Conclusions.— Creative initiatives in a developed country can significantly increase access and capacity in primary care.

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Exploring development and psychopathology using robotics

Mo-S-141

Contribution to social aspects of cognition, with implementation in signal supporting systems and intelligent robots, capable to interact with children in the real-world

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The most significant aspects of a theory of cognition allowing for formal definitions and quantitative assessments in humans and machines will be briefly reviewed (MCS). Continuity will be shown between collective (“group”) behavior at macro-scale (society; multiple human and/or robot entities) and at micro-scale (subunits of a brain, of an artificial cognitive agent; thinking). For modeling a group, the notions of a common culture and of a shared communication channel emerge. Experience will be reported in the creation of our “Piaget” environment for programming and developing real-world cooperating robots for domestic applications, with successful results obtained in signal-rich, world-level benchmarks. This paves the way for new potential benefits: measuring cognitive and cooperating capabilities in children and helping them develop their abilities by robot-assisted learning in the real world. Gradually, like in constructivism, a standard for social development should now be formally defined. Simultaneously, the cognitive components of the new proposals should be made operational by implementing them in robots (cognitics). Benefits can be expected in three domains: experimental validation, understanding of children nature, and robot-assistance in correcting and/or coping with selected disorders.

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Mo-S-142


A. Esposito

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In a daily body–body interaction, emotional expressions plays a vital role in creating social linkages, producing cultural exchanges, influencing relationships and communicating experiences. Emotional information is transmitted and perceived simultaneously through verbal (the semantic content of a message) and nonverbal (facial expressions, vocal expressions, gestures, paralinguistic information) communicative tools and contacts and interactions are highly affected by the way this information is communicated/perceived by/from the address/ amongst. A long research tradition has tended to investigate emotions and related perceptual cues to infer them, through separate investigations into three fundamental expressive domains, i.e. facial expressions, speech and body movements. In a cross cultural perspective, the present talk will discuss on the need to investigate the role that multimodality and cultural specificity might play in communicating emotional feelings.

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Mo-S-143

Imitation game between a human and a robot for the motor actions learning

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We have recently proposed an online recognition framework to allow a robot to learn human facial expressions without explicit labeling (i.e. “sadness”, “happiness”). This model is motivated by the fact that if babies employ a sensory motor architecture for the recognition of facial expressions then the parents must imitate the baby facial expression to allow the on-line learning. We conducted several experiments showing that a simple neural network model can both control the robot’s head and learn human facial expressions during an imitation task. Our current works are devoted to the generalization of this model to gesture recognition for the analysis of perception-action architectures. Experiments will be conducted to evaluate the impact of these architectures on psycho-pathology (children with autism).

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At risk mental state: what’s new?

Mo-S-144

Psychopathological outcome in young adult help-seekers: Influence of cannabis intake

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Cannabis consumption is associated with an increased risk of psychosis, with the influence of genetic factors. The interference with other risk factors for schizophrenia such as developmental anomalies or psychomotor delay has not been systematically studied. Longitudinal studies with a follow-up of transition to psychosis offer the best paradigm for studying this question. We have launched a longitudinal study aiming at studying the influence of Cannabis intake on the outcome of adolescent and young adult Help Seekers. All participants were screened using CAARMS for the assessment of prodromal symptoms and of the criteria for Ultra High Risk (UHR) of psychosis and first episode psychosis (FEP). They were all screened for biological dosage of cannabis, genotyping, substance use history, psychomotor development and cognitive assessment. Three groups of help-seeker individuals are compared: FEP, UHR and non psychotic, non at risk. We will present preliminary results based on the 120 first participants.

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Mo-S-145

Altered medial temporal activation related to local glutamate levels in subjects prodromal signs of psychosis

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People with a history of prodromal psychosis present lower glutamate levels in the lateral ventricles compared to controls. We aimed to test the hypothesis that, in subjects with prodromal signs of psychosis, the medial temporal lobe differs from controls by lower glutamate levels. This was studied using [18F]-DOPA PET in 42 subjects at risk of psychosis and 8 healthy controls. There were no differences in age, sex or handedness between the groups. Subjects at risk had lower glutamate levels in the right (dorsal and ventral) medial temporal lobe compared to controls, but not in the left or posterior medial temporal lobes.

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Mo-S-146


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Background.—Medial temporal cortical dysfunction and perturbed glutamatergic neurotransmission are regarded as fundamental pathophysiological features of psychosis and animal models suggest that they are interrelated.

Methods.—We used a combination of functional magnetic resonance imaging and magnetic resonance spectroscopy to investigate the relationship between medial temporal activation during a memory task and local glutamate levels in two individuals at ultra high-risk for psychosis and 14 healthy volunteers.

Results.—We observed a significant between-group difference in the coupling of medial temporal activation with local glutamate levels.

Conclusions.—In individuals at ultra high-risk for psychosis, medial temporal dysfunction seemed related to a loss of the normal relationship with local glutamate levels. This study provides the first evidence that links medial temporal dysfunction with the central glutamate system in humans and is consistent with evidence that drugs that modulate glutamatergic transmission might be useful in the treatment of psychosis.

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Mo-S-146
Structural and functional imaging correlates of liability to psychosis
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The onset of psychosis is preceded by a prodromal phase characterized by functional decline and subtle prodromal symptoms, which include attenuated psychotic phenomena and a decline of cognitive and socio-occupational function. Preventive interventions during this phase are of great interest because of the impressive clinical benefits. However, available clinical criteria employed to define an at-risk mental state for psychosis have relatively low validity and specificity. Consequently, there is an urgent need of reliable neurocognitive markers linked to the pathophysiological mechanisms that underlie schizophrenia. Neuroimaging techniques have rapidly developed into a powerful tool in psychiatry as they provide an unprecedented opportunity for the investigation of brain structure and function. Neuroimaging studies of the prodromal phases of psychosis have the potentials to identify core structural and functional markers of an impending risk to psychosis and to clarify the dynamic changes underlying transition to psychosis and to address significant correlations between brain structure and function or prodromal psychopathology. Additionally, neurocognitive and multimodal methods can address the key role played by neurotransmitters such as dopamine and glutamate during the psychosis onset.

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Mo-S-147
Key determinants of longer duration of untreated psychosis in adolescents
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Introduction.—Duration of Untreated Psychosis (DUP) has been found to be two times higher in adolescent (< age 18) than adult-onset psychosis in four worldwide publications. Recent UK policy set a target of reducing DUP (<3 months). This is the first study comparing DUP in adolescents and adults in the UK, and first investigation of the determinants of DUP amongst adolescents.

Method.—First episode psychosis cases referred to Early Intervention Psychosis teams in London from 2004 to 2009. Standardised clinical assessments carried out by Teams.

Results.—Adolescents showed significantly greater median DUP (179 days) than adults (81 days, P<0.005). Younger age of onset, lifetime cannabis use and White ethnicity predicted significant delay in treatment uptake for adolescents.

Discussion.—These findings suggest that treatment delay may be a critical problem in adolescents in the UK and other countries. Health professionals need to be trained to manage psychosis at early stages.

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Mo-S-148
Influence of age and gender on protective factors for depression and suicidal behaviors
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The presentation is based on secondary analyses of a psychometric study on protective factors among 283 adolescents aged 14 to 17 years in Quebec French-speaking schools completed in 2007. The protective factors analyzed were Reasons for living (Reasons for Living Inventory for Adolescents), Spirituality (Spirituality Scale) and Coping (Adolescent Coping Scale). Three risk factors were also added namely Life events (Life Events Questionnaire), Depression, (Beck Depression Inventory-II) and Hopelessness (Beck Hopelessness Scale). A theoretical model of the interaction between protective and risk factors will be presented. Descriptive, univariate and multiple regression analyses on the influence of protective and risk factors on depression and suicidal ideas will be presented for each gender (120 girls and 163 boys) and each age group (167 youths aged 14 and 15 years and 116 aged 16 and 17 years). Clinical implications of the results will be discussed.

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Mo-S-149
Protective factors and borderline personality disorder in adolescence
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Among a cohort of French suicidal 11–17 year-olds youths recruited in a prospective study, adolescents with traits of Borderline Personality Disorder were identified with the Abbreviated-Diagnostic Interview for Borderlines (Guilé et al., 2009). Analyses indicated that BPD symptoms were negatively correlated with CGAS (P<0.05) and significantly correlated with the number of suicide attempts (P<0.01) and the depressive symptoms assessed independently with the Beck depression Inventory (P<0.001). With respect to the profile of risk and protective factors as evaluated by the Adolescent Coping Scale (Frydenberg et Lewis, 1993), the Spirituality Scale (Delaney et al., 2005) and the Reasons For Living Inventory for Adolescents RFL-A (Osman et al., 1998), those BPD adolescents were discriminated from non BPD through their coping profile. This study has enabled the identification of targets for psychoeducative and treating programs.

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