTURE 9: Annamaria Berti: <i>From embodying tool to embodying alien limb: Sensorymotor modulation of personal and extrapersonal space</i> Chair: <i>Fabrizio Doricchi</i>		
14:00 - 14:20	BREAK		
	SYMPOSIUM 11 <i>Multisensory space and action: State-of-the-art research and future perspectives of voluntary and defensive motor behavior in peripersonal space</i> Convenors: <i>Brozzoli, Farnè & Patanè</i>	TALK SESSION 13 <i>Attention & perception 2</i> Chair: <i>Esposito</i>	TALK SESSION 14 <i>Representation & memory 3</i> Chair: <i>Chiarella</i>
14:20 - 14:40	#181 - <i>Bonini</i> : Space-constrained cortical processing of objects and actions in the monkey	#7 - <i>Crivelli et al.</i> : The empowerment effect of centesimal prismatic lenses on attention regulation	#16 - <i>Riggsby</i> : Evidence for cognitive spatial models from ancient Roman land-measurement
14:40 - 15:00	#175 - <i>Taghizadeh et al.</i> : Task-dependent ego- and allocentric encoding in monkey frontoparietal cortex	#10 - <i>Malyshevskaya et al.</i> : Horizontal spatial biases in time-related words: A line bisection study	#44 - <i>Muffato et al.</i> : The practice of speleology: What is its impact on environment representation?
15:00 - 15:20	#185 - <i>Patanè et al.</i> :	#87 - <i>Bedini et al.</i> :	#61 - <i>Gautheron et al.</i> :

	Action-dependent modulations of multisensory perception in peripersonal space	The anatomical pathways underlying spatial versus non-spatial attention	Paradigm constraints on moral decision space: A model fit to mouse-tracking data
15:20 - 15:40	<i>#156 - Zanini et al.:</i> Associative fear learning in hand-centered coordinates	<i>#117 - Luo et al.:</i> The effect of spatial attention on temporal order perception in the visual field	<i>#196 - Harding:</i> Spatial ability, scientific reasoning, and graphing skills in kinematics

15:40 - 16:00

BREAK

16:00 - 17:40

<p>SYMPOSIUM 12 <i>The space around the body and its relationship with sensorimotor and social factors: Current questions (and some answers) for future directions</i> Convenors: <i>Farnè, Hadj-Bouziane, Iachini & Ruggiero</i></p>	<p>SYMPOSIUM 13 <i>The development of a multisensory sense of space</i> Convenors: <i>Bollini & Gori</i></p>	<p>SYMPOSIUM 14 <i>On the modelling of landmarks</i> Convenors: <i>Nuhn & Timpf</i></p>
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16:00 - 16:20

#71 - Hadj-Bouziane & Dureux:
Behavioral, physiological and neural signatures of PPS in social contexts

#54 - Gori:
The multisensory child development and rehabilitative technology

#43 - Nuhn & Timpf:
Modelling of landmark dimensions

16:20 - 16:40

#57 - Candini et al.:
Physiological correlates of social space in childhood autism spectrum disorders

#49 - Senna et al.:
Spatial recalibration in cataract-treated individuals

#42 - Albrecht & von Stülpnagel:
Effects of landmark position and approach perspective on route retrieval

16:40 - 17:00

#180 - Coello & Cartaud:
The role of peripersonal space in social interactions

#31 - Martolini et al.:
Development of spatial coding skills in visually impaired and blind children

#52 - Hamburger:
Understanding landmark-based wayfinding: On the search of core factors

17:00 - 17:20

#150 - Patanè et al.:
Brain activations for objects near two persons' hands after motor interactions

#120 - Orioli et al.:
Visual-tactile expectations and peripersonal space representations in infancy

#98 - Schwering & Krukar:
A landmark's role in spatial learning depends on its spatial extent

17:20 - 17:40

#65 - Ruggiero & Iachini:
Defensive function towards social-emotional stimuli approaching our bod

#46 - Valori & Farroni:
Self-location in immersive virtual spaces: A developmental clinical perspective

17:40 - 18:00

Conference closing:
Open plenary discussion and comments by participants

18:00

END OF THE CONFERENCE