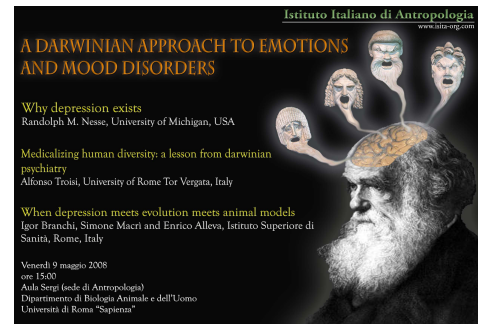


A Darwinian Approach to Emotions and Mood Disorders

venerdì 9 maggio 2008 – 15:00 - 19.00.

Aula Sergi, Dipartimento di Biologia Animale e dell'Uomo

Universita' di Roma "Sapienza"



WHY DEPRESSION EXISTS

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Despite millennia of thinking and decades of nomothetic research, we still do not know what causes depression. No biological marker can diagnose depression. No specific brain abnormality distinguishes depressives from normal people. We don't even have a scientific justification for distinguishing normal from abnormal depression symptoms. Slow progress may result from using only the proximate half of biology. An evolutionary approach suggests asking a new question: Why did natural selection leave all humans so vulnerable to depression? Of the six possible answers suggested by Darwinian medicine, the most likely is that depression is a dysregulation of a normal response. Mood variation is a useful capacity shaped by natural selection. In situations where efforts payoff, high mood offers advantages. In situations where efforts are failing, low mood protects against loss and motivates finding alternative strategies. If nothing succeeds, it disengages commitment from a goal. If a person cannot give up an unreachable goal, low mood is likely to escalate to depression. Much evidence confirms that mood is adjusted as a function of the rate of goal approach. However, the importance of pursuing unreachable goals for clinical depression has not yet been determined, nor do we know if motivational structure differences can help explain cultural differences in depression rates. This will require new strategies for analyzing idiographic motivational structures. Further work is also needed to understand the brain mechanisms that regulate normal mood changes, and the evolutionary reasons for wide individual variations in these mechanisms. We also need to investigate why natural selection has left mood systems so vulnerable to dysregulation. In addition to suggesting new research directions, this approach has immediate clinical applications. By bringing deeply idiographic data into a biological nomothetic framework, it encourages a new focus on the challenge of understanding individual lives. It may even help psychiatry to reallocate some investments from unreachable to reachable goals.

Web site

<http://www-personal.umich.edu/~nesse/>

MEDICALIZING HUMAN DIVERSITY: THE LESSON FROM DARWINIAN PSYCHIATRY

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The intent of this presentation is to introduce the evolutionary concept of alternative strategies into the fields of psychiatry and clinical psychology. In behavioral ecology, the term alternative strategies refers to the presence of two or more discrete behavioral variants among adults of one sex and one population when those variants serve the same functional end. Often discrete behavioral variants are associated with specific morphological,



physiological, and life-history characters. The concept of alternative strategies has been applied to human behavior to explain the origin of some behavioral syndromes that are currently classified as mental disorders or emotional dysfunctions. Antisocial personality could represent a high-risk strategy of social defection associated with resource acquisition and reproduction. Insecure attachment could represent an evolved psychological mechanism that used the quality of parental care received during childhood as a cue for optimizing adult reproductive strategies. Since a major contribution of evolutionary theory is the insight that individual differences are core biological features of any animal species, including *Homo sapiens*, the application of the concept of alternative strategies to psychiatry and clinical psychology can be a powerful antidote to the growing tendency to medicalize human diversity.

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WHEN DEPRESSION MEETS EVOLUTION MEETS ANIMAL MODELS

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Depression is a complex disorder resulting from a gene by environment interaction. Many efforts have been undertaken to develop animal models mimicking core symptoms of depression aimed at elucidating the neurobiological bases of the disease and at evaluating efficacy of psychoactive drugs. However, these models manifest a number of flaws. We will briefly review the most commonly used rodent models and describe their limitations in terms of biological meaning of both dependent and independent variables. The relevance of environmental/biological context to better define these variables will be discussed. Specifically, just as complex biological phenomena, such as psychiatric disorders in humans, can be defined only within a specific context (e.g. life events, social environment), so also should contextual features be rigorously considered when developing animal models of depression. In our opinion, the eco-ethological approach, which takes into account the environmental context and species-specific behavioural repertoire, is a valuable approach to refine current animal models of depression whereby aetiological factors and pathological symptoms will be addressed in their context. In conclusion, we will propose new strategies to study depression in animal models which may lead to a better understanding of the pathological mechanisms underlying the onset and progression of the disease.

