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"IULIU HATIEGANU" UNIVERSITY
OF MEDICINE AND PHARMACY

DOCTORAL SCHOOL NEUROSCIENCE

PROGRAM

2018-2019 | SECTION 1

4 DECEMBER, 2018
"MULTIMEDIA" AUDITORIUM, "IULIU HATIEGANU" UMF CLUJ-NAPOCA
8 VICTOR BABES STREET | CLUJ-NAPOCA | ROMANIA

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Co-Chair EAN Scientific Panel Neurorehabilitation

Chairman of EAN Communication and Liaison Committee

President of the European Federation of NeuroRehabilitation Societies (EFNR)

Past President of the Romanian Society of Neurology

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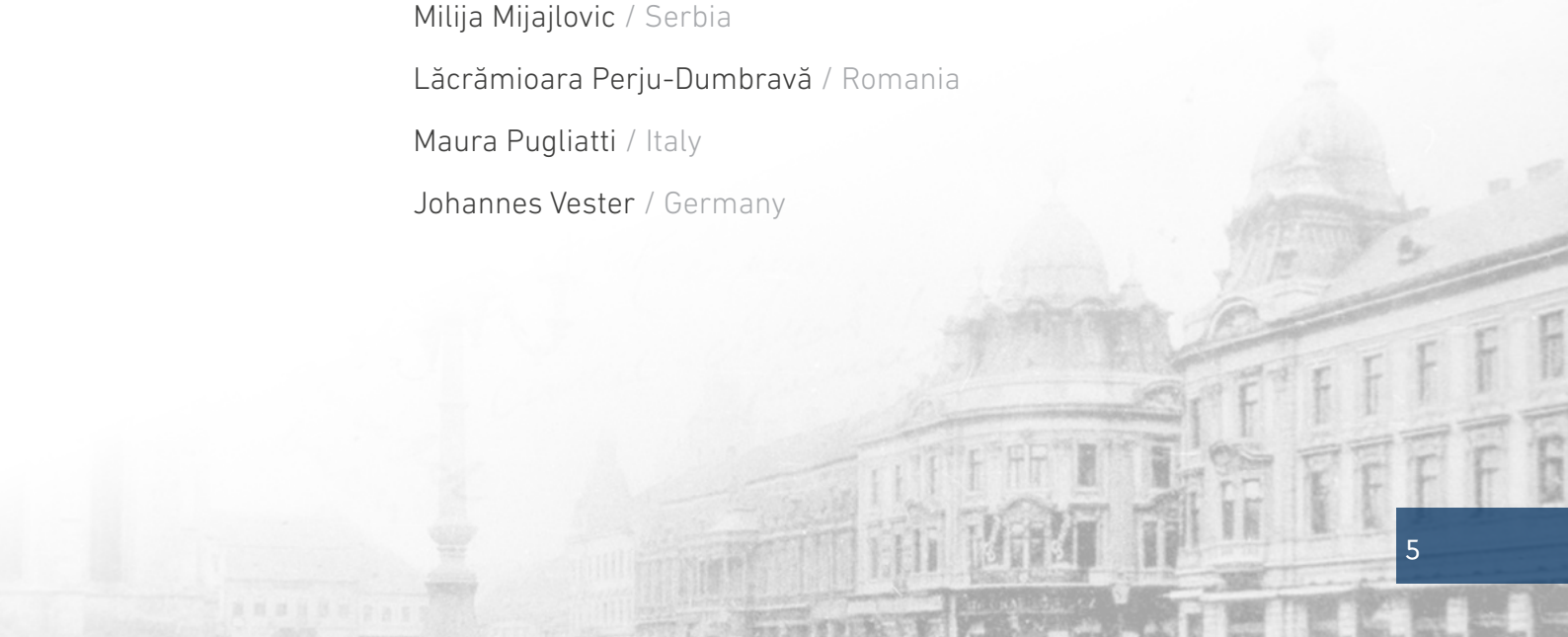

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COURSE PROGRAM

COURSE PROGRAM

DECEMBER 4TH, 2018

"MULTIMEDIA" AUDITORIUM, "IULIU HATIEGANU" UMF CLUJ-NAPOCA

8 VICTOR BABES STREET | CLUJ-NAPOCA | ROMANIA

09:50 – 10:00	Welcome Address
10:00 – 10:45	Antonio Federico / Italy Genetic leucodystrophies as a model of oligodendrocyte dysfunction
10:45 – 11:30	Antonio Federico / Italy Syndromes of mineral accumulation into the brain: clinical and pathogenetic aspects
11:30 – 12:15	Francesca Federico / Italy Role of social components in cognitive development: implication for typical development and cognitive rehabilitation

INTERNATIONAL GUEST LECTURERS

ANTONIO FEDERICO
ITALY

Prof. Antonio Federico, born in Polla (Sa) on the 25.08.48, from 1990 is full professor of Neurology at the University of Siena , Director of the Unit Clinical Neurology and Neurometabolic Disease.

He was Director of the Department of Neurological, Neurosurgical and Behavioural Sciences, University of Siena (2002-2008).

He received the degree in Medicine and specialization in Nervous and Mental Diseases, summa cum laude, at the University of Naples in 1972 and 1975 respectively. He received the Lepetit Award for the best degree dissertation in 1972.

His biological training was in the Institute of Biochemistry as student and after in Physiology of the University of Naples, and in the Centre de Neurochimie of CNRS, in Strasbourg, directed by prof. Mandel where he worked in the years 1973-75. He also collaborated with many international research groups, in different countries where he spent in the past years some times: in Montreal (Prof. Andermann, Karpati and Shoudgbridge), in London (dr A. Harding and prof. Morgan-Hughes), in Toronto (dr.Robinson), in Bonn (prof. von Bergmann) , in Paris (dr.Baumann), in Baltimore (proff. Moser and Naidu), in Oxford (prof. Matthews), etc. His clinical formation was made at the Medical School of the University of Naples, in the Dept, Neurology, and after in Siena, where he moved on 1980 with his mentor, prof. G.C. Guazzi. Associated professor in Neurology in 1982, since 1990 he is full professor of Neurology, Medical School, University of Siena. In 2013, he received honoris causa degree in Medicine at University Carol Davila, Bucharest, Rumania.

In the years 1990-96 he was Secretary of the Italian Society of Neurology. In the years 2006-08 was President of the Italian Society of Neurology.

He coordinated the Study Group on Clinical Neurogenetics of the Italian Society of Neurology.

He has been referee for projects evaluation in the area of Orphan drugs and Orphan diseases for Biomed Projects from EU, for MURST, CNR and Istituto Superiore di Sanità, and other national and international funding agencies, etc.

He is member of the Second Opinion Group of the American Leucodistrophy Association.

Associated editor of Neurological Sciences , Springer-Verlag Editor from 2000. From 2012, he is Editor-in Chief. He is author of more than 500 article quoted by Pubmed. He is author of a chapter on Cerebrotendinous Xanthomatosis, Vinken and Bruyn Edts, Handbook of Clincal Neurology, vol 49, Neurodystrophies and Neurolipidoses. On the book McKusick's Mendelian Inheritance in Man,. Ed.1992, Catalog of Autosomal Dominant and Recessive Phenotypes he is cited for 3 different diseases. He was editor of the book Late Onset Neurometabolic diseases (A.Federico, K. Suzuki and N.Baumann Edts), Karger 1991, and many other books from Italian and international Publishing Companies. Recently he published (2015) Manuale di Neurologia Pratica and Neurologia and Assistenza infermieristica, for students.

His main field of interest is related to neurometabolic, neurodegenerative and rare diseases, investigated from a genetic, metabolic, neuroimaging and clinical point of vue.

Summary of the academic involvements: - Director of the Section Neurological Sciences, Dept Neurological , Neurosurgical and Behavioural Sciences (2000-2012) - Director of the Research Center for the Diagnosis, Therapy and Prevention of the Neurohandicap and Rare Neurological Diseases, until the 2010 - Vice-Dine of the Medical School, University of Siena (2003-2006) - Director of the Postgraduate School of Neurology, University of Siena, from 2006 up to 2014. - Director of the PhD School in Cognitive and Neurological Sciences, University of Siena (from 2000 up to date) - Coordinator of the Section of the Univ. Siena of the PhD Program Neurosciences, Univ. Florence. - Research delegate for the Dept Medicine, Surgery and Neurosciences (2013-2018) - Vice-Rector of the University of Siena, from 1st april 2016 to november 2017.

Medical Involvements – Until November 2018 (date of retirement) Director of the OU Clinical Neurology and Neurometabolic Diseases, University Hospital of Siena Medical School. –He is still Director of the Regional Reference Center for Rare Diseases - Regional Coordinator of the Network for Rare Neurological Diseases, Tuscany Region. - Member of several Ministry of Health and Regional Committees National and International Commitments - President of the Italian Society of Neurology (2009-11) - Italian delegate to the World Federation of Neurology - Italian Delegate to the European Union of Medical Specialists (Section Neurology) - Italian Delegate and Chairman of the Neuromediterraneum Forum and President - Consultive Member of the European Brain Council - Editor – in – Chief of Neurological Sciences, Springer Verlag Editor. He is in the Editorial Board of many national and international journals. - Member of the American Panel United Leucodystrophies. - Member of the Scientific Committee of AISM (Associazione Italiana Sclerosi Multipla) - Chairman of the Scientific Committee of the European Academy of Neurology (2014-2018) - Chairman of Neuromediterraneum Forum - Co-Chairman of Research group of WFN Migration Neurology.

Member of the Scientific Societies: - Società Italiana di Neurologia (Past Secretary, President, Past-President and Member of the Committee) - Society for the Inborn Errors of Metabolism - Italian Association of Neuropathology - SINDEM (Italian Association of Dementias) - Italian Association for Parkinson's disease - Italian Association of Neurogeriatrics (Member of the Scientific Committee) - Italian Stroke Forum - European Academy of Neurology (Member of the Board and Chairman of the Scientific Committee) - American Academy of Neurology - World Federation of Neurology (Co-Chair Section of Migration Neurology) - Neuromediterraneum Forum (President).

FRANCESCA FEDERICO
ITALY

WORKING EXPERIENCE

from december 30th 2008 to date - Confirmed researcher on developmental psychology	Department of Social and Developmental Psychology, Sapienza, University of Rome
2014-to date	Collaboration with clinical center for Learning disabilities and intellectual disabilities, Department of Social and Developmental Psychology, Sapienza, University of Rome
2014- to date	Lecturer of the course of "Cognitive Developmental Psychology" (6 credits) at the under graduate degree of Educational Science, Sapienza University of Rome.
2014 to date	Lecturer of the course "Developmental Psychology" at the undergraduate degree in Healthcare Assistance Science, Centro studi SanGiovanni di Dio (1 credit), Sapienza, University of Rome
2014 to date	Lecturer of the course "Developmental Psychology" at the undergraduate degree in Healthcare Assistance Science, ASL RM B (1 credit), Sapienza, University of Rome
2009 -2013	Lecturer of the course "Developmental Psychology" at the undergraduate degree in Social Work (Class) (4 credits), Sapienza University of Rome
2008-2010	Trainer for teachers of communal nests in the town of Rome
2008-2011	Lecturer of Laboratory of communication at the undergraduate degree of Psychological Intervention during Development and at socio-educational Institution, Sapienza, University of Rome
2008-2011	lecturer of Media and Communication Psychology at the Science and Technique of Developmental Psychology, Sapienza, University of Rome
2007-2008	Lecturer of psychology of Communication at the under graduate degree of Psychological Models during Development and aging, Sapienza, University of Rome
AA 2005-2006	Advisor of Developmetal Psychology at Sat2000 channel on the issues: "brain development during adolescence", Theory of mind development", memory development.
AA 2002-2004	Lecturer of Phisiological Psychology, Sapienza, University of Rome.
	Lecturer of general Psychology, Sapienza, University of Rome

ISTRUZIONE E FORMAZIONE

2009, Octobre 16	PhD thesis “Role of cholinergic system on Spatial Memory: an annimal model”
AA. 2004-2008	European PhD on Applied neurological Science, University of Siena
2003-2006	Clinical Training on Bioenergetic Analysis, SIAB
January 2005- March 2005	Visiting student al FMRIB John Ratchliff Hospital di Oxford
2004 December 10	PhD Thesis “Spatial procedural memory: analysis in different experimental models.
AA. 2001-2004	PhD in Psychobiology and Psychopharmacology, Sapienza, University of Rome
Agosto 2001	Visiting student at Comlumbia University, Presbiterian Medical Centre, New York
A.A. 1995-2001	BA and MA in General and Experimental Psychology , (Mark: 110/100; summa cum laude) Faculty of Psychology, Sapienza, University of Rome.

INTERNATIONAL PUBBLICATIONS

•Federico F, Marotta A, Martella D, Casagrande M (2016). Development in Cognitive Control of Social Processing: evidence from the Attention Network Test. British Journal of Developmental Psychology (in press) Br J Dev Psychol. 2017 Jun;35(2):169-185. doi: 10.1111/bjdp.12154. Epub 2016 Aug 4.

•Laghi F, Federico F, Lonigro A, Levanto S, Ferraro M, Baumgartner E, Baiocco R. (2015). Peer and Teacher-Selected Peer Buddies for Adolescents With Autism Spectrum Disorders: The Role of Social, Emotional, and Mentalizing Abilities. J Psychol. 2016;150(4):469-84. doi: 10.1080/00223980.2015.1087375. Epub 2015 Sep 23

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• De Bartolo P, Mandolesi L, Federico F, Foti F, Cutuli D, Gelfo F, Petrosini L.Cerebellar involvement in cognitive flexibility. Neurobiol Learn Mem. 2009 Oct;92(3):310-7.

• Mandolesi L., De Bartolo P., Foti F., Gelfo F., Federico F.,Leggio M. G. and Petrosini L. (2008), Environmental enrichment provides a cognitive reserve to be spent in the case of brain lesion. J Alzheimers Dis. 2008 Sep;15(1):11-28.

•Cutuli D, Foti F, Mandolesi L, Bartolo PD, Gelfo F, Federico F, Petrosini L.(2008),Cognitive performance of healthy young rats following chronic donepezil administration. Psychopharmacology (Berl). 2008 May;197(4):661-73. doi: 10.1007/s00213-008-1084-0. Epub 2008 Feb 29

• Mandolesi L, Leggio MG, Spirito F, Federico F, Petrosini L. (2007) Is the cerebellum involved in the visuo-locomotor associative learning?Behav Brain Res. Nov 22;184(1):47-56.

•D. Menghini, F. Federico, M. di Paola, M. Bozzali,L. Petrosini C. Caltagirone & S.Vicari (2007). Relationship between gray matter brain anormalities. Journal of Intellectual Disability Research 51 (9) , 656

• Matteis M., Caltagirone C., Troisi E., Federico F., Silvestrini M., Petrosini L. (2006) , Changes of cerebral blood flow velocity during gestures with or without meaning. A functional transcranial doppler study. Eur J Neurol. Jan;13(1):24-9.

• Federico F, Leggio MG, Mandolesi L, Petrosini L. (2006) The NMDA receptor antagonist CGS 19755 disrupts recovery following cerebellar lesions. Restor Neurol Neurosci.;24(1):1-7.

• Leggio M. G., Federico F., Neri P., Graziano A., Mandolesi L. and Petrosini L. (2006) NMDA receptor activity in learning spatial procedural strategies: I. The influence of hippocampal lesions. Brain Res Bull. Oct 16;70(4-6):347-55.

• Federico F., Leggio M. G., Neri P., Mandolesi L. and Petrosini L. (2006) NMDA receptor activity in learning spatial procedural strategies. II. the influence of cerebellar lesions .Brain Res Bull. Oct 16;70(4-6):356-67.

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• Leggio MG, Mandolesi L, Federico F, Gelfo F, Petrosini L (2005) Environmental enrichment promotes improved spatial abilities and enhanced dendritic growth in the rat. Behav Brain Res. May 20.

• E.Cannoni, A. Di Norcia, F. Federico (2014)The bicycle drawing test: mechanical reasoning and/or visual-spatial abilities? RASSEGNA DI PSICOLOGIA, n. 3, vol. XXXI,

• F. Laghi, R. Baiocco, A. Perduto, F. Federico, M. D'Alessio (2011). Modelli identificativi proposti in tv e biange eating disorder in adolescenza. PSICHIATRIA DELL'INFANZIA E DELL'ADOLESCENZA, vol. 78, p. 433-448,

• F. FEDERICO, RAFFONE A, DALESSIO M (2010). Sviluppo delle funzioni di "mantenimento" e di "manipolazione" nella memoria di lavoro.. PSICHIATRIA DELL'INFANZIA E DELL'ADOLESCENZA, vol. 77, p. 48-77,

• Federico F. (2008). Effetti del consumo di alcolici sul sistema nervoso degli adolescenti. Giornale di Neuropsicofarmacologia, anno XXX, N1, pg 9-18.

DAFIN F. MUREȘANU
ROMANIA

Professor of Neurology, Senior Neurologist, Chairman of the Neurosciences Department, Faculty of Medicine, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Past President of the Romanian Society of Neurology, President of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), member of the Academy of Medical Sciences, Romania, secretary of its Cluj Branch. He is member of 16 scientific international societies (being member of the American Neurological Association (ANA) - Fellow of ANA (FANA) since 2012) and 10 national ones, being part of the executive board of most of these societies. Professor Dafin F. Muresanu is a specialist in Leadership and Management of Research and Health Care Systems (specialization in Management and Leadership, Arthur Anderson Institute, Illinois, USA, 1998 and several international courses and training stages in Neurology, research, management and leadership). Professor Dafin F. Muresanu is coordinator in international educational programs of European Master (i.e. European Master in Stroke Medicine, University of Krems), organizer and co-organizer of many educational projects: European and international schools and courses (International School of Neurology, European Stroke Organisation summer School, Danubian Neurological Society Teaching Courses, Seminars - Department of Neurosciences, European Teaching Courses on Neurorehabilitation) and scientific events: congresses, conferences, symposia (International Congresses of the Society for the Study of Neuroprotection and Neuroplasticity (SSNN), International Association of Neurorestoratology (IANR) & Global College for Neuroprotection and Neuroregeneration (GCNN) Conferences, Vascular Dementia Congresses (VaD), World Congresses on Controversies in Neurology (CONy), Danube Society Neurology Congresses, World Academy for Multidisciplinary Neurotraumatolgy (AMN) Congresses, Congresses of European Society for Clinical Neuropharmacology, European Congresses of Neurorehabilitation). His activity includes involvement in many national and international clinical studies and research projects, over 400 scientific participations as "invited speaker" in national and international scientific events, a significant portfolio of scientific articles (157 papers indexed on Web of Science-ISI, H-index: 17) as well as contributions in monographs and books published by prestigious international publishing houses. Prof. Dr. Dafin F. Muresanu has been honoured with: the University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca, Faculty of Medicine, "Iuliu Hatieganu Great Award 2016" for the best educational project in the last five years; the Academy of Romanian Scientists, "Carol Davila Award for Medical Sciences / 2011", for the contribution to the Neurosurgery book "Tratat de Neurochirurgie" (vol.2), Editura Medicala, Bucuresti, 2011; the Faculty of Medicine, University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj-Napoca "Octavian Fodor Award" for the best scientific activity of the year 2010 and the 2009 Romanian Academy "Gheorghe Marinescu Award" for advanced contributions in Neuroprotection and Neuroplasticity.

ABSTRACTS

SYNDROMES OF MINERAL ACCUMULATION INTO THE BRAIN: CLINICAL AND PATHOGENETIC ASPECTS

ANTONIO FEDERICO
Dept Medicine, Surgery and Neurosciences, Medical School, University of Siena, Italy.
Chair of EAN TF Rare Neurologic Diseases

We will report several clinical conditions in which the main characteristic is the mineral accumulation into the brain, mainly in basal nuclei , clinically characterized by different severity of parkinsonism, mental deterioration, psychiatric abnormalities.

Mineral accumulation is due to cooper, in Wilson's disease, a well known epatolenticular degeneration, iron in a recently described syndrome with dystonia/parkinsonism and in patothenate kinase deficiency (Hallervorden-Spatz disease), calcium in several mitochondrial diseases, in the so called Fahr syndrome, now better known as Primary familial brain calcification.

We will describe the different clinical presentations, the pathogenetic aspects and the recent data on the molecular diagnosis.

We will also report several other more rare conditions, useful for the differential diagnosis and we will describe a diagnostic algorithm for diagnosis .

GENETIC LEUCODYSTROPHIES AS A MODEL OF OLIGODENDROCYTE DYSFUNCTION

ANTONIO FEDERICO
Dept Medicine, Surgery and Neurosciences, Medical School, University of Siena, Italy.
Chair of EAN TF Rare Neurologic Diseases

Leukodystrophies are a group of orphan genetic diseases that primarily affect the white matter (WM) of the brain. Glial cells play a major role in the structural, metabolic and trophic support of axons.

Diversity of the genetically determined defects that interfere with glial cell functions explain the large heterogeneity of leucodystrophies that may be classified:

- According to neuropathology (staining: ortochromatic, metachromatic, sudanophilic; site of demyelination: sparing U fibres,etc; associated findings)
- According with clinical aspects (peripheral nerve, muscle, eye involvement, macrocephaly, tendinous xanthomas, premature aging,, skin and bone changes, endocrine involvement: adrenocortical or ovarian insufficiency, diabetes, etc)
- According to biochemical abnormalities
- According to molecular genetic abnormalities.

We will report the main well known forms (Adrenoleucodystrophy, Metachromatic Leucodystrophy, Krabbe Disease) and some rarer conditions as Vanishing White Matter disease, Vacuolating Leucodystrophy, Alexander disease, Spheroid leukoencephalopathy, etc, and also some recently identified forms, describing the clinical findings for clinical suspicion and the pathogenetic mechanisms.

ROLE OF SOCIAL COMPONENTS IN COGNITIVE DEVELOPMENT: IMPLICATION FOR TYPICAL DEVELOPMENT AND COGNITIVE REHABILITATION

FRANCESCA FEDERICO
Aggregate Professor and Researcher M-psi/04 Developmental Psychology
Department of Social and Developmental Psychology
Faculty of Medicine and Psychology, Sapienza, University of Rome, Italy

In the recent years many research focused the attention on the relationship between social behavior and cognitive functions, with particular interest to executive functions.

Executive functions (generally referred to executive function and cognitive control) are a set of cognitive processes necessary for the cognitive control of behavior. They: select and successfully monitor behaviors able to facilitate the obtaining of chosen goals. Executive functions include basic cognitive processes as attentional control, cognitive inhibition, inhibitory control, working memory, and cognitive flexibility. Higher order executive functions require the simultaneous use of multiple basic executive functions and include planning and fluid intelligence (e.g., reasoning and problem solving) (Diamond, 2013).

Recent functional neuroimaging studies have shown that two parts of the prefrontal cortex, the anterior cingulate cortex (ACC) and the dorsolateral prefrontal cortex (DLPFC), are thought to be particularly important for performing this task.

In addition to executive functions, there is evidence that the prefrontal cortex is involved in several other high level cognitive capacities, including self-awareness (Ochsner, 2004) and theory of mind (Frith & Frith, 2003), that is the ability to understand other minds by attributing mental states such as beliefs, desires and intentions to other people (Frith, 2001).

Between socio-cognitive skill social attention is one of the most important. Humans and other animals pay attention to other members of their groups to acquire valuable social information about them, including information about their identity, dominance, fertility, emotions, and likely intent. This process seems to proceed through two distinct but integrated pathways: an ancestral, subcortical pathway that mediates fast orienting to animate objects and faces; and a more derived pathway involving cortical orienting circuits that mediate nuanced and context-dependent social attention.

According to the attention network approach, attention is better explained in terms of three functionally and neuroanatomically distinct networks — alerting, orienting, and executive attention. An important question is whether social information influences the efficiency of these networks. Using the same structure as the Attentional Network Test (ANT), we developed a variant of this test to examine attentional effects in response to stimuli with and without social-cognitive content. Fish, drawings or photographs of faces looking to the left or right were used as target stimuli. Results collected from twenty-four university students showed that photographs of faces positively affected attentional orienting and executive control, whereas reduced the efficiency of alerting, as compared to both face drawings and fish. These results support the status of human faces as a special class of visual stimuli for the human attentional systems (Federico et al., 2013).

In a subsequent study sixty-six children (three groups of 6, 8, and 10 years of age) performed three variants of the original Attention Network Task (ANT) (Rueda et al., 2004), using fish, schematic, or real faces looking to the left or right as target and flanker stimuli. Results showed an improvement from 6 to 8 and 10 years of age in reaction time (RT) and accuracy, together with an improvement of executive control and a decrement in alerting. These developmental changes were not unique to social stimuli, and no differences were observed

between social and no-social variants of the ANT. However, independently from the age of the children, a real face positively affected the executive control (as indexed by RTs) as compared to both a schematic face and a fish. All these data suggest that attentional networks are still developing from 6 to 10 years of age and underline the importance of face information in modulating the efficiency of executive control (Federico et al., 2016).

Finally, using a lifespan perspective we used variants of this test to examine the age-related decline of attentional effects in response to stimuli with and without social-cognitive content. Three groups of younger, middle-aged, and older participants performed three variants of the original ANT, using fish, drawings or photographs of faces looking to the left or right as target and flanker stimuli. The results showed that both executive attention and alerting were more resistant to the age-related decline when photographs of faces were used as stimuli, and that orienting attention scores showed a progressive increase with age in presence of both drawings and photographs of faces. These findings underline the importance of social information in modulating and contrasting the age-related decline and support the status of human faces as a special class of visual stimuli for the human attentional systems (Federico 2018, under evaluation).

Taken together all these data, it is clear that social components affect the voluntary processes of attention: in particular orienting and conflict. Small sample of ADHD children showed that even if attention is impaired, social stimuli can improve orienting and conflict.

In this perspective social stimuli can be used to rehabilitate attention deficit with ad hoc programs in children and in adults.

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