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The new science of man :
Thomas Reid and Paul Joseph Barthez

by

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The new science of man :

Thomas Reid, father of the school of Common Sense and Paul Joseph Barthez, father of the school of Vitalism

by Sabine Kraus

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Introduction

According to historians, the first to introduce Thomas Reid's thought into France was Pierre Royer-Collard, appointed to the chair of History of Philosophy at the Sorbonne in 1810, and Victor Cousin, his substitute and at the same time lecturer at the Ecole Normale. Théodore Jouffroy, Cousin's student at the Ecole Normale, provided French translations of Reid's complete works, published in 1828, as well as Dugald Stewart's Outlines of Moral Philosophy, published in 1826. Given the long-standing Paris-centrism of French cultural history, historians have overlooked the fact that during the Enlightenment, Scottish philosophy was introduced into Montpellier's Medical School by Paul Joseph Barthez, who taught Reid's common sense principles applied in medical thought to students in his lectures during the 1770s. Barthez, always aware of what was published elsewhere in Europe, studied Reid's *Inquiry on the human mind on the principles of common sense*, in its first French translation, Amsterdam, chez Jean Meyer, 1768.

These Scottish affinities lasted through the 19th century in Montpellier's Medical School, mastered by Baconian-Newtonian experimental philosophy and Reid's common sense principles. Moreover, we have to recognize the wide range of achievement of Montpellier's professors in reforms and improvements in medical ethics, teaching and science, agriculture, industry and economics. So that, in the mid-nineteenth century, Montpellier's Medical School was recognized as the best school in France to form general practitioners, this new kind of medical professional that would emerge in the mid-eighteenth century from the two leading medical centers of vitalism in Europe, Edinburgh and Montpellier.

1 – Context : Scotland and Languedoc

Thomas Reid's and Paul Joseph Barthez's works are part of a much wider European network of exchange and correspondence, building the new paradigm of progress in the age of Enlightenment. We do not know if direct relations occurred between Reid and Barthez, but strong common features are to be found in their geographical, historical and intellectual context, producing similar effects : same masters, same methods, and same conclusions. In Reid and Barthez's local context, Baconian and Newtonian methods were applied within a fusion between different disciplines, giving them the same vision of Nature.

Like Scotland, Languedoc was concerned to preserve and celebrate specific aspects of its culture. The States of Languedoc developed political and social forms that supported a philosophical thought with deep roots in local intellectual traditions, bridging religion, science and agriculture.

During the 16th century, Montpellier was an early bastion of Calvinism. The Reformation made powerful inroads of Protestantism in Languedoc, penetrating deeply into the rural world. By 1560, the majority of the population was Protestant. The influence of Protestant teaching and values was very strong. So that, at the beginning of the 18th century, the Catholic churchmen of Languedoc reformed the network of their colleges, following the pedagogical model borrowed from Calvinism, an ethos in which education was the duty of both parents and churchmen. Meeting in bishop Colbert's library, we find the main actors in the transformation of the social, scientific and material world in the States of Languedoc. Physicians, surgeons and naturalists, all of them professors of Montpellier's Medical School, Catholic as well as Protestant, formed the kernel of the Royal Society of Sciences in Montpellier. The Society also associated other members : mathematicians, astronomers, chemists, and engineers. Their activities involved institutional reforms, public works, and public teaching which would provide a model for Montpellier's University. The intellectual

aspirations of these learned gentlemen combines encyclopaedic spirit and local interest, linking art, sciences and techniques. The map of Languedoc, comissioned from the Society by the States, was the most elaborate cartographic work of this time.

The main source of the Diderot-D'Alembert Encyclopedie was the prestigious library of Camille Falconet, physician of Montpellier's medical school, and personal physician to the King. Falconet was a friend to Barthez's father. Guillaume Barthez, civil engineer of the Province of Languedoc, was an active member of the Royal Society of Sciences. When Paul Joseph went to Paris, after graduating from Montpellier's Medical School, Guillaume recommended his son to Camille Falconet. Falconet's library was the right place for Paul Joseph Barthez to yield to his precocious passion, studying and reading books.

Reid and Barthez developed their ideas in colleges characterized by a new era of teachers, appealing to the intellectual capacities of the faithful. Their thought matured in a landscape marked by scientific innovations applied in a spirit of the common good and social responsibility. It is in this spirit that Barthez was educated at the colleges of Christian Doctrine of Narbonne and Toulouse. Their practical humanism is also a characteristic of Scotland in which Reid's thought unfolded. Reid's familial context included great scientists from Scottish history, such as the "academic Gregories", of which his mother was a member. At Marishal College in Aberdeen, Reid was taught by eminent professors, like Maclaurin and Turnbull, who introduced Newton's Natural Philosophy not only in physics but also in morals. Due to his training, Reid acquired deep knowledge in mathematics, physics, medicine and botany before writing his *Inquiry*.

From their childhood, Reid and Barthez received a high level of education, due to the care of both family and churchmen. This education combined theology, literature and sciences. At the age of 16 years, Reid and Barthez possessed a wide range of classical and modern knowledge, they could unfold simultaneously. From these syntheses, they created new lines of reasoning regarding human nature, built upon their strong beliefs of the perfection of the natural world and the perfectibility of our mind. Bacon's disciples, Reid and Barthez undertook the renovation of the science of man: the human being as a "whole", and as an object of scientific study.

2 – Cosmos : Newton and Bacon

In the age of Enlightenment, Reid and Barthez held a unique place in the philosophy of science. They explained and applied Bacon's and Newton's rules into the science of human nature, defining man as a living and thinking being, who has the faculty of being affected by his milieu, the natural and cultural environment with which he has constant and provisional interactions.

During the 19th century, Montpellier's Medical School claimed Newton's Natural Philisophy as the only one it would admit, drawn from Bacon's rules, against the Cartesian "sectateurs" of Paris. Barthez's vital principle doctrine developed into an entire system of the science of man, regarding the relations between mind and body, the so-called "Montpellier's Double Dynamism".

Like Bacon, Reid and Barthez know they have to read the book of Nature. That is to say, to interpret phenomena, to understand the language Nature speaks to us. The knowledge of the language of nature thus consists of interpreting natural signs, and of discovering the laws of causality within the forms of nature itself, a living and intelligent nature. This knowledge can only be acquired by experience and observation of facts that phenomena present to us. This idea of scientific laws as being inscribed in forms of nature is nothing but Newton's experimental philosophy.

Newton's Laws of Nature : The order in which phenomena invariably follow one another.

> Reid, *Inquiry*, p 121-122: "It is proper to observe, that in the operations of the mind, as well as in those of bodies, we must often be satisfied with knowing that certain

things are connected, and invariably follow one another, without being able to discover the chain that goes between them. It is to such connections that we give the name of laws of nature; and when we say that one thing produces another by a law of nature, this signifies no more, but that one thing, which we call in popular language, the cause, is constantly and invariably followed by another, which we call the effect; and that we know not how they are connected." (1)

Barthez, *Nouveaux éléments de la science de l'homme*, p v-vi : "It is evident that primary causes cannot be defined in their essence, though we have an "interior feeling" (sentiment intérieur) of their existence. Phaenomena of Nature can only show us the order in which effects follow one another, tell us the rules according to which these effects are producted, and not what constitutes the necessity of this production." (2)

Reid and Barthez insist upon the fact that when Newton speaks of cause, he is referring not to efficient causes, or supposed causal links, but merely to regular occurrences which can be axiomatized as laws of nature. In the "General Scholium" which he added at the end of the second edition of his *Principia* in 1713, Newton makes clear this central point.

"I have not as yet been able to deduce from phenomena the reason for these properties of gravity, and I do not feign hypotheses. For whatever is not deduced from the phenomena must be called a hypothesis; and hypotheses, whether metaphysical, or physical, or based on occult qualities, or mechanical, have no place in experimental philosophy. In this experimental philosophy, propositions are deduced from the phenomena and are made general by induction. The impenetrability, mobility, and impetus of bodies, and the laws of motion and the law of gravity have been found by this method. And it is enough that gravity really exists and acts according to the laws which we have set forth and is sufficient to explain all the motions of the heavenly bodies and of our sea." (3)

Barthez defines his conception of the vital principle of man following Newton's method, in relation to the active principles that Newton discusses in Query 31 at the end of the Opticks :

"Seeing therefore the variety of Motion which we find in the World is always decreasing, there is a necessity of conserving and recruiting it by active Principles, such as are the cause of Gravity, by which Planets and Comets keep their Motions in their Orbs, and Bodies acquire great Motion in falling; and the cause of the Fermentation, by which the Heart and Blood of Animals are kept in perpetual Motion and Heat… For we meet with very little Motion in the World, besides what is owing to these active Principles. And if it were not for these Principles, the Bodies of the Earth, Planets, Comets, Sun and all things in them, would grow cold and freeze, and become inactive Masses; and all Putrefaction, Generation, Vegetation and Life would cease…". (4)

In his reformation of the science of man, Barthez goes farther :

Barthez, *Nouveaux éléments*, p. 1 : "Principles is the name I give to experimental causes of phenomena of movement and of life. Thus, I call Vital Principle of man, the cause according to which all phenomena of life are produced in the human body."

The laws of this principle are like the axioms of the mathematician, who cannot prove their truth. This notion of truth is not given us by reason, but by what Barthez calls the "sentiment interieur", (interior feeling). Reid, in the same manner, when defining the first principles of our reasoning about existence, our perceptions, gives them the authority of axioms. For Reid and Barthez, the truth of their principles will override proofs given by reason, because they answer to the design of the Author of Nature.

Both Reid and Barthez, whose texts and thought follow Newton's philosophy of science regarding the principle of life, define it as " the agency of immaterial powers in the human

frame." (5) In order to read what Bacon calls the “grammar of the language of nature”, Reid and Barthez proceed by inductive reasoning from analogies with facts that are more familiar to apprehend unknown causes, causes “occultes”, that is to say not directly known by the visible appearance of external signs. In his science of Indications, or science of signs, by which he determines the method of curing diseases, Barthez takes Newton’s universal algebra as his model. Starting from a configuration of known parameters, this algebra makes him able to calculate, according to the laws of the vital principle, the unknown *x*, that is the inner and invisible cause of the disease.

And against Descartes’s conception of the relation between man and Nature : "we should make ourselves as masters and possessors of nature”, Reid and Barthez return to Hippocrates, whose precept is to listen and to follow nature, a nature from which man is not isolated, but of which he is a part, as a “whole”. Reid, speaking about education, refers to Hippocrates’ medicine.

> Reid, *Inquiry*, p. 202 : "When the education which we receive from men does not give scope to the education of nature, it is wrong directed ; it tends to hurt our faculties of perception, and to enervate both the body and mind. Nature hath her way of rearing men, as she hath of curing their diseases. The art of medicine is to follow Nature, to imitate and to assist her in the cure of diseases ; and the art of education is to follow Nature, to assist and to imitate her in her way of rearing men."

In the same way, Barthez’s vital principle will be hurted by remedies not respecting his proper nature.

Concerning cultural and natural education, both Reid and Barthez quote the same example about savages :

> Barthez, *Therapeutic Lectures*, p.144 : "In all sciences, we have to consider a system as a machine we use to rise up higher than we would do without its help. But if from this point of view, systems have advantages, on the other hand, they have the disadvantage to weaken our mind, because they are instruments used by it. So that Savages have a great number of faculties which we lack, due to the great number of instruments we have to provide our needs." (6)
>
> Reid, *Inquiry*, p. 201 : "The education of nature is most perfect in savages, who have no other tutor; and we see, that, in the quickness of all their senses, in the agility of their motions, in the hardiness of their constitutions, and in the strength of their minds to bear hunger, thirst, pain, and disappointment, they commonly far exceed the civilized."

Their common scientific method brings both of them to study human nature according to the same principles. Through an analysis of human faculties, they have built a just system of the simple and original laws of our constitution, and from them, an explanation of the various phenomena of human nature. Our humanity consists in being animated by laws of nature, and at the same time, in being affected by impressions received from our external world.

3 – The art of observing

The main part of medicine is the knowledge and cure of diseases. Barthez underlines it, by saying that the method of curing diseases is the noblest part, and the only purpose of medicine. This knowledge chiefly depends on observation of facts. Medical literature, at the beginning of the Enlightenment, is constituted by a great number of catalogues collecting simply empirical data.

Francis Bacon, in *The advancement of learning* published in 1605, describes this state of art :

> "We see it is accounted an error to commit a natural body to empiric physicians, which commonly have a few pleasing receits whereupon they are confident and adventurous, but know neither the causes of diseases, nor the complexions of patients, nor peril of accidents, nor the true method of cures."

Following Bacon, Barthez draws a report about this medical empiricism :

> "The physician acts only by instinct, without being able to explain his choice concerning remedies. It would be better for him to know it, he would walk more surely and even could give account of his steps."

The methodology that Barthez develops in his therapeutic lectures, at Montpellier's school, is done in the same way as the methodical work done in Scotland. The creation of the medical school of Edinburgh in 1726 was followed by the creation of the Society for the Improvement of Medical Knowledge in 1731. Headed by Alexander Monro *primus*, the Society publishes the first volume of the *Medical essays and observations* in 1732.The foreword starts with the same reasons " to complain of the abuses in Medicine, whose study is under a necessity of perusing such Numbers of Books and prolix writings, whereas some pages could contain what is of novelty and of value in each of them. "

In a much more pragmatic approach, the network is immediately available for sharing, spreading and publishing goals. "The Booksellers whose Names are on the Title-Page are in charge to transmit the papers carefully to the Society, and are from Edinburgh, London, Dublin, Glasgow and Amsterdam. The preface presents the concept of the publication, the contents of each volume on the subjects of history, remedies, chemistry, anatomy, animal economy, theory and practice of surgery and physic, creating a reliable scientific database to improve medicine, through Correspondents from Europe and North-America. The Collectors draw formal rules and scientific methods to write observations of natural facts : histories of diseases, epidemics, meteorological registers, which must be steadily and accurately kept locally to also be compared with any Accounts of the same Nature sent from other Places." (7) The design and usefulness of this work reveal the importance of medicine and natural sciences as a compound of the Scottish Enlightenment knowledge. The reputation of the "Mémoires d'Edimbourg" grows over all Europe and north-America, being the main reference of modern knowledge concerning the science of medicine throughout the 18th century.

3.1 - Reasoned empiricism

Barthez, like the *Medical essays* Collectors, complains also of self-interest and vanity that are "infirmities" of our mind. On both side, candour and accuracy are the two qualities required to make good observations. Following Baconian principles applied by Scottish physicians, Barthez combines reason and empiricism. The new medical science has to be formed upon a body of reasoned empiricism.

> Barthez, *Therapeutic Lectures*, p.144-145 : "We now have to consider the sources where we have to find the rules of our conduct. The first of these sources is observation.....Everyone sees, but few observe. Because in order to observe, we have to see with reflection..... To make good observations, we must read authors, compare their observations with our own, and from these we can lay down general rules ; and we have also to consider the modifications due to local context. "

This method of observation is applied in an equal rigor by Reid in his *Inquiry into the human Mind*.

3.2 – Medicine and agriculture

The stress upon local modifications is a characteristic to be found in the *Medical essays*. It should be noted that the Meteorological Registers used in the knowledge of epidemic diseases are used as well for improvements in agriculture. The will to concentrate on local

concrete singularities and at once to allow generalizing approaches, is a concern to be found in medicine as well as in agriculture, two areas that characterize Scotland and Languedoc. The authors writing about these disciplines have also the consciousness to be part of a broader and collective work, by giving solid rational principles to the knowledge of Nature.

In the age of Enlightenment, Nature is the principle that unifies all narratives, and the interpretations of Nature are done within a dynamic and processual approach. For in Nature, elements are never isolated, they are always compounds linked in a dynamic and provisional process. The Vitalism Barthez introduces into medical science is part of a broader perspective vitalizing nature in the Enlightenment. (8)

In agriculture, the first theoretical work is Francois Quesnay's *Tableau économique*, published in 1758. Surgeon and physician, but born to a farmer family, Quesnay presents agricultural economics as a coherent systemic field, translating the discovery of circulation of the blood into economical activities and exchanges. At the same time, other pragmatic researches are done with the purpose of immediate improvement of agriculture on a more regional level, in Scotland as in Languedoc. Their intention is to promote a reasoned practice of agriculture. The first book of this line is published at the very beginning of the 17th century : the *Theatre of Nature* is the work of Olivier de Serres, a Huguenot from the South of France. And values of practical humanism for the common good, are values inherited within a Protestant tradition, a tradition Languedoc shared with Scotland.

Guillaume Barthez's writings about agriculture are published at the same time as Lord Kame's works. Both of them are gentlemen-farmers, and they claim that agriculture is the first art. The instructions they give in their works are based on repeated experiments and accurate observation. They combine philosophy and useful practice for the good of their Provinces. Having observed the variety of the soils, of the influence of climate and atmosphere within the Province of Languedoc itself and its history, Guillaume Barthez notices that general treatises of agriculture are not calculated for the climate and practices of his province. And from observation and experience alone, in the style of a true physiocrat, he lays down general rules for his Province. In order to explain certain phenomena he observed about bees, he will have recourse to psychological, sociological and moral human values and situations.

Thus, Barthez's works, as Reid's, are part of a general vision of Nature as a "life of relations" within which spirit emerges as the chief principle from which the universe is made.

3.3 – Reid's definition of "acquired perceptions" and Barthez's "calculus of experience"

> Barthez, *Therapeutic lectures*, p.4 : "Some physicians who by intuition have a kind of divination, recognize at the first aspect the particular character of a disease, and know which symptoms are to be drawn aside, in short, they observe perfectly. It is the effect of a prompt imagination, to see at once all the varieties of a disease, and to form, from their well observed agency, a clear idea of the nature of this disease. And often, there are unperceivable nuances which are closer to the disease that determine the physician in his method of cure.
> Thus, we are able to know the dominant *conceptus* of an illness, and from where it starts, and we feel it, better than we are able to express it, and according to it we are able to combine just analogies, and determinate the true method of cure."

Conceptus is a word used in biology, referring to the living organism's design process, at any stage of development from fertilization to birth, including the embryo and extra embryonic membranes. This word used by Barthez shows us the morphological character of his direct approach to perception. When Barthez speaks of imagination, he means an anticipation, a way of visualizing the movements of the illness, in order to lay down a prognosis that has to be a prompt and sagacious decision. Visiting a patient, the perceptual act of the physician is the building of a knowledge affording an action, the cure of an illness ; because "the purpose of medicine, is the perception of what is to be done by means of therapy." (9)

The original perceptions, increased by the calculus of experience, in the perceptual act itself, are part of a process defined by Victor Rosenthal as *Microgenesis*, a process which develops and stabilizes through dynamic unfolding and differentiation. The phenomenological status of individuated forms acquires, *ipso facto*, value and meaning, and immediately categorizes them on a global dynamic basis in view of prospective action. (10) When studying the character of an illness and the patient's nature, Barthez is observing natural phenomena, in a specific relationship with his patient, in which "Perception does not consist of internal entities representing the external objects, but rather of an activity directed at them : a direct approach to perception....The very first perceptual (sensory) stage is informative (meaningful)", in order to grasp in the clearest manner the patient's nature and the character of the illness. The observer and his environment are complementary. (11) The concept of nature, here, is defined as " that of which we have experience in practice."Perception, for Barthez as for Reid, has to deal with notions of typicity, of features, notions which are also a process, as a feature can influence and transform another, there is a character of mobility in these notions. Perception is a mode of orientation in a context. (12) Barthez insists upon the exploratory aspect of perception. Thus it is not only the diversity of diseases, but also the diversity of the individuals that are the difficulties of his art.

3.4 – Idiosyncrasy – temperaments – habit and custom

Barthez defines his notion of temperament as "being built from nature and habit. The most special aspect of temperament in every human being is idiosyncrasy, or the proper and individual constitution of each person, and consequently different from others. And this constitution cannot be known *a priori*." The power of habit brings modifications to the temperament given by nature. And it is only by experience that the practitioner will be able to get closer to a happy prognostic for the individual person he has to cure.
During his therapeutic lectures, Barthez quotes examples of curious cases concerning the power of habit, taken from common life affairs, like Reid. Thus the people who are for a long time accustomed to sleep in the neighbourhood of a great noise (as the noise of a mill - or of a city for Reid), then find it difficult to sleep when they can no longer hear this noise.

From the diversity of behaviours and situations in our common lives, Reid and Barthez will found their observations upon primary laws of uniform principles in mankind : laws of human nature based on common sense and the careful observations of these two great thinkers.

Barthez is also a psychologist in relation to his patients, because for a physician, the soul has to be considered as a faculty added to the other faculties of the living body, which active powers take part in the agency of the vital principle forces.

> Barthez, *Therapeutic Lectures*, p. 60: "When the delirium is advanced, it is necessary to present to the patient objects which awake his attention, and to recall it to familiar things. One must read some good pieces to a man who loves literature, one must play some pieces of good music to those who appreciate it. All these remedies were known in the past, but are almost neglected today."

Faithful to Hippocrates in his moral attention regarding the relation between the physician and his patient, Barthez defines the human physician by the pleasure of relieving the patient, of finding the truth of the reasons of his sorrows and of comforting him. The testimony of good consciousness and the pleasure of having done his duty are for Barthez the best evidence of a useful medicine for the good of the population.

Barthez takes idiosyncrasy into account regarding his students, defining his art of teaching :

> Barthez, *Therapeutic Lectures*, p.1 : "The most perfect method to teach should be different for every man, because as each individual person has a specific capacity different from the others, we should present to him the precepts of all he wants to be well educated in the more analogous manner regarding the degree of energy of his conception, and his faculty of feeling."

It is Barthez's art of teaching which will carry his reputation through all Europe, an art whose perfection was recognized by all French biographers during the 19th century.

3.5 – Barthez's medical ethics

In his "Life of the Author", writen by Antoine Barthez de Marmorières (13), Paul Joseph's brother, we discover the importance of religion in Barthez's moral values, whose first vocation was priesthood. It is a characteristic not so often to be found highlighted by biographers and historians of medicine. The features presented by this literature are mostly a hot-tempered and ugly man. On the contrary, the portrait painted by his brother reveals to us a sincere and generous man, who never lied.

> Antoine Barthez de Marmorières, *Théorie du Beau dans la Nature et les Arts*, p. 40 :
> "He always stood for an enemy of philosophical intolerance which sought to depress men's piety. He enjoyed to defer his thoughts and hope towards this happy and interminable union of good men, promised by the God of the Christians. He applauded our religious funerals after a death, and sometimes provided the expenses for them; finally he never missed, when seing one of his patients making profession of Christianity in an imminent danger, to inform his family so that they could provide consolations and helps of religion to him.
> Proud of his medical profession, he practiced it with greatest dignity. Once the patients adopted, he left everything for them during the day; the dreams of the night returned their presence to him; their return to health gave him the rapture of joy: their death made run his tears."

Consultant physician to the King and Duc d'Orléans's personal physician, Barthez was prompted by prudence to return to his native Province in 1789, when the French Revolution took place. During fifteen years, he healed the population but he took no fees. After having cured contagious diseases, the towns of Narbonne and Perpignan dedicated public actions of recognition to Paul Joseph Barthez. And he would eventually become president of the district council of Aude for two years.

This ethical portrait of Barthez is the epitome of the good doctor, who has to put common good over his personal interest, giving him the sense of duty regarding his patients. Barthez will teach this medical ethics trhough his writings and lessons. His demonstration of the "moral and technical superiority of the desinterested gentleman of science" is based on the same Christian values as John Gregory, of whom Reid was the friend and mentor. This moral in medicine is to be found in the humanism of Hippocrates, the father of scientific medicine. (14)

The medical schools of Edinburgh and Montpellier will be characterized by their common art of teaching a practical and human medicine, with a sense of public responsibility. From this teaching the modern professional called the "general practitioner" would emerge.

We then can ask why historians have classified these persons as "conservatives", because they were part of the vanguard of their time, and at the same time, they were the last humanists in the age of Leonardo da Vinci's Renaissance.

NOTES

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5 - *Thomas Reid On the Animate Creation* : Papers Relating to the Life Sciences. Edited by Paul Wood. University Park: Pennsylvania State University Press, 1995. p. 48-50.

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8 – See Reill, Peter Hanns, *Vitalizing nature in the Enlightenment*, Berkeley ; London : University of California Press, 2005.

9 - See Jacques Lordat, Caractéristique du Vitalime, in *Essai d'une caractéristique de l'enseignement médical de Montpellier, développée dans les quatre premières leçons du cours de physiologie*, Libraire médicale de Louis Castel : J.-B. Baillière, Germer-Baillière, Fortin Masson et Cie, J. Rouvier, 1843. p. 11.

10 - See Victor Rosenthal, *Microgenesis, immediate experience and visual processes in reading*, http://formes-symboliques.org/article.php3?id_article=86, 2002, p. 6-7.

11 - See AA. Ben-Zeev (1986). *Reid's Direct Approach to Perception*. Studies In History and Philosophy of Science Part A - Volume 17, Issue 1, March 1986, Elsevier B.V., Amsterdam. Pages 99-114.

12 – See Colloque “Qu’est-ce qui est réel ?” - Organised by: Claude Debru (ENS), Giuseppe Longo (CNRS) et Thierry Paul (ENS) - *Qu’est-ce qu’une théorie réaliste de la perception ?* by Jocelyn Benoist (univ. Paris I), 27th September, 2005 at 13:30. ENS, Paris.
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