Brain Research Bulletin 85 (2011) 42–53

Contents lists available at ScienceDirect

Brain Research Bulletin

journal homepage: www.elsevier.com/locate/brainresbull

Review

# Sadness as a passion of the soul: A psychopathological consideration of the Cartesian concept of melancholy

Francisco López-Muñoz[a,b,*], Gabriel Rubio[c], Juan D. Molina[b,d], Cecilio Alamo[a]

[a] Neuropsychopharmacology Unit, Department of Pharmacology, Faculty of Medicine, University of Alcalá, Ctra. Madrid- Barcelona, Km. 33,600, Alcalá de Henares 29971, Madrid, Spain
[b] Health Sciences Faculty, Camilo José Cela University, C/Castillo de Alarcón, 49, Villafranca del Castillo 28692, Madrid, Spain
[c] Department of Psychiatry, "Doce de Octubre" University Hospital, Complutense University, Avda. Córdoba, s/n, Madrid 28041, Spain
[d] Acute Inpatient Unit, Doctor R. Lafora Psychiatric Hospital, Ctra. de Colmenar Viejo, Km. 13,800, Madrid 28049, Spain

ARTICLE INFO

*Article history:*
Received 8 June 2010
Received in revised form 12 January 2011
Accepted 31 January 2011
Available online 18 February 2011

*Keywords:*
Descartes
History of psychiatry
Melancholy
Passions
Pineal gland
Sadness
Soul

ABSTRACT

The relationship between the "passions" (emotions or feelings) and psychopathology has been a constant throughout the history of medicine. In this context, melancholy was considered a perversion of the soul (corruption of the passions). One of the most influential authors on this subject was René Descartes, who discussed it in his work *The Treatise on the Passions of the Soul* (1649). Descartes believed that "passions" were sensitive movements that the soul experienced due to its union with the body (*res extensa*). According to this theory, the soul was located in the pineal gland, where it was actively involved in overseeing the functions of the "human machine" and kept its dysfunctions under control, by circulating animal spirits. Descartes described sadness as one of "the six primitive passions of the soul", which leads to melancholy if not remedied. Cartesian theories had a great deal of influence on the way that mental pathologies were considered throughout the entire 17th century (Spinoza, Willis, Pitcairn) and during much of the 18th century (Le Cat, Tissot). From the 19th century onwards, emotional symptomatology finally began to be used in diagnostic criteria for mood disorders.



**Contents**



## 1. Introduction

The "passions," or the feelings and emotions as defined in modern scientific terms, have played a key role in the conceptualization of human nature ever since classical Antiquity. This is to a large extent due to their close spiritual links with the concept of the human soul [5]. Indeed, both Plato (427–347 B.C.) and Aristotle (384–322 B.C.) thought that the passions created distortion and a lack of balance, as they were thought to be the "animal part" of man. As a result, in Greek culture the belief took root that the passions altered the cognitive processes – mainly the emotions – and were the cause of madness. For this reason, it was impossible for the diseases of the soul, including melancholy, regardless of their

* Corresponding author at: C/Gasómetro, 11, Portal 3, 2°, A, 28005 Madrid, Spain. Tel.: +34 91 5300553; fax: +34 91 5300553.
*E-mail address:* francisco.lopez.munoz@gmail.com (F. López-Muñoz).

0361-9230/$ – see front matter © 2011 Elsevier Inc. All rights reserved.
doi:10.1016/j.brainresbull.2011.01.018

cause, to be anything but a perversion of the amina [23], a corruption of the passions, the "animal part" of the human being – the result of a process of disorder and chaos. This idea, as defined by various authors, was common currency until almost the end of the 19th century [5].

One of the history's most influential authors in this field was the great philosopher René Descartes (1596–1650), who provided an entire neuropsychophysiological doctrine on this subject. As is well known, Descartes postulated that the human soul must have a specific anatomical location. He believed that from this position, the soul supervised the communication between the human machine and its surroundings, and acted as an internal influence which exerted control over the precise functioning of the human body, including the passions. In the French philosopher's opinion, the divine spirit exercises its functions in the pineal gland [37]. He believed that the pineal gland was actively involved in the dysfunctions of the "human machine," and because it was where the soul was located, it played a key role in psychiatric disorders. Indeed, Descartes believed sadness to be a "passion of the soul," which led to melancholy if it was not remedied.

However, it was not until the 19th century, as a result of romantic and positivist medical trends, that the emotions began to be used in the definition and construction of mental illnesses on a scientific basis [5]. From that point on, emotional symptomatology became part of the diagnostic criteria for numerous pathologies in the psychiatric field, and especially those of an emotional nature. Likewise, and especially from a semantic perspective, the idea of melancholy began to be supplanted by the idea of a mood disorder, or more simply, a depressive disorder. This entity is now considered to be the most common psychiatric disorder, and according to various epidemiological estimates, may affect up to 25% of the population [40].

In this study, we will consider the Cartesian theories on the passions and their corruption as the root of melancholic mood disorders. These theories are based on a physiological explanation of the functioning of the human body which is especially thought-provoking in modern times, despite its errors, historical limitations and nuances.

## 2. Historical background

Mood disorders, described in classical terms as "melancholy," were possibly the clinical entities that were the first of all the mental illnesses to be subjected to analysis. However, the understanding of human spirituality has undergone profound changes throughout the history of western culture. The various theories of the philosophers and physicians of classical Antiquity and the imposition of Christian doctrine during the High Middle Ages led to the creation of a "seedbed," which made the emergence of the Cartesian psychophysiological and psychopathological theories possible. These factors will be analyzed in more depth below.

From the neurophysiological perspective, the School of Alexandria in Ptolemaic Egypt, the most distinguished representatives of which were Herophilus of Chalcedon (325–280 B.C.) and Erasistratus of Keos (310–250 B.C.), established a way of understanding how the nervous system worked that could be described as pneumatic-ventricular. These authors believed that after being transported from the lungs to the heart, air (cosmic *pneuma*) was turned into *pneuma zootikon* (*spiritus vitalis*, in Latin) in the heart, and was subsequently sent by means of the blood to the brain, where it became *pneuma psychikon* (*spiritus animalis*, in Latin) in the cerebral ventricles. However, it was Claudius Galenus, or Galen of Pergamon (131–200), who adapted this pneumatic theory, and created a physiological doctrine that would endure until the age of Descartes [21]. Like Plato, Galen divided the soul into three parts: appetitive, spirited and rational (located in the liver, heart and brain respectively) and talked about the three types of spirits or pneumatas (physical or natural, vital and psychic) that made up the human faculties (*dynamis*). He believed that these spirits were very subtle physical substances, which circulated in the various liquids of the body. The blood pumped in the heart was therefore directed to the *rete mirabile* of the brain, and created psychic pneuma or *spiritus animalis* in the lateral ventricles. This pneuma was then transferred to the spinal cord and the nerves (which were thought to be hollow) as an inductor of the *dynamis psykhiké*, which caused a muscular action [28]. As Spillane [55] points out, Galen's "hydraulic" theory of the spirits was the most enduring idea in the history of science.

In psychopathological terms, the doctrinal corpus of the *Corpus Hippocraticum* (5th and 4th centuries B.C.) maintained that the various parts of the organism, including the soul, were formed by the mixture of the four humors (blood, phlegm, yellow bile and black bile) in varying proportions (Fig. 1). Health was the result of a balanced mixture, while diseases, including those of the soul, were to due to an imbalance in the mixture of the humors, and the consequent predominance or lack of one or more humors and their respective qualities. In specific terms, humoralist thinkers believed that melancholy was caused by an excess of black bile (*melas chole*) or atrabilis ("dark bile", in Latin). Meanwhile, following Alexandrian pneumatic doctrine, Aretaeus of Cappadocia (1st and 2nd centuries A.D.) considered the illness to be a dyscrasia in the correct mixture of the four elemental qualities (heat, cold, dryness and moisture). This led to an alteration in the dynamic of the *pneuma* or *spiritus,* a refined product of inhaled air, through the ducts of the body [23]. These theories were the foundations on which Descartes built his psychophysiological doctrine.

Aristotelian philosophical ideas were also the cornerstone of approved medieval philosophy. With the rise of Christianity, during first the Patristic and subsequently the Scholastic period, the theological properties of the soul became more important, and its functional properties were of less interest. In an accomplished exercise in syncretism, Saint Thomas Aquinas (1225–1274) [50] made a distinction between a number of biological and relational functions (such as sensory perceptions) common to both men and animals, and the cognitive powers (or passions) that only human beings possessed, which he said were manifestations of the power of the soul over the body. This perspective was changed forever by Descartes, who defined the passions in Article XXVII of *The Passions of the Soul* as "apprehensions, resentments or emotions of the soul" [1,15].

However, physicians advocating reformed ideas based on the Galenic school, such as Arnau de Vilanova (1235–1313), maintained that mental disorders were not the result of changes in the soul, but instead its bodily instrument, i.e. the brain. Indeed, the intangible and divine nature of the soul made it difficult to explain why mental pathologies were a consequence of its involvement. These disorders were therefore believed to be essentially organic cerebral disorders, despite their hypothetically psychical origin, and were caused by imbalances in the emotions or passions. In his *Breviarium Practicae Medicinae* (1483), Arnau de Vilanova specifically attributes the origin of melancholy to an internal dysfunction of the animal spirits, which can lead to fear (*timor*), sadness (*tristitia*) and mutism [59].

Medieval ideas on the nature of the human soul continued to predominate during the Renaissance, as did theories on mental illness based on Galenism (as well as a new strand resulting from Christianity, which was based on moral factors, such as divine punishment and the superstitious belief in the intervention of evil). Among the leading advocates of the classical Galenic theory of the humors and their involvement in the origin of mental disorders was Juan Huarte de San Juan (1529–1588). In his only work, *Examen de ingenios para las ciencias* (*The Examination of Mens Wits*) (1575), Huarte de San Juan says that the proportion in which the humors are combined determines the various temperaments, i.e.