



BOOK OF ABSTRACTS

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July 2, 3, 10, 11

Bioethics and Consciousness Bioetica e Stati di Coscienza



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CONSCIOUSNESS: MEDICINE AND NEUROSCIENCE. LA COSCIENZA: MEDICINA E NEUROSCIENZA

1. Neurophysiology of consciousness. Neurofisiologia della coscienza | AMIR RAZ



Amir Raz is Professor of Psychological and Brain Sciences and Founding Director of the Brain Institute at Chapman University, and Professor in the Department(s) of Psychiatry (Psychology, Neurology and Neurosurgery) at McGill University (Canada). His research spans the cognitive neuroscience of attention, placebos, and altered planes of consciousness. Dr. Raz is a world leader in unlocking the brain substrates of attention and consciousness. Dr. Raz is Professor of Psychiatry, Neurology & Neurosurgery, and Psychology; Senior Investigator in the Lady Davis Institute for Medical Research of the Jewish General Hospital; and a member of the Montreal Neurological Institute. He heads both the Cognitive Neuroscience Laboratory at McGill University and the Clinical Neuroscience and Applied Cognition Laboratory at the Institute for Community and Family Psychiatry. Former member of the McGill Board of Governors and Editor-in-Chief of a specialty peer-reviewed journal, Professor Raz combines cutting-edge science and trailblazing research with community outreach, science teaching, and interdisciplinary education in the health and psychological sciences. With peer reviewed publications in journals such as Nature, Nature Reviews Neuroscience, The Lancet, and Proceedings of the National Academy of Sciences, Professor Raz has received multiple accolades, ranging from a Young Investigator Award from the National Alliance for Research on Schizophrenia and Depression and the American Psychological Association's Early Career Award to Fellow of the Society for Clinical and Experimental Hypnosis and Honorary Fellow of the Golden Key Society. Dr. Raz's research interests span the neural and psychological substrates of attention, suggestion, placebos, and self-regulation. A former magician and musician, he also conducts research into the cognitive neuroscience of deception, ownership, altered consciousness, and atypical cognition. Using imaging of the living human brain, genetics, and other techniques, his research brings together basic and clinical science.

Whereas modern brain imaging often demands holding body positions incongruent with everyday life, posture governs both neural activity and cognitive performance. Humans commonly perform while upright; yet, many neuroimaging methodologies require participants to remain motionless and adhere to non-ecological comportments within a confined space. This inconsistency between ecological postures and imaging constraints undermines the transferability and generalizability of many a neuroimaging assay. Here we highlight the influence of posture on brain function and

behavior. Specifically, we challenge the tacit assumption that brain processes and cognitive performance are comparable across a spectrum of positions. We provide an integrative synthesis regarding the increasingly prominent influence of imaging postures on autonomic function, mental capacity, sensory thresholds, and neural activity. Arguing that neuroimagers and cognitive scientists could benefit from considering the influence posture wields on both general functioning and brain activity, we examine existing imaging technologies and the potential of portable and versatile imaging devices (e.g., functional near infrared spectroscopy). Finally, we discuss ways that accounting for posture may help unveil the complex brain processes of everyday cognition (Robert T. Thibault and Amir Raz. Imaging Posture Veils Neural Signals. Front. Hum. Neurosci., 21 October 2016 | <https://doi.org/10.3389/fnhum.2016.00520>).

2. Neuropathology of consciousness and disability. Neuropatologia della coscienza e disabilità | MATILDE LEONARDI



Matilde Leonardi. Neurologist, paediatrician, neonatologist, child neurologist. Specialized in Bioethics. As Director of Unit at IRCCS National Neurological Institute Besta is developing and carrying out research projects related to neurology, chronic diseases and employment, disability, ageing, public health, ICF (WHO's International Classification of Functioning, Disability and Health) and WHO-DAS 2.0, neurorehabilitation and burden of neurological disorders. Her activity in the field of disorders of consciousness allows her team to have one of the worldwide largest epidemiological database on this type of patients. She is a WHO expert on disability and ageing, co-chair of the WHO-FIC (Family of International Classifications) Functioning and Disability Reference Group- FDRG and Director of the Italian WHO Collaborating Centre Research Branch. Co-ordinator and partner of several, EU- and non EU-funded research projects. Since 2001 and she has been coordinator of EU Projects in FP6, FP7, Horizon2020: MHADIE, MURINET, COURAGE in EUROPE, PATHWAYS and partner in PARADISE, MARATONE ATHLOS, CHRODIS Plus, EMPOWER. Dr. Leonardi is consultant on public health, UNCRPD monitoring and disability policy development for several European and extra European Governments. Expert for the European Commission on public health, ageing, disability and neurosciences. Professor on annual contracts of Neuropsychiatric Aspects of Disability and member since 2007 of the Board of Directors of the Bioethics Centre at the Catholic University of Milan. In 2014 passed the national evaluation as Associate Professor of Neurology and in 2015 as Associate as well as Full Professor of Rehabilitation. From 2010 to 2013 appointed by the Italian Government as President of the Scientific Committee of the National Observatory on Disability, monitoring UNCRPD. In November 2011 appointed as Corresponding member of the Pontificia Academia Pro Vita. Awarded in December 2019 upon nomination of Ministry of Health as Excellence of Research between the 100 Italian Excellences. Nominated FEAN Fellow of the European Academy of Neurology in September 2020. Elected Member at Large of WFNR World Federation of Neurorehabilitation in October 2020. From June 2020 nominated Co chair WHO NeuroCovid Forum—essential neurological services Group and member of Neuro Covid Global Research Coalition. Author of more than 270 scientific publications.

This lesson defines what altered states of consciousness are from a clinical perspective and what disability means for a possible clinical approaches to these patients. We can distinguish the main neuropathological states of consciousness and classify them (to differentiate others pathological states of consciousness from the LiS (Locked-in-Syndrome).

The definition of the word disability has been debated for the UN Convention on the Rights of Persons with Disabilities, and the final draft will soon be submitted to the UN General Assembly for approval. WHO has been mandated to produce a world report on disability and rehabilitation by 2009 to collate the best evidence about the prevalence, distribution, and trends of disability and recommend action. In many countries, the 2010 census round will probably include questions about disability, as recommended by the UN Population Division. In the next few years, countries around the globe will begin to implement national health and disability surveys. Such data, coupled with global demographic changes, will mean increased attention to non-fatal health outcomes, such as the disability associated with ageing. Therefore, we believe that a common agreement on the meaning of disability is urgently needed. To be able to stand up to scrutiny, a definition of disability should be: applicable to all people, without segregation into groups such as “the visually impaired” or “wheelchair users” or those with a chronic illness, and be able to describe the experience of disability across many areas of functioning. The definition should allow comparison of severity across different types of disability, be flexible enough for different applications (eg, statistical or clinical use), be able to describe all types of disability, and recognise the effects of the environment on a person’s disability. Finally, the definition should not include stipulations about the causes of any disability. Disability is a state of decreased functioning associated with disease, disorder, injury, or other health conditions, which in the context of one’s environment is experienced as an impairment, activity limitation, or participation restriction. Understanding both the health and the environmental aspects of disability allows for the examination of health interventions that improve functioning as well as interventions to change the environment to improve participation of people with disabilities. Our ICF-based definition brings us closer to the goal of equal rights, opportunities, and participation in society. Inequality can only be identified by comparison of people who benefit from the way society is organised with those who do not benefit. If there is no agreement about how to identify those who are disadvantaged by the experience of disability, comparison cannot be made, and inequality can neither be identified, measured, nor remedied. *Leonardi M, Bickenbach J, Ustun TB, Kostanjsek N, Chatterji S; MHADIE Consortium. The definition of disability: what is in a name? Lancet. 2006 Oct 7;368(9543):1219-21. doi: 10.1016/S0140-6736(06)69498-1.7*

3. Experimental investigations on consciousness. *Ricerche sperimentali sulla coscienza* | MARTIN MONTI

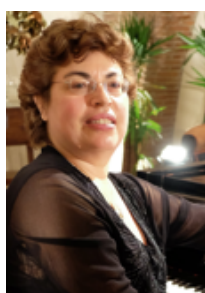


Martin Monti is Professor in the departments of Psychology and Neurosurgery at the University of California Los Angeles (UCLA) since 2011. Prior to joining UCLA, Professor Monti earned a PhD in Psychology and Neuroscience at Princeton University (USA) and served as a Career Development Fellow at the MRC Cognition and Brain Sciences Unit in Cambridge (UK). His work employs the methods of cognitive neuroscience to study two central

aspects of the human experience: (i) What mechanisms support a state of consciousness and accompany its loss and recovery (e.g., after brain injury)? And (ii) What is (if any) the role of language in human cognition?

How do we know whether someone, other than ourselves, is conscious? While this question feels philosophical or academic in nature, it has extremely important implications with respect to both basic research, and the understanding of how the joint actions of billions of neurons lead to the emergence of the feeling of consciousness, as well as in translational research, in the context of medical, legal, and ethical decision-making in patients who survive severe brain injury and enter the limbo of Disorders of Consciousness (DoC) such as the Vegetative State (VS) and the Minimally Conscious State (MCS). Over the past 20 years, brain imaging technology including magnetic resonance imaging (MRI), electroencephalography (EEG) and other tools of neuroscience have permitted an unprecedented access to studying brain function and structure at the limits of consciousness in both healthy volunteers and brain injury patients. In this presentation I will provide an overview for the key findings of the main contributions these approaches have given to the field of disorders of consciousness, and will discuss both the power of these techniques and the main complexities tied to employing them in order to assess residual brain function in otherwise non-responsive individuals. Specifically, I will present the three main stages and impacts that this research has had on the field of disorders of consciousness: (i) The understanding that, even in the absence of consciousness, DoC patients can retain several aspects of brain function (i.e., are not, as often incorrectly labeled, *apallic*); (ii) The understanding that our current tools to assess, in the clinic, one's level of consciousness are susceptible to false negatives (i.e., some patients may appear, on the basis of behavioral tests, to be unconscious despite, in fact being minimally conscious); and (iii) The creation of a framework for understanding how severe brain injury can lead to the failure to recover consciousness and thus for developing novel interventions.

4. Introduction to psychology and consciousness in music. Concert for pianoforte and soprano: The consciousness concert. Introduzione alla psicologia e la coscienza nella musica. Concerto per pianoforte e soprano. Il concerto della coscienza | LUISA ZECCHINELLI-ANNUNZIATA LIA LANTIERI



Luisa Zecchinelli. Conservatory "E.F.Dall'Abaco" in Verona, Italy. Chair of Piano, Pianist and Professor of Psychology of Music and Vocal Chamber Music. Graduated in Philosophy at University of Bologna, with thesis in Psychology of Music ("Figure-Ground, Gestalt Psychology). She performs as piano accompanist with soprano Annunziata Lia Lantieri (recording, performing opera concerts and chamber music, focusing on rediscovery and re-evaluation of Italian vocal chamber repertoire '800'900).

International masterclass in several University EU. Poetry and Music concert lecturer focused on the analysis of textual verses and musical compositions. Seminars on Music Perception and Cognition in its structural, acoustic, and symbolic aspect; Structures and music listening and instrumental performing strategies; Experimental Phenomenology of Perception; Music & Psychology. Publishing: 2018 "Paolo Bozzi's Experimental Phenomenology (ed.by Ivana Bianchi and Richard Davies) "Two factor of unification for musical notes: closeness in time and closeness in tone" Translated by L.Zecchinelli and R.Davies and commented by Luisa Zecchinelli, Routledge, New York.; 2016 "Elsa Respighi e il suo tempo. Verona e l'Italia del primo Novecento" (ed. Luisa Zecchinelli) CIERRE, Verona; 2015 Gabriele

Introduzione alla Semantica Psicologica della musica. Gli esperimenti condotti dagli studiosi di Neuroscienze cognitive e di Neuroestetica, che ricercano le basi biologiche dell'esperienza musicale, dimostrano da tempo come la musica sia una attività percettiva molto complessa sia a livello compositivo che esecutivo, interpretativo e d'ascolto: la musica coinvolge tutto il cervello, con specializzazioni di codifica contemporanea degli stimoli in entrambi gli emisferi cerebrali, ed attività corticali associative integrate, distribuite e differenziate nel riconoscere ed elaborare un linguaggio musicale specifico.

Nell'elaborazione della musica, che opera a livello gerarchico, si notano anche localizzazioni diverse nella codifica di elementi musicali da parte di musicisti esperti o ascoltatori inesperti. Infatti, alcuni risultati della pratica musicale (percettiva, muscolare) hanno un effetto di modifica della struttura o dell'attività di parti del sistema uditivo del cervello.. Sotto l'aspetto psicofisico, l'esperienza musicale ha accesso diretto e privilegiato ai meccanismi neurali di risposta e reazione del sistema neurovegetativo, poiché riesce a procurare forti emozioni, talvolta variazioni del ritmo cardiaco, del respiro, inducendo al movimento, aprendo i circuiti di gratificazione motivazionale. Tutta questa attività sincronizzata permette una progressiva consapevolezza dello sviluppo delle aree uditive, sensibilizzate nel riconoscere i cambiamenti qualitativi della percezione, nel muovere l'attenzione a sottili variazioni armoniche, ritmiche, espressive e strutturali. In particolare, è la voce cantata che, grazie alle sue caratteristiche uniche di identità sonora riconoscibile e fisiologicamente predisposta, ha possibilità di accesso immediato alla percezione emotiva, perché riesce ad attrarre l'energia attentiva dell'ascoltatore. Poiché il suono strumentale e il linguaggio parlato utilizzano entrambi lo stesso canale uditivo gerarchicamente organizzato secondo sistemi sintattici parzialmente comuni, se esaminiamo dettagliatamente i processi sequenziali, proposti dall'analisi acustica dello stimolo nell'ambito del lessico musicale, possiamo notare come l'organizzazione delle 'altezze' nel codice tonale (note, intervalli, profilo melodico) e l'organizzazione temporale (ritmo, metro) entrino in parallelo con il lessico fonologico, attivando memorie associative e convergendo verso il piano esecutivo vocale della formazione del canto in una fusione percettiva di alto grado emotivo ed espressivo (cfr. Modular Model, by Peretz, Coltheart 2003)

Se poi al circuito fonologico uniamo il potenziale immaginario (sensibile, sinestesico, proiettivo) insito nei versi poetici messi in Musica, allora l'effetto ottenuto si amplifica ulteriormente: i rimandi associativi fonosimbolici si moltiplicano, la 'parola' poetica unisce il proprio rapporto simbolico profondo alle risonanze strumentali che funzionano da sostegno sonoro compenetrante in quel significato letterale e metaforico. Non a caso per esaminare tali aspetti, azionati in particolar modo nelle Liriche da camera del Novecento italiano, abbiamo scelto alcuni testi del poeta Gabriele D'Annunzio (1863-1938) celebre scrittore e drammaturgo italiano, legato alla corrente letteraria novecentesca del Decadentismo, nota per il preziosismo linguistico e la raffinata cultura di innesti letterari europei.

La scrittura poetica di D'Annunzio è già molto 'musicale' in sé, ricercando gli effettionomatopeici, le varietà metriche, le sonorità declamate, la sapiente alternanza delle rime, dialoghi interiori sommessi, intimistici, dove prevale il "*flusso di coscienza*", evocazioni visive e metaforiche molto innovative e creative. Tale ricchezza di risonanze emotive mette a dura prova le intuizioni compositive dei Musicisti suoi contemporanei che si apprestano a 'investire' e 'rivestire' di suono tale

precisa ed effervescente dinamica poetica, costringendoli a seguire e rinforzare le immagini simboliche descritte o a proiettarle nell'immaginario inconscio. In questo modo l'archetipo simbolico esalta proprio le qualità espressive in superficie, quelle qualità terziarie (*affordances*, Gibson) che *invitano* a connotare luoghi e situazioni stimolanti, il “*come*” in quella situazione dinamica, il significato “*incarnato*” letteralmente nel “corpo” individuale (“*embody meaning*”, Leonard B.Meyer), e in questo caso il timbro, l'evoluzione del suono, l'accento, l'intonazione espressiva del canto.



Annunziata Lia Lantieri. Conservatory “E.F.Dall’Abaco” in Verona, Italy. Chair of Artististic Singing, Soprano and Professor of Vocal Chamber Music. International teaching activity in Masterclass at University State Conservatory of Izmir, Japan Opera foundation in Tokio, Showa University Academy Musicae, Italy, International Courses Nervi, Theater Cagli Academy, International Masterclass “Figaro Association” at Conservatorio “B.Marcello” di Venezia. Wide performances experience in the sacred repertoire to interpret the compositions of most well-known authors from 800’900’ (Bach, Pergolesi, Cimarosa, Galuppi, Vivaldi, Haydn, Boccherini, Mozart, Donizetti, mayr, Beethoven, Schubert, Rossini, Verdi, Fauré). She had performed for german ZDF, the RTV Lugano Swizerkand, “Rete Quattro” in Milan and in major Italian Theaters as “La Fenice” di Venezia “Margherita” Genoa, “Bellini” di Catania, Savona, la Spezia, Imperia, Novara, Vercelli Padua, Rivigo, with “Il Barbiere di Siviglia”, “La serva padrona”, “Lucia di Lammermoor”, “Rigoletto”, “Boheme”;. She has performed at Große Music Halle Hamburg, The Theater of Göttingen, the Bregenz Festspieler. With Luisa Zecchinelli from 2015 Fonder and promoter “Concorso internazionale Elsa Respighi Liriche da camera ottonevecento italiano” Verona, Italy.

La voce, coscienza dell'universo interiore. “*Il canto è un’evoluzione dell’anima*”
 Ho sempre pensato che il dominio della perfezione tecnica artistica debba passare attraverso stadi di consapevolezza progressiva, perché il corpo fisico dell'esecutore possa liberare tutta l'energia interiore, nel flusso continuo della voce cantata.
 “*Il canto è come l'acqua, scorre in tutto il corpo e diventa una fontana di energia*”
 L'evoluzione della voce nel canto, del suono soprattutto, si trasforma in un'unica diramazione, come un albero che ha le sue radici e va fino alla testa e germogliare nei suoi fiori e frutti. L'immaginario dell'albero è una metafora attiva: noi cantanti iniziamo a lavorare sul centro, la posizione del diaframma che supporta il respiro e l'emissione dell'aria; l'emissione dell'aria mette in vibrazione l'adduzione delle corde vocali che proiettano il suono attraverso la vibrazione corporea. Questa vibrazione che coinvolge il corpo determina il timbro, il colore della voce, l'identità precisa che la rende unica. Questa è la prima consapevolezza che il cantante deve imparare a “sentire”, ascoltare e riconoscere fisicamente oltre che uditivamente. Per ciò che riguarda lo studio della parola, è importante la consapevolezza del colore delle ‘vocali’: vocale aperta, vocale chiusa (più rotonda); non è solo una questione fisiologica laringea, ma un modo, una tecnica per accostarsi all'espressività intenzionale. Se devi intonare una frase drammatica, o più lirica, o più sensibile e delicata, non è solo il timbro della voce che conta, ma è determinante il colore della vocale che va ad inserirsi nel suono armonico. Quando un cantante pronuncia correttamente la parola, ha fatto un progresso tecnico importante: domina il fiato, la gola è aperta, e la lingua interna è libera nella pronuncia. Questo procedimento fa nascere la cosiddetta “*Voce in maschera*” che manda il suono armonico nei

risuonatori ossei della testa. Con questa tecnica metodica, il cantante prende coscienza della sua voce, per poterla modulare nell'espressività, 'giocando' con la psicologia dei personaggi che interpreta: l'immediatezza di questo profondo lavoro interiore si manifesterà in maniera decisiva e diretta nel suscitare l'emozione dell'ascoltatore. E' un lungo lavoro di appropriazione stilistica e psicologica del sè, dove lo strumento musicale sarà tutto il proprio corpo, che diventerà "*Cassa di risonanza*".

Ora, come in un "esperimento di pensiero", ascolteremo condividendole insieme a distanza, quattro situazioni archetipiche sonore, dove le "parole" dannunziane trasformate nel "Canto disteso" mostreranno la loro evoluzione dinamica espressiva, coincidendo nel "divenire" musicale:

1. *I pastori*, Musica di Ildebrando Pizzetti (1880-1968) 05:25: Lo spazio ampio delle durate, la calma, la distanza evocativa di un passato, la visione della Natura proiettata nell'interno, le immagini arcaiche musicali e naturali ("*tremoli*", Aria e Acqua).

2. *Ninna nanna*, Musica di Francesco Paolo Tosti (1846-1916) 03:02: Lo spazio intimo circolare, ripetitivo, ritmo e voce cullante, assonanze in rima, simmetria metrica prevedibile, confortante.

3. *La sera*, Musica di Ottorino Respighi (1879-1936) 04:05: Pulsazione ritmica cardiaca, insistente fino all'ansia; isomorfismo visivo e musicale in progressione ascendente che sospinge la voce in "acuto" (la Luce) raggiunta "*come un dardo*", una ferita dolorosa; il dialogo interlocutorio si svolge con una presenza silenziosa, si trasforma in tensione emotiva, ostinata, sospesa, attesa e ripresa.

4. *Sopra un'aria antica*, Musica di Ottorino Respighi 06:24: Come in una scena drammaturgica, il dialogo tra due personaggi, la figura maschile, la figura femminile si dissocia in un'unica voce che cambia l'interpretazione emotiva psicologica, su uno sfondo strumentale che evoca realmente una "Aria antica" (composizione di Antonio Cesti, *Intorno all'idol mio*) come una memoria condivisa, ricamata, *Leitmotiv* del ricordo; una scena di addio, l'osservazione amorosa maschile del disfacimento di lei nello sprofondare verso della morte, la discesa nell'oscurità del registro grave del pianoforte; come nell'oscurità primordiale dell'inconscio indifferenziato, un 'mare' oscillante in ritmo di *terzine* dilatate, progressivamente contratte in un crescendo "*possente*", si lancia verso il "*giorno estivo, i venti, gli odori, i cupidi fiori*", ove rinasce la gioia irrefrenabile della vita.

CONSCIOUSNESS: PSYCHIATRY AND PSYCHOLOGY. LA COSCIENZA: PSICHIATRIA E PSICOLOGIA

5. Consciousness in Psychiatry and DID (Dissociative Identity Disorder).

La coscienza in psichiatria e disturbi dissociativi dell'identità |
BENEDETTO FARINA



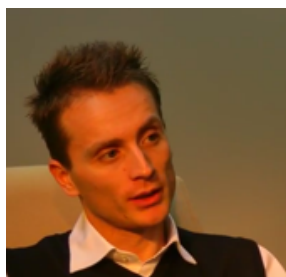
Benedetto Farina is a Doctor, psychiatrist and psychotherapist, PhD in neuroscience, Full Professor of Clinical Psychology at the European University of Rome. Member of the teaching staff of the Doctoral Course in "Dynamic and Clinical Psychology" of the Sapienza University of Rome. Member of the Scientific Advisory Board of the International Society for the Study of Trauma and Dissociation. Teacher partner and secretary / treasurer of the Board of the Italian Society of Behavioral and Cognitive Therapy. Lecturer in numerous Psychotherapy Specialization Schools. He was the winner of the Richard P. Kluft Award 2015 Best Article. Member of the

editorial board of the Journal of Trauma and Dissociation, of Clinical Neuropsychiatry, of Psychiatry and Psychotherapy, of Clinical Cognitivism, and Associate Editor of the International Journal of Multidisciplinary Trauma Studies. Author of over one hundred publications including monographs, articles published in indexed international journals and book chapters. He has research collaborations with national and international academic institutions. Psychiatrist consultant of the General Command of the Carabinieri.

Psychopathological alterations of consciousness have a multiform character, and there is still no complete agreement on their definition, on the causes and on the role they play in psychic suffering. If, on the one hand, the difficulty in conceptualizing them depends on the often too ideological approach to their study, on the other hand they are inevitably conditioned by the multiplicity of meanings that in psychology are attributed to conscience. William James, one of the founders of modern psychology, argued that consciousness is something we believe we know only until someone asks us to define it. In psychology, in fact, different functions are attributed to the operation of consciousness: from the state of alertness and attention during wakefulness (and which disappears with sleep) to the continuity of self-experience and autobiographical memories that we define personal identity. . A continuity of self-experience that involves mental activities and the body (these thoughts of mine belong to me as well as the hand that writes them) and which has been called synchronic consciousness, and over time (I am the same as a few minutes ago, yesterday, last year and when I turned ten), or diachronic consciousness. In classical descriptive psychopathology, the disturbances of consciousness were classified according to the definition just shared and therefore into two broad categories: those of the state of consciousness, or the level of vigilance, and the alterations of self-consciousness. The alterations in the state of consciousness (drowsiness, numbness, crepuscular states, delirium and coma) are mostly due to neurological diseases and states of cerebral intoxication (as in the case of drug use). Alterations in self-consciousness, also called dissociative symptoms or disorders, involve, in addition to consciousness, other mental functions closely related to it, such as self-memory and identity. As the Nobel laureate Gerald Edelman argued, consciousness is nothing but the memory of the present and identity is nothing but the continuity of consciousness and self-memory. Dissociative symptoms or disorders are widespread and sometimes severe, almost always generated by traumatic experiences which, when repeatedly occurring during development, can lead to the separation of the individual's personality and determine multiple identities that alternatively guide the mental life of the individual who it is no longer such, or rather that from "non-divisible" (individual) it becomes divided. For over a hundred years the disagreement on dissociation has affected both the descriptive aspect of his psychopathology, i.e. the definition of what should be indicated by the term dissociative, and the pathogenetic one, i.e. relative to the pathological mechanisms and processes that determine alterations of consciousness. and of self-memory and identity. The debate that has lasted for several decades has always been affected by ideological attitudes that escaped confrontation with empirical research and therefore with science. An example of all is Freudian classical psychoanalysis which, in addition to denying the real origin of the traumas that generate dissociation, has self-referentially attributed dissociative processes to unproven defense mechanisms of the ego based on a drive psychology. On the contrary, psychology and psychopathology based on scientific and neuroscientific research have made it possible to overcome these ideological distortions, allowing us to verify the plausibility of the hypotheses about the functioning of dissociative processes and alterations in self-consciousness and to

guide the development of the most appropriate therapeutic procedures for their treatment.

6. The default mode network and altered consciousness in psychiatric patients. Il sistema della condizione di default e l'alterazione della coscienza in pazienti psichiatrici | CLAUDIO IMPERATORI



Claudio Imperatori is an associate professor of Clinical Psychology at the Department of Human Sciences, European University of Rome. His research focuses the neurophysiological and psychopathological correlates of the impulsive-compulsive spectrum of disorders, particularly eating disorders, substance-related and behavioral addictions.

La moderna concettualizzazione del cervello come organo altamente integrato e dinamico ha portato i ricercatori a considerare i processi cognitivi e i processi psicopatologici come il risultato dell'attività dinamica di grandi network neurali, piuttosto che il risultato della disfunzione di singole strutture cerebrali. Per rete si intende comunemente una serie di componenti (sistemi o entità) interconnesse tra di loro che sono in grado di descrivere una grande varietà di fenomeni fisici ed astratti: mentre i nodi di una rete (*hub*) possono rappresentare entità diverse (regioni cerebrali nel caso delle neuroscienze), gli archi (*edge*) riflettono diverse tipologie di interazione tra nodi. Negli ultimi anni l'interesse dei neuroscienziati è stato principalmente rivolto proprio allo studio di queste interazioni. D'altro canto, il cervello presenta molte più connessioni che regioni (10^{14} connessioni sinaptiche vs 10^{10} neuroni). Con il termine analisi di connettività ci si riferisce all'indagine delle connessioni tra regioni cerebrali, con l'obiettivo di caratterizzarne la loro natura. Lo studio della connettività si basa sui dati di *neuroimaging* e può essere effettuata su differenti livelli di analisi. In particolare, si distinguono analisi di: connettività anatomica (o strutturale), connettività molecolare e connettività funzionale. Negli ultimi anni gli approcci basati sullo studio della connettività hanno fornito importanti informazioni sull'organizzazione del cervello umano in termini di network cerebrali. Tali informazioni hanno permesso di comprendere quali siano le reti maggiormente implicate nei processi cognitivi e nello sviluppo/mantenimento dei principali disturbi neuropsichiatrici.

Il Default Mode Network (DMN) è sicuramente la rete neurale che negli ultimi anni ha ricevuto maggiore interesse da parte di clinici e ricercatori. Il concetto del DMN venne introdotto nel 2001, quando, sulla base di diversi risultati ottenuti tramite l'utilizzo della *tomografia ad emissione di positroni (PET)*, Raichle e collaboratori utilizzarono, per la prima volta, il termine "Default Mode" per riferirsi ad una rete di aree cerebrali che si "attivano insieme" quando la persona si trova nella condizione di *resting state* (ovvero quando viene chiesto al soggetto di restare con gli occhi chiusi in un stato vigile e cosciente, ma rilassato) per poi ridurre sistematicamente la loro attività quando il cervello deve eseguire dei task cognitivi (ad esempio la visione passiva di stimoli visivi).

Quando il cervello non è impegnato in task cognitivi, infatti, sembra innescarsi una modalità di pensiero indipendente da stimoli esterni, appunto di "default", caratterizzata da un'esplorazione mentale basata su attività di introspezione, memorie autobiografiche e pensieri rivolti al futuro. Il DMN, perciò, si struttura come una rete su larga scala contraddistinta dal fatto che regioni cerebrali distinte sincronizzano la loro attività quando il soggetto è con gli occhi chiusi, vigile, ma non attivamente

coinvolto in un task specifico, offrendo le basi neurali per il fluire spontaneo del pensiero umano specificamente caratterizzato dalla focalizzazione su di sé.

Dal punto di vista anatomico, studi di connettività funzionale e strutturale hanno determinato che il DMN è costituito da un insieme di aree corticali e sottocorticali fortemente interconnesse tra cui il precuneo/corteccia cingolata posteriore, la corteccia prefrontale ventromediale, il lobo parietale posteriore inferiore, la giunzione temporo-parietale, la formazione ippocampale.

A partire dal 2001, sono aumentati in maniera esponenziale gli studi che hanno fornito una descrizione dei processi cognitivi implicati in questo network basandosi sulla sua neuroanatomia funzionale. Il DMN è coinvolto in diversi processi cognitivi di ordine superiore come la mentalizzazione, la memoria autobiografica, l'autoconsapevolezza di sé e dei propri stati interni come le emozioni. Dato il ruolo cruciale del DMN in questi processi cognitivi di ordine superiore è facile intuire come alterazioni funzionali, strutturali e molecolari a livello di questa rete cerebrale siano state messe in associazione con molteplici fenomeni psicopatologici osservabili in diversi disturbi mentali come la schizofrenia, i disturbi dell'umore o quelli conseguenti a maltrattamenti infantili o traumi.

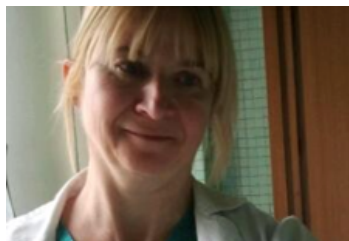
7. Psychology of states of consciousness. Psicologia degli stati della coscienza | MICHELA BALCONI



Michela Balconi is an Associate Professor of Psychophysiology and Neuroscience of Well-being at the Faculty of Psychology of the Catholic University of the Sacred Heart, Milan, Italy. She regularly gives classes at the 2nd-level post-graduate master's degree in Clinical Neuroscience and at the Doctoral School in Psychology at the Catholic University of Milan in Italy. At the same university, she is Scientific Director of the International research centre for Cognitive Applied Neuroscience (IrcCAN), the 2nd-level post-graduate master's degree in Clinical Neuroscience and of the Research Unit in Affective and Social Neuroscience, where she supervises research activities of a large group of young researchers, Ph.D. students, and trainees. She is member of the Ethics Committee of the Department of Psychology at the Catholic University of Milan and of the Ethics Committee of the Italian Association of Psychology. She took part in and coordinated many scientific projects in collaboration with national and international researchers and practitioners. She is primarily interested in: functional and dysfunctional manifestations of affective processes and emotional experience; integrated multi-method analysis (EEG, fNIRS, eye-tracking, autonomic indices) of physiological correlates of such processes and experiences; physiological and pathological modulation of the state of consciousness; and relative potential application of methods and techniques borrowed from clinical and cognitive-affective neurosciences. She is also Editor-in-Chief of the indexed international scientific journal "Neuropsychological Trends", and she acts as reviewer or member of the editorial board of many other international journals. Again, she is member or part of the management committee of many national and international scientific societies (e.g. SIPF, SINP, AIP, INS, IBRO, FESN). She is author of 288 scientific papers, 20 books, 40 book chapters, and part of more than 450 invited talks, oral presentations or poster presentations. H-index (Scopus): 31 – Number of citations (Scopus): 3493.

Psychology of states of consciousness. From consciousness to the sense of agency. The main question that the contribution tried to answer is about the role of consciousness in action and the sense of agency, and the mechanism of conscious control of action implicated to represent the sense of being an authoritative agent. Indeed, consciousness can be represented as a compound concept, that includes not only a general sense of ownership for our own actions, but also a systematic and long-term sense of continuity along the time course. Theoretical and empirical implications of the sense of agency for consciousness, self-consciousness and action were considered. Specifically, we explored the role that intentions have for conscious representation in relationship with initiation, control and action execution. The present chapter explored how different levels of consciousness in relationship with the sense of agency may be collected, that is a first, immediate and unconscious sense of agency labelled as “feeling of agency”, that is proprioceptively derived from subjective sensations of being an agent. On the contrary, the “judgement of agency” is based on the reconstruction of the proper agentivity as the conceptual representation of being the author of an action. Whereas the former is intuitively and unconceptually represented, the latter is knowledge-based and in general consciously founded. Moreover, a “minimal” sense of agency (and consciousness) is accompanied by a “narrative” identity representation, that results from an integration of different and heterogeneous experiences. In addition, a third level of agency can be proposed, related to an attributional process, that includes also the individual representation of conscious agency in a social context. It is the sense of a moral responsibility, directly related to the high-level sense of agency.

8. The neurophysiological modified states of consciousness. Stati neurofisiologici modificati della coscienza | MARIA PAOLA BRUGNOLI-ALBERTO CARRARA



Maria Paola Brugnoli, Medico Chirurgo, PhD. Specialista in Anestesia e Terapia Intensiva, Terapia del Dolore e Cure Palliative, Neurobioetica. Ha lavorato per 20 anni presso l'Azienda Ospedaliera Universitaria Integrata di Verona sia come medico anestesista, che di terapia intensiva, che terapeuta del dolore che dottoranda di ricerca in neuroscienze, psicologia e psichiatria. Ha conseguito il Dottorato di Ricerca in Neuroscienze, Psicologia e Psichiatria presso l'Università degli studi di Verona. Past Research Fellow presso il centro di ricerca medica del Governo Americano NIH National Institutes of Health, Clinical Center, Pain and Palliative Care, Bethesda, USA. Dal 2017 Coordinatore Sottogruppo Internazionale, Interdisciplinare, Interreligioso, di Studi sulla Coscienza presso il Centro di Ricerca di Neurobioetica GdN, la Cattedra UNESCO di Bioetica e Diritti Umani, Ateneo Pontificio Regina Apostolorum, Roma, Italia <https://www.unescobiotech.org/> . Direttore Comitato Etico SIPMU Società Scientifica Italiana Ipnosi Clinica in Psicoterapia e Medicina Umanistica www.sipmu.org . Ha scritto 16 libri in italiano ed inglese sulla coscienza, gli stati modificati di coscienza, l'ipnosi clinica, la terapia del dolore e le cure palliative. Ha pubblicato diversi articoli scientifici su PubMed.



Fr. Alberto Carrara LC, Accademico e Membro corrispondente della Pontificia Accademia per la Vita (PAV, 2016), Tecnico di laboratorio chimico-biologico (1999), Dottore in Biotecnologie mediche presso la Facoltà di Medicina e Chirurgia dell'Università degli Studi di Padova (2004; 2007), Dottore magistrale in Filosofia (Laurea magistrale con specializzazione in Antropologia filosofica, 2011), Dottore in Teologia (Laurea, 2013). Presso l'Ateneo Pontificio Regina Apostolorum di Roma svolge l'incarico di: Coordinatore del GdN, il Gruppo interdisciplinare di ricerca in Neurobioetica; Professore incaricato di Antropologia filosofica e Neuroetica (Facoltà di Filosofia), Docente del Master in Scienza e Fede e del Diploma in Bioetica; Fellow della Cattedra UNESCO in Bioetica e Diritti Umani e Docente e Membro del gruppo di ricerca dell'ISSD, Istituto di Studi Superiori della Donna. Nel 2015 è stato Docente incaricato di Neurodiritto presso la Facoltà di Giurisprudenza e dal 2017 è Docente titolare di Neuroetica presso la Facoltà di Psicologia dell'Università Europea di Roma (UER). Inoltre, è Docente riconosciuto dal M.I.U.R. e Membro del Consiglio scientifico della S.I.S.P.I., Scuola Internazionale di Specializzazione con la Procedura Immaginativa; è Membro del Comitato scientifico del BR (Brain Research) Fondazione onlus; Membro di diversi comitati etici, tra i quali quello della BioRep, s.r.l.; Membro della Neuroethics Society e della SINE, Società Italiana di Neuroetica.

The conscious and unconscious mind and the modified states of consciousness are the most unclear problem of neuroscience, psychology and philosophy. Since the emergence of the various counterparts in the mind-body association, numerous and more scientific studies have emerged to support both sides of the topic. The blatant polarity of these positions ultimately goes to suggest that they are both part of a larger dynamic. Nonetheless, the mind-body borderline is the research laboratory of the future. Significant comprehension of the human brain has evolved effectively over the past few decades. We now know the specialized functions of the brain and all of its building blocks. Scientists are discovering consciousness beyond the brain. Quantum Physicists, Psychologists, Philosophers and Neuroscientists are attempting to integrate their theoretical and empirical knowledge to uncover enigmas of the human mind and the modified states of consciousness. How can we approach consciousness in a scientific manner? There are many forms of consciousness, such as those associated with seeing, thinking, emotions, pain, suffering and there are the modified states of consciousness. They can be neurophysiological and pathological states of consciousness. In this lesson we will learn the neuroscientific classification of the neurophysiological states of consciousness. Neurophysiological states of consciousness include modified states of consciousness that are not pathological and not modified by anaesthesia, drugs or substances. These are waking and sleeping states and states such as clinical hypnosis and meditative states, which are used in medical and psychological therapy.

CONSCIOUSNESS: PHILOSOPHICAL & THEOLOGICAL PERSPECTIVES. LA COSCIENZA: PROSPETTIVE FILOSOFICHE E TEOLOGICHE

9. Utilizing the alternative state of consciousness while working with the critically ill. Utilizzo degli stati di coscienza alternativi nell'attenzione dei malati in situazione critica | KATALIN VARGA



Katalin Varga, Ph.D., DSc. Psychologist, hypnotherapist, ericksonian psychotherapist. Dr. Varga is a professor at Eötvös Loránd University (ELTE), the head of the Department of Affective Psychology, past president of the Hungarian Association of Hypnosis, board member of the international Society of Hypnosis (ISH), doctor of Academy of Sciences (Dsc). She graduated as psychologist in 1986 and won the Postgraduate Fellowship of the Hungarian Academy of Sciences (1986-1990). Her research topic was the investigation of the subjective experiences connected to

hypnosis and the role of suggestions in critical states. She got her degree of "Doctor of University" (ELTE) in 1991, and her PhD degree in 1997 on comparing the subjective and behavioral effects of hypnosis. As a member of the "Budapest hypnosis research laboratory" she is investigating hypnosis in an interactional framework, in the multilevel approach she is focusing on the phenomenological data. From 1996 she has been working with patients of somatic medicine, mostly with critically ill, applying suggestive and hypnosis techniques. She is the founder and professor of the postgraduate training of Psychological Support Based on Positive Suggestions (PSBPS), co-organized by the Hungarian Association of Hypnosis and Semmelweis University School of Medicine, Budapest. She has published several articles, chapters and books and teaches widely about research on hypnosis, and the clinical experiences on the application of suggestive techniques with the critically ill.

Various research results will be presented proving that appropriate communication – called Psychological Support Based on Positive Suggestions - can improve the medical care in various settings: intensive care, eye-surgery, orthopaedic surgery, obstetrics, etc. The effect of these techniques is reflected in various parameters (shorter hospital stay, better cooperation, less medication, reduced side effects etc.).

The approach is based on the observation that the patients in medical settings are in a state very close to the hypnotic state, so any comment may function as a powerful hypnotic suggestion.

10. Self-consciousness. Autocoscienza | GIORGIA SALATIELLO



Giorgia Salatiello. Professore Emerito della Facoltà di Filosofia della Pontificia Università Gregoriana e Professore Invitato dell'Istituto di Studi Superiori sulla Donna dell'Ateneo Pontificio Regina Apostolorum e del Master in Consulenza Filosofica e Antropologia Esistenziale (APRA-UER-IFACE crf). Coordina il sottogruppo di Neurobioetica e Differenza Sessuale del

Gruppo di Ricerca di Neurobioetica dell'Ateneo Pontificio Regina Apostolorum. Coordina il Gruppo interdisciplinare di ricerca su La differenza Donna-Uomo della Facoltà di Filosofia della Pontificia Università Gregoriana. Collabora con L'Osservatore Romano ed è membro del Comitato di direzione dell'inserito mensile Donne Chiesa Mondo. E' autrice di libri e saggi su tematiche antropologiche, sia filosofiche che teologiche.

Self-awareness, of which the reflective character is affirmed, is a peculiarly and exclusively human capacity, since the infrahuman beings do not possess any form of self-awareness, while in God His being and His consciousness are fully identified and He knows himself with an act of simple intuition. It is therefore necessary to investigate what exactly this reflection or complete return to oneself consists of, first of all from a gnoseological and metaphysical perspective. Immediately afterwards, the anthropological implications are taken into consideration and particular attention is paid to the theme of freedom which is not possible without self-awareness. Finally, but with no less importance, we want to bring attention to the relevant repercussions that the theme of self-awareness has for bioethics, assuming an integral and in no way reductive conception of the person. una concezione della persona integrale ed in nessun modo riduttiva.

11. Consciousness: Cartesian and Lockean perspectives. Consciencia nel pensiero di Cartesio e Locke | ADRIÁN CANAL



Adrián Canal LC is a Catholic priest of the Legionaries of Christ. He is originally from Mexico. He studied Humanities in Cheshire, CT, USA. He dedicated three years to youth ministry in the Cumbres Institute, Leon, Mexico. Fr. Adrián has a degree in philosophy and is currently working on a Ph.D. entitled the Person and Consciousness, the Origins of John Locke's Account on Personal Identity. Fr. Canal is an assistant professor in the Pontifical Athenaeum Regina Apostolorum in Rome where he teaches courses on Introduction to philosophy, the History of Early Modern Philosophy and the History of the relationship between Philosophy-Science and the Christian Faith.

This session aims to shed some light on the notion of consciousness in Descartes and Locke. The first section seeks to provide concise meanings of consciousness in the Cartesian tradition. In his analysis of the cogito, Descartes uses the Latin term *conscientia* and shifts its moral meaning to endow it with a psychological connotation. The Cartesians characterize consciousness as an interior sentiment that accompanies thinking and is non-evaluative. Consciousness is immediate, reflexive, and is different from reflection. The second section focuses on Locke's use of consciousness. Locke defines consciousness as a special kind of awareness of everything that passes in man's mind. This definition implies that man is aware of all his thoughts, actions, and of himself. Consciousness is immediate and implies inherent reflexivity; it is different from perception, reflection, and memory. Finally, consciousness has three functions. 1. Unifies body and mind; actions and thoughts; the past-present-future of the subject. 2. Appropriates the subject's actions. 3. It is a condition for moral awareness and moral responsibility. A third section considers the continuity between Descartes and Locke and explains how the great ideas of the past can shed light on problems of the present.

12. Is consciousness a product of the brain or/and a divine act of God? La coscienza è un prodotto del cervello o/e una divina azione soprannaturale di Dio? | ALEX YEUNG



Alex Yeung, LC, was born in Illinois, USA. He earned degrees in Mathematics (Computer Science) and Music from the University of Waterloo, Canada. He then studied Philosophy at the Pontifical Athenaeum Regina Apostolorum in Rome, obtaining his Doctorate in Philosophy in 2011 with a thesis on the philosophical anthropology of the French philosopher Étienne Gilson. Among his university studies he also has a medical degree and a Master's degree in Theology. He is currently Professor and Dean of the Faculty of Philosophy of the same Pontifical Athenaeum in Rome. His areas of specialization include philosophical anthropology, philosophy of religion, and the relationship between faith, science and reason. With respect to the latter, his areas of research include: evolution, neurophilosophy, philosophy of information, philosophy of artistic creativity, and interculturality. Fr Alex has given courses and lectures internationally: beyond the USA and Italy, also Mexico, China and the Philippines.

The Origins of Consciousness: Emergence or Divine Intervention? The answer to the question of the origin of consciousness in the human person depends on the nature of consciousness. Taking the lead from an Aristotelian-Thomistic perspective, enriched by progress in the biological and neurosciences, consciousness refers to the concomitant experiential quality of some intentional acts. Knowledge in higher animals have a certain concomitant self-reflection which allows for planning and ecologically-tuned responses. In human beings, there are strong indications that this self-reflection can be *complete*, that is, the simultaneous awareness not only of intentional contents, but also of the nature and source of the intentional activity. Ulterior reflection on this source of our thoughts and agency produces the habitual knowledge of one's self. Note that such an account of consciousness does not identify the human person with consciousness and does not necessarily problematize the thorny relationship between brain activity and conscious activity.

Still, advances in neuroscience have narrowed down possible neural pathways and structures that correlate to conscious awareness of perceived objects, their properties and value, and possible coordinated motor responses to the perceptual situation. Neural correlates to conscious features can give insight into the “easy problem” of consciousness, as well as to the origins of consciousness in the human biological development (and thus also to diseases and “errors” in consciousness). The “hard problem” of consciousness, on the other hand, is not resolvable by simply identifying neural correlates, but rather needs to be approached philosophically – or even theologically. In this sense, we propose that (intellectual) consciousness cannot be simply identified with some supervenient or emergent property of the brain, nor with a *res cogitans* of the Cartesian framework. Metaphysical reflection first centers on the principle of unity of the human person, which being not simply an aggregate of parts, but rather a substantial unity, requires the presence of a soul (Aristotelian form). The biological continuity of this substantial unity, initiated at the moment of union of the

sexual gametes, is ordered to intellectual and volitive (and therefore concomitantly conscious) activity. The development of the human being to the stage where first phenomenal, and then reflexive, consciousness are manifest confirm the presence of the human person; their absence on the other hand – during sleep, in embryonic development, or due to disease – is never in and of itself conclusive of the lack of personal presence or dignity.

13. Anthropology of consciousness. Antropologia della coscienza | MICHAEL BAGGOT

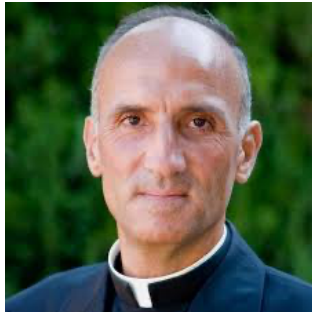


Fr. Michael Baggot LC is currently an Assistant Professor of Bioethics at the Pontifical Athenaeum Regina Apostolorum, Associate Researcher of the UNESCO Chair in Bioethics and Human Rights, Adjunct Professor of Theology at Christendom College, and the Curriculum Coordinator of the Catholic Worldview Fellowship program for university students. He is scheduled to complete his doctorate “Transhumanism, Thomism, and True Perfection: A Thomistic Evaluation of the Admirable Aspirations and Lamentable

Limitations of the Technocentric Postmodern Secular Liberal Worldview of the Oxford Transhumanists” at the end of the 2020-2021 academic year. Baggot also holds a Master’s degree in Philosophy and a Bachelor of Sacred Theology degree from Regina Apostolorum. His writings have appeared in First Things, Studia Bioetica, The National Catholic Bioethics Quarterly, and Medicine, Health Care and Philosophy.

The talk will explore the different views of mental properties found in various physicalist and dualist approaches in contemporary philosophy of the mind. Next, the presentation will address physicalist and dualist approaches to the human person as the subject of consciousness. Thomism will emerge as a school that can provide a philosophical anthropology that grounds the person’s identity as a physical-spiritual composite. Moreover, the Thomistic tradition challenges some of the underlying metaphysical assumptions that have led to many stalemates between physicalists and dualists in contemporary conflicts over the meaning of consciousness and the subject of consciousness. Finally, the conference will briefly address how one of the 20th century’s most influential figures, Karol Wojtyła, placed Thomistic understandings of consciousness in dialogue with 20th-century thinkers from other intellectual traditions. Wojtyła highlights both the mirroring mode of consciousness that captures the objective otherness of the object known and the reflective consciousness that reveals to the acting person his subjectivity. As an ethicist, Wojtyła’s metaphysically grounded anthropological reflections were also made in view of helping the acting person achieve perfection through his moral acts. The presentation will thus show how the Thomistic tradition appreciates the relationship between consciousness, moral conscience, intentionality, rationality, and the soul in the individual’s self-realization.

14. Clinical ethics and consciousness. End of life dilemmas in residual cognitive function. Etica clinica e coscienza. Dilemmi nella fase finale della vita in situazioni di funzionamento residuo della coscienza | FRANCISCO BALLESTA



Fr. Francisco Ballesta Ballester LC is a priest belonging to the congregation of the Legionaries of Christ, full-time professor of the Faculty of Bioethics at the Regina Apostolorum Pontifical Atheneum since 2004, he is a Doctor in Bioethics (APRA, Rome), he holds a Degree in Medicine (Complutense University, Madrid) and a Master in Education (Anáhuac Poniente University, México). Among his positions stand out: member of the Commission for the Promotion of Quality of the APRA since 2013, director of the summer courses 2008 (7th), Abortion and the Culture of Life) and 2019 (18th, Infectious Threats to Global Health) of the Faculty of Bioethics of the APRA. The last of his publications was the book "El Magisterio de la Iglesia y las técnicas de reproducción asistida (1897-2020)", original in Spanish (2021), translated into eight other languages.

Clinical ethics and consciousness. After studying different clinical situations, in relation to impairments in the state of consciousness, we will make a brief analysis of the ethical criteria that must regulate the care of these people and we will compare them with what happens many times in clinical practice. In connection we will discuss, guided by paradigmatic cases, always controversial, the solutions given in different circumstances, sometimes considered borderline, and we will compare them with the ethical criteria of reference.

15. Research ethics and consciousness. Etica della ricerca sulla coscienza | FRANCISCO BALLESTA

The scientific research in which the human being is involved is subject to careful regulation at an international level. The case of persons with impaired state of consciousness constitutes a special circumstance of vulnerability. We will make a quick presentation of what are the ethical criteria that regulate the participation of human beings in scientific research, in general, and of people in these specific situations of vulnerability.

16. Implications of end-of-life therapeutic choices between law and clinical ethics. Implicazioni nelle scelte terapeutiche in fine vita: tra la legge e l'etica clinica | EMANUELA CESARELLA



Emanuela Cesarella is a Lawyer at the Court of Rome, advocate before the Supreme Court of Cassation and other higher courts, has held by appointment of the Superior Council of the Magistracy, the office of Honorary Deputy Prosecutor at the Pretura Circondariale of Rome; she is a legal consultant and collaborates with associations, federations and organizations of national importance; she obtained at the Catholic University of the Sacred Heart-Rome the Master of II level in Clinical Bioethics and Ethical Counseling in Health

Care; she has been collaborator of the editorial staff of the magazine "L'Amico del Clero"; she has published articles in journals of doctrine, jurisprudence and legislation; has been a lecturer in criminal issues in the training courses of ANACI; is a guest lecturer in the Master in Philosophical Counseling and Existential Anthropology at the Faculty of Philosophy of the Pontifical Athenaeum Regina Apostolorum in Rome, in collaboration with IFACE and in agreement with the European University of Rome; she has been invited professor at the European University of Rome; collaborates with an intergovernmental network at European level for the coordination of scientific and technological research in the field of forensic science (DigForAsp); she collaborates with the group of Neurobioethics at the Pontifical Athenaeum Regina Apostolorum in Rome coordinating the subgroup of neuro-law.

Tackling the issue of "end of life" therapeutic choices and the underlying issues requires thinking of law not as a sterile instrument for regulating the relationships between the subjects of the legal system, but as the pulsating and manifest expression of a interaction with the very values of life. If this is true, addressing this issue, like all those of bio-law interest, will mean talking, questioning and discussing the values of life with the awareness on the part of the jurist that law cannot remain neutral but, at the same time, with the certainty of having to protect the intrinsic dignity of the human being and a fundamental principle of the legal system. Given the complexity of the ethical-social issues that revolve around the matter, legislating at national and international level is undoubtedly complex but, certainly, there is a widespread awareness of an answer which, while differentiating itself by cultures and traditions, finds a common denominator in the protection of "Person" as expressed by the Universal Declaration on Bioethics and Human Rights which sets out principles such as respect for human dignity and human rights, the benefit and non-maleficity of clinical interventions, autonomy and consent including the protection of people unable to consent. In a word, the centrality of the person with respect to which scientists, doctors and jurists will have to work in synergy to protect the dignity of life that is coming to an end, some animated by the ethical and deontological duty to heal if possible and the others in working so that they do not never derogate from the importance of always taking care.

17. Consciousness in the aesthetic vision. La coscienza nella visione estetica | **MELISSA MAIONI**



Melissa Maioni, born in 1989, married and mother, completed her doctorate in bioethics and integrated biomedical sciences in March 2017, at the Campus Bio-Medico University of Rome, after obtaining a baccalaureate and a license in bioethics from the Faculty of Bioethics of the Pontifical University Regina Apostolorum. Former assistant professor at the Biomedical Campus of Rome, he is currently an adjunct professor at the Faculty of Medicine of the Catholic University of the Sacred Heart in the specialist degree course in obstetrics and nursing sciences and for four years he has been invited professor of the Faculty of Bioethics of the Pontifical Athenaeum Regina Apostolorum. Since January 2020 she is a member of the GBE, Bioesthetics Group of Study, of the Unesco Chair of Bioethics and Human Rights. Since 2021 she is member of the scientific committee of the series "La cura e la religione" directed by Prof. Paolo Angelo Bonini. Among her publications: Feriti dalla

malattia, accarezzati dalla speranza. La dimensione della speranza nei pazienti oncologici. Prospettive bioetiche e cliniche (2020); Bioetica e culle per la vita: l'ultima possibile alternativa all'aborto (2016) “Il livello di speranza nei pazienti oncologici in cura chemio-terapica. Un’indagine sperimentale / *The level of hope in the cancer patients receiving chemotherapy. An experimental investigation*”, *Medicina e Morale*, 2018), “El anhelo inagotable de belleza como una cura efectiva en la experiencia de la enfermedad” (2021).

Is there a neural basis for the aesthetic experience? Is there a relationship between states of consciousness and the perception of beauty? What may have scientific, measurable, universal and objective beauty, considered a very fine thing, subjective, delegated to the taste of the individual or encoded by the reference culture? By putting the philosophical and bioethical sphere in dialogue with current neurological and psychobiological theories, we will try to bring together all the available evidence to identify the relationship between consciousness and art, with the aim of grasping the truth of beauty more and more integrally and enhancing aesthetic experience as an engine for moral experience oriented towards good and beauty, without therefore falling into reductionism or a transhumanist vision.

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Maria Paola Brugnoli

Alberto García Gómez

Alberto Carrara



Maria Paola Brugnoli (cfr. page 14) & Alberto Carrara (cfr. page 14-15)

Alberto García Gómez is Doctor in Law from Complutense University in Madrid. Presently, he is the Pro-Dean and Professor of Philosophy of Law and International Law at the School of Bioethics of Athenaeum Pontificium Regina Apostolorum in Rome. Furthermore, he is a researcher of the Human Rights Institute at Complutense University. For 5 years he has been member of the Steering Committee of Bioethics in the Council of Europe and in 2005 he has been honoured with the National Prize of the Spanish Royal Academy of Doctors in the field of legal and social sciences.