

Humors, Passions, and Consciousness in Descartes's Physiology: The Reconsideration through the Correspondence with Elisabeth

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Abstract: By pushing Descartes to more clearly explain the union of body and soul beyond the functioning of a “strong” passion, namely sadness, Elisabeth wants Descartes to review his idea of the passions, and his understanding of the “theory of the four humors.” This chapter aims at showing that Descartes turns away from Galen’s theory of the humors, which he globally adopts in the 1633 *Treatise of Man*. With the shift in his conceptualization of the humors between this *Treatise* and the *Treatise of the Passions* (1649), Descartes analyzed more specifically the inner feelings, consciousness, and the passions, by considering that a man is not simply a body, but a psychophysical being, with a body and a soul.

Keywords: René Descartes, Elisabeth of Bohemia, passions, humors, animal spirits, consciousness.

1. Introduction

In René Descartes’s *oeuvre*, his readers and critics play a major role, as they push the philosopher to reconsider some of his quintessential philosophical and scientific terms in his work in progress. This critical engagement with Descartes enables one to identify essential changes in his philosophical positions, one of which concerns Descartes’s understanding of the concept of the passions, which he modifies after exchanging letters with Princess Elisabeth of Bohemia about her sadness and melancholy. In this case, we can see an important shift from the concept of humor, which is used by Descartes in the *Treatise of Man* (finished c. 1633), to that of passion, present in his *Treatise of the Passions* (1649).

The term “humor” (French: *humeur*) as Descartes understands it goes back to the Galenic theory of fluids in the body, which trigger various moods, character traits and even diseases. In light of recent scholarship, we now know that Descartes read Galen and took a course on him at the University of Leyden (Bitbol-Hespériès 1990, 31–52; Starobinski 2012, 21–34 and 42–6; Lebrun 1995, 18–25; Teyssou 2002). Galen greatly influenced the medicine of his time by continuing the Hippocratic theory of body-fluids. The theory of the four humors was taken up again by many philosophers in the Renaissance (es-

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pecially in the 16th century) to describe the human body and above all to understand melancholy.

The word “humors” historically in ancient and medieval western medicine has two meanings: first, in Hippocrates’s and Galen’s theory, the humors are “the nourishment of the body, i.e. of its tissues, which consequently owe their existence to the humors” (Temkin 1973, 17) that is, they refer to the four main vital bodily fluids (blood, yellow bile, phlegm and black bile: Hippocrates 1823; Hippocrates 1983). It is especially Galen who retains humorism¹ as a medical theory and proposes taking account of imbalances in any of the four humors as a means of diagnosing patients with a variety of diseases (Galen 1916, book 2, chapter 8, 169–95, and chapter 9, 209–19). This imbalance is the direct cause of certain diseases and is usually inflected by variations in weather, geography, age and even by certain occupations or works (Galen 1981; Galen 2007–2019, and especially, Galen 1995). Secondly, Galen describes humors as being related to temperament,² usually accepted as psychological dispositions, which Galen, however, uses to refer to bodily dispositions. These bodily dispositions give information about mood, behavioral and emotional inclinations and about predispositions for certain diseases. Therefore, it seems logical that Descartes at first refers to Galen, when he discusses melancholy with Elisabeth.

In the *Treatise of Man*, Descartes adopts the term “humor” and agrees with Galen’s explanation. However, his understanding of the humors and passions changes during the correspondence with Elisabeth, from 1645 onwards,³ even if he had already discussed passions and animal spirits in his correspondence with Henricus Regius in the early 1640s. The correspondence with Regius mainly concentrates on the metaphysical understanding of passion as a thought and on the interaction between an agent (the body) and a patient (the soul). In the correspondence with Elisabeth, however, Descartes seems to be pushed to consider body and soul united, equally involved in the process of causing and reacting to the passions, as Elisabeth pushes him in this direction through her own arguments on sadness.

¹ See Temkin 1973, 103: “The doctrine of the four humors was not Galenic; it was Hippocratic. But the emphasis on these four humors as the Hippocratic humors, the linking of them with the Aristotelian qualities and with the tissues of the body was largely Galenic.”

² For Galen, the excess in one of the four humors produces the four main temperaments: sanguine, choleric, melancholic and phlegmatic. Like the humors, the temperaments are inflected essentially by age, but also by weather conditions and seasons. See Temkin 1973, 103: “In a rather complicated way traced by Klibansky, Saxl, and Panofsky, such characterizations coupled to the four humors of blood, phlegm, yellow bile, and black bile came to constitute the four classical temperaments: sanguine, phlegmatic, choleric, and melancholic. Today they survive as popular psychological types, whereas in the Middle Ages they were at once somatic and psychic.”

³ See the Introduction to Elisabeth and Descartes 2007, 30: “Just like Galenic medicine, mechanist therapeutics models the body as a hydraulic system. However, Descartes’ mechanist model differs from the Galenic model in that the fluids of the body are all of one kind of matter—the only kind—and the parts of the blood are distinguished only by their size.”

While in the *Treatise of Man* Descartes used the concept of inner feelings (caused by external objects or by internal dispositions of the body), humors and passions, he only clearly differentiates between humors and passions, and between inner feelings and passions, in his correspondence with Elisabeth and in his subsequent works. The passions are all thoughts that are evoked in the soul without her will being involved (AT 4, 310; CSMK, 270), while the inner feelings, on the contrary, are caused by external objects or by internal dispositions of the body.⁴ This then raises the question of what caused Descartes to examine all of these terms more carefully. What role did consciousness play in the humors and the passions? And why does he remove some of these concepts from his theory of the passions?

At the beginning of the correspondence with Elisabeth, Descartes has a slightly different interpretation of the concepts of passions and humors. But by discussing the sadness and melancholy⁵ which burden Elisabeth in everyday life, Descartes understands that he needs to explain the functioning of the passions more precisely. The interaction between body and soul plays a decisive role in arousing, triggering and controlling the passions. Therefore, Descartes must examine the elements that trigger the soul or body to discover what causes the passions. As is well known, Descartes uses the term “passion” in three different contexts: in physics, in physiology and in psychophysics.

In physics, a passion is anything that ‘takes place or occurs’ as the result of ‘that which makes it happen’ (AT XI 328, CSM I 328). In physiology, a passion is a corporeal impulse of the animal body (AT V 278, CSMK 366). In psychophysics, ‘passions of the soul’ are modes of the soul that ‘depend absolutely’ on actions of the body (AT XI 359, CSM I 343) (Brown 2016, 563–69).

This chapter will especially focus on the two last dimensions in physiology and psychophysics, by identifying the role that comes to consciousness in the passions.

This chapter will show that the discussion with Elisabeth about her sadness or melancholy launches a different understanding of the passions and constitutes the turning point for Descartes’s change in the understanding of the concept of the humors. There are several studies of Elisabeth’s melancholy and the correspondence with Descartes.⁶ In this context, Elisabeth’s precise analysis

⁴ See Descartes to Elisabeth, 6 October 1645: AT 4, 310; Elisabeth and Descartes 2007, 118: “From all this it follows that one can generally call passions all the thoughts that are excited in the soul in this way without the concurrence of its will, and by consequence, without any action coming from it, but only from the impressions in the brain. For everything that is not an action is a passion. But one ordinarily reserves this word for the thoughts that are caused by some particular agitation of the spirits. Those that come from exterior objects or even the interior dispositions of the body, such as the perceptions of colors, sounds, odors, light, thirst, pain, and similar ones, are called sensations, some external, some internal.”

⁵ For this subject see also: Bitbol-Hespériès 2000; Ebbesmeyer 2011; Koch 2008, 60–5.

⁶ See also: Descartes 1989: In the Introduction to these letters from Descartes and Elisabeth, Jean-Marie Beyssade analyses Elisabeth’s personality and her role in the correspondence. See also Kolesnik-Antoine and Pellegrin 2014; the Introduction to Elisabeth and Descartes

of the interaction between body and soul in the union is often brought up, and Descartes scholars have shown that she calls on Descartes to explain the union and passions more clearly. However, no one has dedicated a complete study to Descartes's modification of the concepts of the humors and passions all through his own works, from the *Treatise of Man* to the *Treatise of the Passions*.⁷

Therefore, it is important to take a close look at this change and to show the role played by Elisabeth's letters, especially those written in 1645. In this context, I will start by explaining Descartes's interpretation of the humors in his early work, and the passions in his later work, in order to clarify the shift between these two concepts. Thereafter, I will analyse Elisabeth's letters about sadness and melancholy and Descartes's responses to find the pivotal element in Descartes's change of understanding. Elisabeth, by describing her own sad feelings and thoughts, helps to change Descartes's view of the passions so that the concept of humors is no longer appropriate.

2. From the Humors to the Passions

In the *Treatise of Man*, completed in approximatively 1633, Descartes explains his view of the human body in connection with the humors. In this text, he deals primarily with the Galenic theory of liquids, their trigger elements and their consequences for the human body. However, between 1633 and 1649, Descartes revisits his understanding of Galen's theory, from which he has been increasingly turning away since 1645, in order to elaborate his own theory of the passions.

In the *Treatise of Man*, in 1633, when Descartes describes the inner feelings⁸ (French: *sentiments intérieurs*), he uses the term "humors" to refer to bodily fluids in a manner that we can acknowledge mirrors Galen's theory, which associated the

2007; Meschini 2008. In this chapter, the author highlights the importance of the correspondence, because it provides a clue to the chronology of Descartes's works and helps to understand the development of the Cartesian vocabulary. In Ebbersmeyer and Hutton 2021, Descartes's correspondence with Elisabeth and the issue of passions are discussed in several contributions. However, it is almost always analysed in the context of the mind-body problem or the idea that the mind can direct the passions. There is no discussion of the extent to which Elisabeth had an influence on Descartes's understanding of the humors and the shift towards the passions.

⁷ We have some precise studies on Descartes and his correspondent Regius: Verbeek 2017; Bos 2017; Verbeek 2020; and on some precise concepts involved in the theory of the passions: Terestchenko 2004; Talon-Hugon 2002; Shapiro 2003.

⁸ The word "inner feelings" designates all the different perceptions, i.e., the "inspections of the mind" (see for example the "wax argument" in the *Second Meditation*). The perceptions coming from the five senses are inner feelings triggered by an external object, and the perceptions triggered by an internal disposition of the body, i.e., an excitement triggered by the soul itself, are inner feelings with an internal cause. This excitement triggered by the soul itself could be generated by an act of consciousness, where the soul becomes aware of its relation with the body and its involvement in the passion itself.

humors with the juices produced by digestion.⁹ Descartes invokes the first sense of the word “humors,” i.e., the liquids, when he describes hunger and thirst as inner feelings: “These fluids accumulate mainly at the bottom of the stomach, which is where they cause the sensation of hunger” (AT 11, 163, my translation; see also Kambouchner 1988; Meschini 2013, 53 and 57–76; Meschini 2015, 113–63; Des Chene 2001, 22). Following this description, Descartes then addresses the sensations of joy and sadness as if there were no hierarchy between these different inner feelings.

Thus, the blood going into the heart, when it is purer, finer, and flares up more easily than usual, gives the little nerve there the necessary disposition to cause the sensation of joy. And if the flowing blood is of a completely different nature, it can give the little nerve the disposition required to cause the sensation of sadness (AT 11, 164–65, my translation).

Descartes, whose understanding of the four humors is at this point in his thinking identical to that of Galen, claims that the liquids are solely responsible for the different sensations. For hunger, the digestive juices descend to the bottom of the stomach, and for joy and sadness, the blood flows into the heart. It seems that it is the quality of these liquids which triggers different reactions, without exogenous factors or internal dispositions of the body being involved. However, if the quality of the blood explains how joy or sadness are triggered, Descartes speaks of the meat that is in the stomach to explain how hunger is caused:

When the liquids that I have previously mentioned, serving as strong water in the stomach, and entering there unceasingly with all the mass of the blood through the ends of the arteries, do not find enough meat to dissolve in order to occupy all their force, they turn the force against the stomach itself. Agitating more strongly than usual the little threads of its nerves, the liquids make the parts of the brain move in the direction whence they come. This is how the soul, being united to this machine, conceives the general idea of hunger (AT 11, 163, my translation).

The connection Descartes sees between the inner feelings or passions, as he writes a little further (AT 11, 176) of those of hunger and those of joy is difficult to understand since it seems as if an important element is missing in the description of joy and sadness, namely the external or exogenous factor which is triggering the bodily reaction. The liquids in the stomach turn their “force,” their action against the stomach itself, when it is empty or when there is little meat in it. And this action (the “attack” of the liquids against the stomach) triggers hunger. But what triggers the different quality of the blood to create joy or sadness? Are joy and sadness only triggered by the liquids, without any exogenous element? But then, how can Descartes still speak of inner feelings or pas-

⁹ See Temkin 1973, 17: “In the process of digestion, food and drink turn into the bodily juices, the humors, of which there are four main kinds: blood, phlegm, yellow bile, and black bile.” As Galen’s theory associates humors with the juices of digestion, we understand that for Galen, the healing process of a disease caused by the imbalance of the humors must refer to food, drink and drugs. Descartes seems to mirror this idea, but after 1645, he will turn away from Galen’s theory.

sions in both cases, if their functioning is different? Is the key element in joy and sadness some kind of an act of consciousness, in which one realizes that one is directly involved in the passion, as a cause or trigger?

In the *Sixth Meditation* of the *Meditations on First Philosophy* (1641), we read the same association between hunger and joy as inner feelings, but Descartes omits here an external object that triggers hunger:

But why should that curious sensation of pain give rise to a particular distress of mind; or why should a certain kind of delight follow on a tickling sensation? Again, why should that curious tugging in the stomach which I call hunger tell me that I should eat, or a dryness of the throat tell me to drink, and so on? I was not able to give any explanation of all this, except that nature taught me so (AT 11, 60; CSM 2, 52–3).

In 1641, Descartes has to admit that he does not exactly know what the causes and the triggers are for the different inner feelings: pain, joy, hunger and thirst. Despite being taught by nature that there are in fact different triggers, Descartes cannot give any logical explanation. And he does not even speak any longer of the meat in the stomach or the diverted force of the liquids, but only about a bodily disposition (tugging) which causes the inner feeling of hunger. We notice that from 1633 to 1641, Descartes has reviewed his idea of inner feelings without discovering their real cause: they can be triggered by an external object as in 1633 (at least for hunger) or by an internal disposition of the body, as in 1641. In 1641, his theory clearly lacks clarity: he avoids talking about passions and liquids, and focuses only on inner feelings, but at the same time he no longer distinguishes between inner feelings triggered by external objects and inner feelings where no external object plays a role. This makes his theory even more confused.¹⁰

We also notice the same confusion in Descartes's letter to Regius of May 1641. Regius sees the seat of the passions in the brain, but Descartes refuses this in the first instance, even if this view will later be his own in the *Treatise of the Passions*, where all passions are considered thoughts (Verbeek 2017, 168). In 1641, Descartes clearly distinguishes between the body and the soul and locates the passions above all in the body:

To say of the passions that their seat is in the brain is very paradoxical and even, I think, contrary to your own view. For although the spirits which move the muscles come from the brain, the seat of the passions must be taken to be the part of the body which is most affected by them, which is undoubtedly the heart (AT 3, 373; CSMK, 183).

¹⁰ This confusion is maintained in the *Principles of Philosophy* (1644), where Descartes draws a list of experiences that refer to the body and the soul as a union: "This list includes, first, appetites like hunger and thirst; secondly, the emotions or passions of the mind which do not consist of thought alone, such as the emotions of anger, joy, sadness and love; and finally, all the sensations, such as those of pain, pleasure, light, colours, sounds, smells, tastes, heat, hardness and the other tactile qualities" (AT 8-a, 23; CSM 1, 209). This list refers to hunger and joy as a mixture of "thinking things" and "material things."

When the heart is the main seat of the passions, one could understand the “bodily disposition” of which Descartes speaks in relation to the inner feeling. But then again, there would be no clear distinction between inner feelings with an external object and those without an external object.

The confusion goes even further in this letter, as Regius does not accept considering passions as “passive.” According to him, “passions are acts of the thought,” and therefore cannot be purely passive. Descartes, however, states that attention “forms the basis of any passion,” and so this is not an act, “given the fact that it is involuntary”; “the acts of the mind belong, according to him, to the will.” Attention is involuntary and therefore passion is not an act. This is summed up in the idea that the body is an agent that acts on the soul. The latter only undergoes the passion; it receives it in a certain way. In Descartes, there seems to be a distinction between the agent (body) and a patient (soul), where the passions are only passively received (Verbeek 2017, 168–69). This commentary could explain the bodily disposition in the passions, to which Descartes refers after 1641, but does not clarify the distinction between inner feelings and passions.

However, in 1645, we will notice that Descartes begins to examine a possible distinction between passions and inner feelings,¹¹ probably because of Elisabeth, who is not content with a vague explanation, which will even shape another change in Descartes’s understanding of the concept of inner feelings. If we consider the two passages quoted above, we see that Descartes speaks of joy and sadness, and of hunger and thirst as inner feelings and that in 1633, he considers the inner feelings as synonymous with passions. And even in his letter to Elisabeth of October 6, 1645, Descartes considers them as synonymous, but he also determines a distinction between the inner feelings and the passions. Generally, passions are all the thoughts excited in the soul by the impressions in the brain. External objects, internal dispositions of the body, previous impressions which remain in the memory and the agitation of the animal spirits form different impressions in the brain.¹² These impressions trigger the passions, without the will of the soul being involved. In this case, the inner feelings and the passions are synonymous.

¹¹ AT 11, 349; CSM 1, 338–39: “After having considered in what respects the passions of the soul differ from all its other thoughts, it seems to me that we may define them generally as those perceptions, sensations or emotions of the soul which we refer particularly to it, and which are caused, maintained and strengthened by some movement of the spirits.”

¹² AT 4, 310; Elisabeth and Descartes 2007, 118: “Some are formed by exterior objects which move their senses, others by the interior dispositions of the body, or by the vestiges of the preceding impressions which remain in the memory, or by the agitation of the spirits which come from the heart, or in a human, by the action of the soul, which has some force for changing the impressions in the brain, as, reciprocally, these impressions have the force to excite thoughts in the soul that do not depend on its will.” See also Brown and Normore 2003.

Nonetheless, Descartes mentions an “ordinary and common” distinction between inner feelings and passions, so that passions are considered as “[...] thoughts which are caused by some special agitation of the spirits.” But

for thoughts that come from external objects, or from internal dispositions of the body—such as the perception of colours, sounds, smells, hunger, thirst, pain, and the like—are called external or internal sensations” (AT 4, 310; Elisabeth and Descartes 2007, 118).¹³

Thus, the inner feelings are a category of the passions (understood as a general concept), triggered by the internal disposition of the body or by some external object, which distinguish them from a “special sort” of passion, which are excited by the animal spirits. Consequently, the animal spirits are different from what Descartes calls the internal disposition of the body. Furthermore, the list of inner and outer sensations (French: *sentiments intérieurs et extérieurs*) no longer contains joy and sadness, but still hunger and thirst. Joy and sadness became passions, because they are triggered by the agitation of the animal spirits.

Consequently, in 1645, Descartes highlights that there must be a difference at the trigger level, as he noticed already in the *Treatise of Man*, where he could not define any exogenous element or factor for joy and sadness, but he has to admit that this difference is not easy to figure out:

But we denominate them in accordance with their principal cause or their principal aspect, and this makes many confuse the sensation of pain with the passion of sadness, and the sensation of tickling [*chatouillement*] with the passion of joy, which they also call voluptuousness or pleasure, and sensations of thirst or hunger with the desires to drink and to eat, which are passions (AT 4, 309; Elisabeth and Descartes 2007, 119).

Descartes speaks of the animal spirits, which participate in the passions without using the will of the soul. Thus, in contrast to the inner feelings, it is not necessary that the soul is touched by some perceptions caused by external objects or deliberately elicits reactions to generate the passions. There are precise triggers in the inner and outer sensations (like the meat in the text from 1633, but without Descartes examining this closely), but in the *Treatise of the Passions* Descartes only speaks of a “special movement of the animal spirits” (AT 11,

¹³ However, in the *Principles of Philosophy*, internal sensations and passions are synonymous: “The nerves which go to the heart and the surrounding area <including the diaphragm>, despite their very small size, produce another kind of internal sensation which comprises all the disturbances or passions and emotions of the mind such as joy, sorrow, love, hate and so on. For example, when the blood has the right consistency so that it expands in the heart more readily than usual, it relaxes the nerves scattered around the openings, and sets up a movement which leads to a subsequent movement in the brain producing a natural feeling of joy in the mind; and other causes produce the same sort of movement in these tiny nerves, thereby giving the same feeling of joy” (AT 8-a, 317; CSM I, 280). For the purview of this study, we will not go into detail about this work.

349), which could be, as we call it today, an act of consciousness. One is aware of the implication of the self in the passions, and therefore of the responsibility that falls to oneself: one can trigger or change some passions in the soul, by the will of the soul. This is why joy and sadness are no longer inner feelings and are said to be triggered by the movement of the animal spirits. Is this shift due to the fact that Descartes could not assign an exact trigger to joy and sadness? To answer this question, we have to understand Descartes's conception of animal spirits (Meschini 2013, 97–104).

When Descartes talks about the movement of the spirits in the passions, without a concrete trigger, we can assume that he refers to the Galenic theory.¹⁴ He had already written about these spirits in the *Treatise of Man*:

First, concerning the animal spirits, they can be more or less abundant, their parts more or less thick, more or less excited and more or less the same at any given time. Because of these four differences, it happens that all different moods (humors) or natural tendencies that exist in us (at least insofar as they do not depend at all on the state of the brain or the special affections of the soul) are represented in this machine (AT 11, 166, my translation).

For Descartes, the spirits are the elements responsible for the quality of the different liquids.¹⁵ Their number, their mass, their movements and their proportions correspond to the four liquids (Meschini 2013, 103). Descartes here takes up the theory of humourism from Galen, even if his description of the mechanism of the humors is somewhat different, as he speaks of the animal spirits and not of liquids. However, like Galen, Descartes speaks about four different reactions in the body, so that we can admit that Descartes's animal spirits function in a manner that recalls Galen's humors (Des Chene 2001, 52).

¹⁴ The Galenic theory of humors and animal spirits is even resumed by Ambroise Paré, who was probably read by Descartes. See Paré 1585, 12, my translation: "The humors are everything that is fluid, fluent, flowing, coming from the human body as well as from that of the animals that have blood, which is either natural or unnatural." To go further on the subject of the heritage of Galen and Paré, see also Teyssou 2002, 222, my translation: "The force animates and manages the various humoral functions. It comes from the animal spirits and the spirits of nature: the 'esprits animaux', coming from the brain and distributed by the nerves, are the instruments of the thinking and acting soul; the animal spirits, coming from the heart and distributed from the arteries, are the instrument of the passions of the soul; the natural spirits, coming from the liver, are distributed by the veins and control the functions of digestion."

¹⁵ See Des Chene 2001, 37: "There is another kind of particle, 'more lively and subtle, like those of brandy, acids, or volatile salts', which cause the blood to dilate but 'do not prevent it from condensing promptly afterward' (*Descrip.* par. 28, AT 11, 260). Such particles, 'quite solid and quite agitated', are the *spirits*. Unlike aereous particles, they do not tarry for long in the lungs, but go further, into the aorta, and toward the brain. Like the blood which rises toward the brain, they are eventually deflected, 'and tum to the right and left toward the base of the brain, and toward the front, where they begin to form the organs of sense' (261). Some of the aereous particles make their way along the same route."

In Galen's theory, the four main liquids go together with the four seasons, the four elements (fire, water, air and earth) and the four constitutions of the human body.¹⁶ Furthermore, these four bodily fluids, namely blood,¹⁷ mucus/phlegm, yellow bile and black bile, each have the four qualities (primary qualities) warm and damp, cold and damp, warm and dry and cold and dry. Even a slight alteration in these constitutions can have an impact on the balance between the liquids and create a disparity which is the cause of some extraordinary reactions of the body (i.e., a variety of bodily ailments or emotional disorders). Descartes generally agrees with Galen's understanding of the bodily constitutions and the liquids, and he even recalls the concept of animal spirits, present in Galen's theory.

If these animal spirits, for Descartes, cause different humors it is because they are responsible for the different qualities in these humors or liquids. This then would suggest that the animal spirits play a role in the inner feelings, as we saw with the passage of the *Treatise of Man* in 1633: the sensation of joy or sadness was caused by the quality of the blood going into the heart. But in his letter of October 6, 1645, Descartes assigns this role to the spirits only in the passions and not in the inner feelings. This could explain why joy and sadness are no longer inner feelings but are called passions. Furthermore, even Regius considers joy and sadness as passions,¹⁸ and Descartes must have known his theory and adapted his own as soon as he began to discuss with Elisabeth the role that the body and soul play in the passions. The latter are no longer merely elements of the body that the soul must endure as a patient. Nonetheless, Descartes's theory is not yet perfected in 1645, although he begins to change ideas.

In 1645, he only speaks of the external objects or internal dispositions of the body for the inner feelings, which are not clearly identified, and associates the animal spirits with the passions. If animal spirits and humors interact in the inner feelings (1633) and in the passions (1645), why does Descartes distinguish between inner feelings and passions in 1645?

When we accept and combine the two explanations about the animal spirits in the *Treatise of Man* and in the letter of October 6, 1645, then inner feelings and passions have to be triggered by the movement of the animal spirits, which first trigger the humors. This means that there is no exact difference between inner feelings and passions, at least not at the level of fluids. The only difference, which could be noticed, is the external object (or internal disposition) which

¹⁶ See Temkin 1973, 17: for Galen, "the elements of fire, earth and water do not exist as such in the body; they are represented by yellow bile, black bile, and phlegm, respectively. Only air is directly provided through respiration." Cf. Temkin 1973, 4, note 9.

¹⁷ See Temkin 1973, 17: "What is found in the veins is really a mixture of humors, but since the true humor 'blood' predominates, the name is also extended to the content as a whole."

¹⁸ Verbeek 2017, 166: "In sum, the basis of a passion (*affectus*) is a physiological process, by which either more, or less, blood is pumped into the body than usual. Moreover, passions manifest themselves at four different levels: the senses (pleasure or pain), judgment (joy or sorrow), the will (love or hatred), and action (liveliness or indolence)."

was however removed from the explication given in 1641. This external object causes a reaction in the inner feelings, as Descartes says in the letter of October 6, 1645, which recalls the text of 1633. Therefore, it is important for Descartes to distinguish between passions and inner feelings: passions are triggered without an external object or internal disposition of the body and inner feelings need these external objects or internal dispositions.

Furthermore, as noticed earlier, Descartes omits to speak of humors in his letter of October 6: he no longer mentions the liquids that trigger the inner feelings, as he did in 1633. But when we follow the Cartesian explication of the animal spirits, which we located even in the inner feelings, then there must be humors in the inner feelings. Why is Descartes so rough in his explanation in 1645? (Kambouchner 1995, 65–71). This is probably because his understanding of humors, liquids, inner and outer sensations and passions is being developed. While developing these notions, Descartes slowly breaks away from Galen's theory of humors.

For Galen, the humors were the trigger for various reactions in the body and even the cause of various diseases, and the temperaments were the natural disposition of the person. But for Descartes, the humors become the effects of the animal spirits and the animal spirits become the triggers of the various humors (in the sense of liquids, but also of tempers and moods), which show up in and through the body, i.e., they cause passions. This suggests that Descartes understands the word "humors" as being synonymous with moods too (a use that can already be read in Montaigne) and not as in Galen exclusively as liquids and pathogens of these moods. And temperaments, in Descartes, are sometimes seen as a

temporary condition of the blood, which can change under the influence of the passions, sometimes as the permanent disposition of an individual to have certain passions or to display a certain behavior, which either cannot be changed at all or can be modified only with great difficulty (Verbeek 2017, 169).¹⁹

And thus, Descartes can understand the humors in connection with psychological states, as Galen understood the temperaments, which are the personality traits of humans. Cartesian humors are more than simply bodily liquids (as in Galen's theory), and therefore, in the *Treatise of the Passions*, he has to define the humors only as moods, and the passions as a mixture of liquids (humors) and thoughts, as we will see.

Before we consider more precisely the passions, let us take a closer look at what distinguishes the humors from the passions and why it is so important for Descartes to no longer mix them in the *Treatise of the Passions*. Probably through the correspondence with Regius in 1641, Descartes became even more aware that a basic element of the Galenic theory of the passions is incompatible with his own

¹⁹ However, Regius understands temperament as "the particular configuration of particles by which the properties of a thing or the properties and dispositions of a living being can be explained," Verbeek 2017, 169.

ideas, namely the tripartite division of the soul. This tripartition plays a major role in the Galenic as well as in several Renaissance theories of the passions, as in Nicolas Coëffeteau and Jean-François Senault. Both admit that the passions are in the “irrational part of the soul” (Coëffeteau 1648, 2). For Coëffeteau, for example, the passions are caused by a movement of the sensory appetite, coming from this irrational part of the soul. However, since for Descartes this tripartition is void, he cannot adopt the Galenic theory one-to-one. Moreover, for Descartes, the relationship between the soul and the body is reciprocal, which he has to emphasize more strongly, since the correspondence with Elisabeth. Whereas for Coëffeteau, for example, the soul “changes the natural disposition [...], and by its agitation snatches it from the rest in which it [the body] found itself before the soul disturbed it in this way” (Coëffeteau 1648, 11). Thus, the moralist gives the soul a place and a function superior to the body; she can manipulate the body in the passions.

These two major differences with Galen, and with Descartes’s contemporaries push the philosopher into rethinking his theory of the passions. As already mentioned, the humors are, for Descartes, the effects, or reactions of the animal spirits, which move differently and have different masses. Thus, the humors denote different physical reactions in the body and no longer the triggers as with Galen. It is therefore clear that Descartes’s theory of the passions distinguishes not the humors, i.e., the liquids, from the passions, as passions include humors as the physical part of them, but the humors as moods from the passions. Descartes maintains the view of liquids as the cause of different reactions (such as when the blood transports the spirits, which heat or cool different organs).²⁰ Nevertheless, we have to notice that since 1633, Descartes’s humors already were not only bodily liquids as in Galen’s theory, but more of a psychological and psychosomatic state because they are also triggered by some impressions in the brain, by the animal spirits, and by the consciousness of oneself, involved in the passions. In the *Treatise of Man*, he writes: “But because the same moods (humors) or at least the passions to which they give a disposition, also depend very much on the impressions which are produced in the substance of the brain [...]” (AT 11, 167, my translation). Descartes here distinguishes between the humors and the passions “to which they give a disposition,” which means that the humors only trigger the passions. But how is it possible that Descartes describes the hu-

²⁰ The main difference between Galen and Descartes is probably the unitarian doctrine of the soul presented by Descartes. This idea does not come from Descartes, he probably refers to Ioannes Argenterius, “one of the most outspoken critics of Galen within the camp of academic physicians.” See Temkin 1973, 142: “Argenterius doubted Galen’s assertion that the psychic spirit was elaborated from arterial blood in the retiform plexus (the rete mirabile).” Therefore, he refuted the existence of three spirits. “There existed only one spirit, flowing from the heart and carrying heat, the instrument of life and of all actions. To this unitarian doctrine of the spirit corresponded a unitarian doctrine of the soul.” And even Descartes refuses to consider the soul as a combination of three different parts. For him, there are no more natural and vital souls, as for Galen.

mors as psychological states and at the same time rejects that they are already passions and only assumes that they trigger them?

Here we can clearly see that Descartes still follows Galen's theory when he says that the passions are excited by liquids in the body and the humors by the impressions in "the substance of the brain." The humors in Galen are the liquids that are produced in the body by the process of digestion, which then trigger some reactions in the body. These liquids can rise up to the brain as vapors in the body and awaken the spirits there, which then trigger passions or emotional reactions. In Descartes, the humors are dependent on the impressions in the brain, but they are not dependent on the state of the brain. The humors are only triggered by the animal spirits, which result from the impressions in the brain.

On the contrary, the passions, unlike the humors, are the result of the interaction of the body with the soul: they are caused by the humors and the will of the soul and are the visible bodily reactions. One could assume that the Cartesian humors or moods are the psychological effects in the body without being triggered by the state of the brain, but also not by the reactions of the body and still have their greatest effect in the body. The humors, triggered by the animal spirits, are the product of the "rational" soul, the only one Descartes accepts, and the impressions in the brain. This is the major difference with Galen, who admits three different souls: a natural, a vital and a rational soul, which each produces different kinds of spirits, triggered by the humors and different impressions. The Cartesian humors, however, only depend on the impressions in the brain and the spirits and are thus connected to the human being, by producing bodily reactions in the form of passions. In the letter of October 6, 1645, Descartes confirms this hypothesis:

Finally, when the ordinary course of the spirits is such that it regularly excites thoughts that are sad or gay, or other similar ones, we do not attribute this to passion but to the nature or humor of those in which they are excited. This makes us say that this man is of a sad nature, this other of a gay humor, etc. There remain only those thoughts which come from some particular agitation of the spirits, and of which we sense the effects in the soul itself, which are properly called passions (Elisabeth and Descartes 2007, 119).

So, the humors do not depend on the state of the brain, and reason cannot interfere in them, because they are produced by the impressions in the brain, without the will of the soul being involved. But the passions depend on the movements of the animal spirits, which produce the humors, and also on reason, which sends signals to the spirits and can also direct them. The passions are therefore a mixture of, on the one hand, the humors or the natural tendencies (the character of the human being), as Descartes understands them, which are stimulated by the impressions in the brain (which result from sensation) and on the other hand, the will of the soul. The passions grow from the interaction of the soul and the body, and reason can control them. This difference with the humors shows why Descartes can no longer speak of humors as liquids but only as moods, in the *Treatise of the Passions* because the passions are already a mixture of humors, i.e., liquids, and thoughts, controlled and influenced by reason.

As we have seen in the evolution of Descartes's thinking, there is a shift from the conceptualization of humors to that of passions, linked to the unitarian doctrine of the soul. But the question remains as to the main motive for such changes in Descartes's understanding. It is well known that Elisabeth plays a major role in clarifying the understanding of the union between body and soul. Probably her line of inquiry provokes Descartes to substitute the humors with the passions. In some way, she manages to convince Descartes that his understanding of the passions is a different system than Galenic theory. Using a "strong" passion such as sadness, she urges the philosopher to explain the union more precisely, and thus the role of reason in the passions. Elisabeth's sadness seems therefore the reason Descartes goes into more detail about the difference between humors and passions.

3. Elisabeth's Sadness: The Shift from the Humors to the Passions

In Descartes's letter of 18 May 1645, we learn that Elisabeth had been ill for a long time, suffering from a dry cough and a creeping fever, but that she was on the mend. In his letter,²¹ Descartes tries to analyse the cause of this physical "weakness" in order to find a cure for Elisabeth:

The most common cause of a low-grade fever is sadness, and the stubbornness of fortune in persecuting your house continually gives you matters for annoyance [...] One would fear that you would not be able to recover from it at all, if it were not that by the force of your virtue you were making your soul content, despite the disfavor of fortune (AT 4, 201; Elisabeth and Descartes 2007, 86–7).

For Descartes, the cause of the fever is clearly the sadness that causes excitement in the body. Elisabeth is so much surrounded by sad experiences that her sadness does not only show up on a face that is consumed but affects the entire body in the form of an illness. Descartes follows the Galenic theory by admitting that this illness is caused by an emotional disorder. However, Descartes turns away from Galen who attributes sadness to the imbalance of the humors. Or does Descartes's "new" understanding permit him to substitute the humors with the passions? How can we understand that the passions that were initially the effects of a cause, namely of the humors, now become the cause of the fever themselves? This is only possible if Descartes accepts that passion is a mixture of humors, impressions in the brain and thoughts guided by the soul.

In the Galenic theory of humors, negative thoughts like sadness and fear produce the fluids of the black bile. So, if a person is too long touched by or too busy with negative thoughts, there is an overproduction of this liquid (black bile), which can then no longer remain in the spleen and therefore overflows into the body. There, the black bile can inflict all kinds of harm, such as excessive

²¹ Numerous studies analyse Descartes's correspondence and his role as a doctor. See for example Kambouchner 2014.

sweating, digestive problems and bloating. But the most harmful is the vapors that climb up the body and hit the mind because they cause delusions or let people repeatedly have sad thoughts. These sad thoughts or delusions are the result of an overflowing imagination, driven by the vapors of the black bile.²² When this happens, proponents of Galenic theory speak of an illness. And Descartes seems to admit that the physical part of the passion, namely the humors, causes the bodily disease and even produces a vicious circle of negative thoughts, even if he does not explicitly say this.

However, the following letters to Elisabeth, in 1645, show that Descartes's understanding of humors and passions is still weak. As is already explicit in the letter of May 18, Descartes recognizes great strength in the virtue of the soul, which can fight against the negative thoughts, but he does not mention the role of the body. Descartes is convinced that these passions, at least sadness and anger, must be overcome because they provoke damage to the body if they are misused. And it is only the strength or the virtue of the soul that can free itself and the body from the passions and control them. Furthermore, if the soul manages to tame them, then it benefits from great satisfaction. Therefore, Descartes suggests that Elisabeth "heal" her soul or spirit, but he does not speak of a remedy for the body,

[...] whereas the others [i.e., the great souls] have reasoning so strong and so powerful that, even though they too have passions, and often even more violent ones than most do, their reason nevertheless remains mistress and makes it such that even afflictions serve them and contribute to the perfect felicity which they can enjoy already in this life (AT 4, 202; Elisabeth and Descartes 2007, 87).

Descartes seems firmly convinced that Elisabeth, on the one hand, can overcome her sadness solely through the strength of her soul or reason and that, on the other hand, she can use these negative experiences to gain greater happiness. That is why Descartes does not reject these passions as such, but their misuse, i.e., when instead of learning and growing stronger, souls remain in this state of sadness or anger and then fall into a kind of melancholy. So, in order to turn away from sadness, Descartes advises Elisabeth to occupy the mind with good and positive things and not to be confused by the negative events (Alanen 2003). One has to use his or her reason to lead and control the passions.

²² See Kutzer 1998, 99, my translation: "Headache is a further physical symptom (of melancholy); very rarely is a special type of 'fever' mentioned, as well as tremors [...] Precordial feelings of heat, pressure, pain, bloating, indigestion were signs of hypochondriacal melancholy"; 102: "It is discussed whether delusions of this kind are not favored by certain physical characteristics and complaints, such as a particularly delicate physique, flatulence and stinging in the stomach; or they discussed why delusion was based on physical characteristics, weaknesses and inclinations, occupations and labor." See also Bell 2014, 59: "It began life in antiquity as a subspecies of melancholia with a specific location in the organs below the diaphragm." For Galen, this form of melancholia is associated with flatulence and impaired digestion.

However, Elisabeth is not satisfied with this explanation and advice and asks the philosopher to consider sadness not only on a rational level, but to put it in a practical context. Elisabeth draws Descartes's attention to the fact that passions have a double nature and grow from the union of the body with the soul (Shapiro 2003). This is, of course, an idea from Descartes himself, but it seems as if he had forgotten it in the correspondence with Elisabeth. Elisabeth writes to Descartes:

Know thus that I have a body imbued with a large part of the weaknesses of my sex, so that it is affected very easily by the afflictions of the soul and has none of the strength to bring itself back into line, as it is of a temperament subject to obstructions and resting in an air which contributes strongly to this (AT 4, 208–9; Elisabeth and Descartes 2007, 88–9).

Elisabeth, who knows Galen's theory of body fluids, explains to Descartes how much her body suffers from sadness, and that the overproduction of negative thoughts triggers a physical reaction, which is noticeable in her unrelenting fever. For Elisabeth, sad thoughts triggered a fever that she cannot cure so quickly. In her opinion, it is of no use to simply entertain the mind elsewhere by showing it other objects or thoughts; one has to heal the body too since it is the first to be affected by this fever. To do this, Elisabeth goes for a walk, goes on a diet, and asks Descartes if he thinks Spa waters would help heal her. But these cures seem to fit only for fever. Can they really cure the root cause, namely sadness or melancholy?

The remedies that Elisabeth tries are all supposed to have an effect on the overproduction of black bile, but the melancholy, which triggers a physical reaction, is not only caused in the body, i.e., in the fluids, but also in the mind or in the nature of man himself. There are people who tend to be sad in character, as Descartes himself said. Descartes suggests to Elisabeth to cure melancholy using reason and by the entertainment of the imagination, which occurs while reading Seneca:

These are domestic enemies with which we are constrained to interact, and so we are obliged to stand on guard incessantly in order to prevent them from doing harm. I find for this but one remedy, which is to divert one's imagination and one's senses as much as possible and to employ only the understanding alone to consider them when one is obliged to by prudence (AT 4, 218; Elisabeth and Descartes 2007, 91).

If Descartes proposes to entertain the imagination elsewhere, he shows that he knows the theory of fluids and melancholy too well. A fantasy that is on its own and that is left to the fumes of the black bile can lead to madness.²³ This is

²³ See Horwitz and Wakefield 2007, 54–5: "From ancient Greek medical writings until the early twentieth century, what is now termed depressive disorder was generally referred to as melancholia, which literally means 'black bile disorder'. Although the name stuck into modern times, it originally reflected the ancient belief that health and disease depend on the balance or imbalance between four bodily fluids, or 'humors', and that an excess of black bile—a humor often thought to be produced in the spleen—was responsible for depressive symptoms." See also

why it is so important for the philosopher to “heal” Elisabeth before she falls into the vicious circle of melancholy. But Descartes has to realize that simply stimulating the imagination with interest in other matters proves to be more difficult than he thought. Mind or reason must prepare for these problems without recognizing them too much so that Elisabeth can still stimulate and entertain her imagination and senses elsewhere. And that’s why Descartes continues:

One can, it seems to me, here easily notice the difference between understanding, on the one hand, and imagination or sensation on the other. Consider for instance a person who otherwise has all sorts of reasons to be content, but who sees continually represented before her tragedies full of dreadful events, and who occupies herself only in considering these objects of sadness and pity. Even though these events are feigned and fabulous, so that they only draw tears from her eyes and move her imagination without touching her understanding [...]
(AT 4, 219; Elisabeth and Descartes 2007, 91).²⁴

This response from Descartes shows that, like Elisabeth, he believes that passions do not only play a role in the soul but also in the body, which means that it, too, has to be healed because it is directly involved in the passions. This small excerpt is particularly interesting because it proves again that Descartes knew Galen’s theory of fluids, even if he does not use the word humors here (see footnote 42). Descartes gives a precise description of the body and its mechanism in sadness and explains how the heart, spleen, and lungs are involved. Here he employs the phrases “particles” and “clogging of the pores,” which could be due to the animal spirits. Like a doctor, Descartes explains how sadness could have caused Elisabeth’s cough and must, therefore, admit that the body needs additional healing. A sick body does not make it possible to entertain the soul elsewhere, because it reminds the soul too much of the triggers not only for the illness but even for the sadness and repeatedly causes gloomy thoughts.

But even if Descartes realizes that passions can excite the body and make it sick, he does not seem to want to deviate from his position, which emphasizes

Burton 1621. Melancholy is a common evil in the 16th and 17th centuries, so the English writer Robert Burton wrote a book about this subject, called *The Anatomy of Melancholy*, where he distinguishes two “types” of melancholy: one that is a disposition and another that is a permanent state. Temporary melancholy is accompanied by sadness, fear, and other passions. According to Burton, melancholy can affect anyone, even the wisest and most balanced person, and is against happiness and joy. Even though melancholy is very often only a temporary state and joyful thoughts can dispel it, there is a risk that people will sink too long in these phases of fear and grief until they become completely melancholic. Melancholy, like depression, is then viewed as a condition of the disease. See also Klibansky, Panofsky, and Saxl 1964.

²⁴ And he continues: “[...] I believe, I say, that this alone would suffice to accustom her heart to close itself up and to emit sighs. Following this, the circulation of the blood would be blocked and slowed, and the largest particles of the blood, attaching one to the other, could easily grind up the spleen by getting caught and stopping in its pores, and the more subtle particles, retaining their agitation, could alter her lungs and cause a cough, which in the long term would give good cause for fear.”

that the mind must be entertained with pleasant thoughts in order to deal with unpleasant situations and thereby create a certain objective distance from the negative situations and thoughts. Averting the imagination and otherwise occupying it seems to Descartes the main cure for sadness since it is the imagination that plays the main role in melancholy. For Descartes, the body cannot be healed when sad thoughts prevail. And Elisabeth understands Descartes's line of thought:

I know well that in removing everything upsetting to me (which I believe to be represented only by imagination) from the idea of an affair, I would judge it healthily and would find in it the remedies as well as the affection which I bring to it (AT 4, 233; Elisabeth and Descartes 2007, 93).

Elisabeth realizes that reason plays a decisive role in the management of the passions. So, it is the imagination that gives a foundation to sad thoughts, as well as to joyful thoughts. If this is the role that imagination plays in the production of passions, then it can also withdraw it for a moment so that reason can view and assess the situation objectively. But for Elisabeth, it is also clear that this objective assessment is only possible afterwards because the passions always have "something surprising," i.e., the passions distress Elisabeth because of their sudden manifestation, which confuses the soul and the body at the same time. And even if the soul quickly overcomes this surprise, it is the body that struggles with it the longest. Elisabeth speaks of months when her body is ailing and maybe even sick. Meanwhile, new situations, even daily ones such as bad news from the family,²⁵ can confuse the body, which Elisabeth sees as the cause of her melancholy. This vicious circle of sadness ultimately evokes her melancholy.

Descartes cannot deny the impact that passions have on the body and the soul and he has to agree with Elisabeth that the body needs remedies, too. However, Descartes is convinced that the most important remedy is that which arises from reason because it has a great strength that can help heal the body by giving the mind positive thoughts through the imagination (Brown 2006). In his letter of September 1, 1645, he underlines the idea that the body is healed not by bodily or physical remedies, but instead by reason:

For the other indispositions, which do not altogether trouble the senses but simply alter the humors and make one find oneself extraordinarily inclined to sadness, anger, or some other passions, they no doubt give trouble, but they can be overcome and even give the soul occasion for a satisfaction all the greater insofar as those passions are difficult to vanquish (AT 4, 282–83; Elisabeth and Descartes 2007, 107).

²⁵ AT 4, 270; Elisabeth and Descartes 2007, 101: "It has been eight days since the bad humour of a sick brother prevented me from making this request of you, since I have had to stay near him every day, either to make him, through the fondness he has for me, abide by the rules set by the doctors, or to show him my fondness by diverting him, because he is persuaded that I am capable of diverting him."

Once again, Descartes mentions the satisfaction that the soul can have if it can tame the passions or even overcome them. But the most interesting point in this passage is that Descartes combines the alteration of the humors (fluids) and the passions: he affirms that the alteration of the humors produces some passions, so that he explicitly mirrors Galen's theory.

We even notice that he no longer speaks of the moods or character traits, as in the *Treatise of Man* in 1633, when he uses the word "humors," but only of the fluids that cause the passions. Descartes says that the humors are altered by some indispositions, which he does not clearly explain, but which we can relate to some negative thoughts, illnesses or even emotional disorders. And this alteration produces passions, which are the visible reactions of the body. So, for Descartes, the humors are the triggers of the passions, and the animal spirits are the triggers of the humors. We, therefore, understand that the word "humors" is completely omitted in 1649 in the *Treatise of the Passions* because the passions are a mixture of physical and rational reactions, a mixture of humors and impressions in the brain: a mixture that shakes the body through the liquids but is also triggered by the fluids themselves.

In this sense, we can agree with Theo Verbeek: in Descartes,

[...] for man as a psychophysical being the passions (love, hatred, joy, sorrow, etc.) are what sensations (pain, hunger, thirst) are for the same man in so far as he is only a body—they remind him of the need for a certain type of action and prepare him for that action (Verbeek 2017, 170).

And precisely because Descartes has to distinguish between a "body" and a psychophysical man, he also has to distinguish the words he uses. Once the psychophysical aspect was accepted, through the Correspondence with Elisabeth of Bohemia, Descartes can no longer mix passions and inner sensations, by always using the same concept "humors."

4. Conclusion

Descartes's understanding of the human body, its anatomy and its functioning of passions is a complex and sophisticated system, combining ancient and medieval theories with his new interpretation. Therefore, the concept of humors undergoes a change in Descartes's philosophy, even if it goes hand-in-hand with the Galenic theory of humorism. As we have seen, Galen understands the humors as the vital bodily liquids, which cause bodily and emotional reactions, and even diseases. Descartes generally agrees with Galen's theory, and the *Treatise of Man* summarizes many of Galen's ideas. However, already since this early work, Descartes revisits Galen's understanding and reworks the concepts of humors, liquids and animal spirits.

Descartes's humors are no longer the first trigger of some bodily reactions, but they are the effects of another kind of trigger, namely the animal spirits. To put it simply, we can admit that Descartes's animal spirits correspond to Galen's humors, in the sense that they trigger reactions in the body, i.e., changes

of the liquids. For Descartes, the animal spirits change the qualities of the liquids and produce a bodily reaction at the level of the humors. These humors are still liquids, as in Galen, but they are more than a simple anatomic concept, as Descartes admits that these humors are dependent even on the impressions in the brain. Therefore, Descartes's humors incorporate even psychological and psychosomatic states, which enables Descartes in the *Treatise of the Passions* to consider humors only to be moods and no longer liquids. The sense of liquid, however, is not lost for Descartes. He only understands it as a part already present in the concept of passion, which is a mixture of, on the one hand, humors, i.e., liquids, and a special movement of the animal spirits, and on the other hand, different kinds of thoughts.

This mixture is the key for reason to be able to control and tame the passions. If they were simply bodily reactions produced by liquids, as Galen proposed in his theory of humorism, depending on external states, then reason could not interfere. In Descartes, on the contrary, as humors (liquids) are already dependent on the impressions in the brain, and passions combine these humors with all possible thoughts, reason can dominate the passions and control man's reaction to all kinds of daily situations. This even shows the strength of the soul and its virtue: reason can change the impact that passions can have on the body, but the body has to be "healed" too if one would prevent a vicious circle.

It was after all due to the correspondence with Elisabeth that Descartes understood that his conception of humors, liquids, moods and passions was still not clear in 1645. Therefore, he revisits his interpretation of Galen's theory and develops a new one in the *Treatise of the Passions*. There he no longer speaks of humors as liquids that trigger passions, but of humors as the general mood of the person, because the passions are already a mixture of liquids and thoughts. It was Elisabeth who reminded Descartes of the strong connection between the body and the soul. Reason can always have any effect on the passions, but even the body has an effect on reason. The pre-eminence of bodily functions would therefore not leave it up to reason solely to change sad thoughts. This is why Descartes has to admit that the body has to be healed too, because a sick body is always a reminder of the trigger elements of the illness and thus creates a vicious circle of sad thoughts.

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