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Aetiology of Plague in the Light of Loimographic Discourse. Physiology of *timor pestis* (Introduction)[1]

Understanding what the plague (Lat. *pestis*, Greek λοιμός) meant for a man of the early modern period requires a reconstruction of the way the loimographic discourse entered the early modern *episteme*, this particular *a priori* of history which sets the boundaries of the utterable. This paper does not endeavour to reconstruct this problem comprehensively, however; it only attempts to clarify one of its facets, i.e. the question of the fear of the plague.

It seems that research on the *timor pestis* as a socio-cultural phenomenon conducted thus far is insufficient and that Jean Delumeau's project including a typology of collective behaviour during plague is incomplete[2] because it fails to investigate this complex phenomenon in the dimension of biological or, better perhaps, material culture. Delumeau, and the remaining historians as well[3], focus predominantly on the collective psychology of fear of the epidemics, whereas we would like to concentrate on its material substratum and its physiology. This paper follows thus a research tradition which was

[1] This text is a part of a doctoral dissertation on the aspects of the epid.ics of infectious diseases in the early modern period, in preparation at the IoHaAS of NCU.

[2] J. Delumeau, *Strach w kulturze Zachodu, XIV–XVIII wiek* [Fr. *La Peur en Occident (XIVe–XVIIIe siècles)*], Warszawa 1986, pp. 96-136.

[3] Cf. e.g. W.G. Naphy, P. Roberts (eds.), *Fear in Early Modern Society*, Manchester University Press 1997; Z.M. Osiński, *Lęk w kulturze społeczeństwa polskiego w XVI–XVII wieku*, Warszawa 2009, pp. 38-60.

initiated in 1970s by Swiss historians of medicine[4] and was further pursued in the circle of German scholars[5].

In 1710, Manasse Stoeckel, a surgeon from Gdańsk, published a booklet entitled *Anmerckungen welche bey der Pest, die Anno 1709 in Dantzig grassirte, beobachtet, und dem gemeinen Besten zu gut mittheilen wollen*[6] ["Remarks on that which was observed, made during the plague raging in Gdańsk in 1709, and which should be announced for the common good"]. The Anmerckungen were one of a dozen or so post-epidemic medical prints issued in the first fifteen years of the 18th century by surgeons and physicians from Royal Prussia[7], and, but for the "comparative analysis of fear of the plague" in Toruń and Gdańsk in 1708–1709 they contained, one might say it was not essentially different from other such publications.

Stoeckel, who practiced in both cities, first as a plague barber (Ger. *Pestbarbier*) and afterwards—thanks to professional advancement—as

[4] H.M. Koelbing, U.B. Brichler, P. Arnold, *Die Auswirkungen von Angst und Schreck auf Pest und Petsbekämpfung nach zwei Pestchriften des 18. Jahrhunderts. Beitrag zum Basler Pest-Kolloquium vom 3. Juni 1978 (Les eff ets de l'angoisse et de la terreur sur la peste et la lutte contre elle d'aprês les écrits sur la peste du 18 siêcle. Contribution au colloque sur la peste de Basler le 3 juin 1978)*, "Gesnerus. Schweizerische Zeitschrift für Geschichte der Medizin und Naturwissenschaften," 36 (1979), pp. 116-126.

[5] See e.g. O. Ulbricht, *Angst und Angstbewältigung in den Zeiten der Pest*, 1500–1720, [in:] Gotts Verhängnis und seine Straffe: zur Geschichte der Seuchen in der Frühen Neuzeit [Ausstellung der Herzog-August-Bibliothek Wolfenbüttel in der Augusteerhalle, in der Schatzkammer, im Kabinett und Globenkabinett vom 14. August bis 13. November 2005], Wiesbaden 2005, pp. 101-112; A. Baehr, *Furcht, divinatorischer Traum und autobiographisches Schreiben in der Frühen Neuzeit*, „Zeitschrift für Historische Forschung" 34/1 (2007), pp. 1-32; id., *Die Furcht der Frühen Neuzeit. Paradigmen, Hintergründe und Perspektiven einer Kontroverse*, „Historische Anthropologie" 16/2 (2008), pp. 291-309; N. Bulst, *Krankheit und Gesellschaft in der Vormoderne. Das Beispiel der Pest*, [in:] Maladies et société (XII^{e}–XVIII^{e} siêcles). Actes du Colloque de Bielefeld, Ed. N. Bulst, R. Delort, Paris 1989, p. 20, n. 10.

[6] M. Stoeckel, *Anmerckungen welche bey der Pest, die Anno 1709. in Dantzig grassirte, beobachtet, und dem gemeinen Besten zu gut mittheilen wollen*, Dantzig 1710.

[7] See e.g. J.Ch. Gottwald, *Memoriale Laimicum, oder Kurze Verzeichnis, dessen, was in der Koenigl. Stadt Danzig, bey der selbst Anno 1709 heff tig grassierenden Seuche der Pestilenz sich zugetragen, nach einer dreyfachen Nachricht, aus einer Erfahrungauff gesetzet und Beschreiben*, Danzig 1710; Ch.B. Wiel, *Wohlgemeinte Nachricht von der in hiesiger Stadt Thorn… bey Beschluss des Monaths Augusti in dem siebenzehenden hundert und achten Jahre angefangenen, und biss in den Monath Januarium folgenden Jahres bestaendig angehaltenen Seuche der Pestilentz, sowohl derselben Ursprung als auch derselbe Natur und Eigenschafte in moeglischster Kuertze entworffen*, Thorn 1709; J.G. Kulmus, *Einiger Medicorum Schreiben, von der in Preussen Anno 1708, in Dantzig Anno 1709, in Rosenburg Anno 1708 und in Fraustadt Anno 1709 Grassireten Pest*, Breslau 1710; N. Gerhold, J.G. Kulmus, *Noch und Unterricht über gegenwärtige Contagion was vor, in und gegen dieselbe sowohl oraeservative, als curative einem jeden insonderheit zu wissen nuetzlich und noethig seyn kann*, Danzig, Oktober 1708.

a physician (Ger. *Pestphysikus*), clearly stated that although the disease prevalent in Toruń and Gdańsk was the same, significantly more people died in Toruń in 1708 during the first days of the plague than in Gdańsk in the following year. "Who fell sick, died as well … and so they all perished."[8]

The increased mortality was being caused—according to Stoeckel—by the spreading of fear and dread in Toruń (much stronger than in Gdańsk). They were evoked by, among others, the sight of surgeons wearing hats bound with white ribbon, the sight of corpse carriers clad in black or white capes, and the sight of the sick themselves who, holding the signs of their infirmity in their hands, long white sticks, were being escorted to a hospital. This is why Stoeckel wrote in *Anmerckungen*: "this I say with clear conscience, more people died on my hands of the fear of the disease than of its cruelty …, ah, how quickly fear and terror can kill!"[9]

Fear was also indicated by Chrystian Balthasar Wiel, a physician from Toruń, as the primary cause of disease and death among its inhabitants. In a small paper, published in 1709, called *Wohlgemeinte Nachricht von der in hiesiger Stadt Thorn… bey Beschluss des Monaths Augusti in dem siebenzehenden hundert und achten Jahre angefangenen, und biss in den Monath Januarium folgenden Jahres beständig angehaltenen Seuche der Pestilentz, sowohl derselben Ursprung als auch derselbe Natur und Eigenschafte in möglichster Kurtze entworffen*[10] [*Message from the city of Toruń, written in good will and as short as possible, about the plague of pestilence which broke by the end of August 1708 and lasted until January the following year, also on its nature and properties*], the medic noticed that just uttering the word 'plague' evoked such a great dread in the inhabitants of the city that their bodies weakened immediately, thereby becoming susceptible to the bubonic *fermentum*.[11] The physician also reported many cases of people "plague-stricken" due to fear evoked by certain sensations. For example, people in Toruń fell stricken with illness because they heard the rattle of the wheels of carts filled with corpses, glimpsed an undignified burial in a common grave,[12] or they were touched unawares by a

[8] M. Stoeckel, *op. cit.*, p. 5.

[9] *Passim*.

[10] Ch.B. Wiel, *op. cit.* (cf. n. 7). See also: K. Pękacka-Falkowska, *Toruńska medycyna i farmacja wobec „powietrza morowego" w świetle niemieckojęzycznego starodruku medycznego z 1709 roku* (*Medicine, pharmacy and plague in torun in light of German medical book from 1709*), „Klio. Czasopismo poświęcone historii Polski i powszechnej," 11 (2008), pp. 53-86.

[11] Ch.B. Wiel, *op. cit.*, p. 45.

[12] Ibid., p. 50. Concerning the fear of *sepultura asina*, that is undignified burial, see P.G. Ottosson, *Fear of the plague and the burial of plague victims in Sweden, 1710–1711*, [in:] Maladies et societé (XIIe–XVIIIe siecles). Actes du colloque de Bielefeld, novembre 1986, ed. N. Bulst, R. Delrot, Paris 1989, pp. 375-392.

member of anti-epidemic service.[13] Likewise, the disease could be caused by a horrible smell or a nightmare.[14]

Therefore—as we can see—not without reason did an early modern proverb say that "schlimmer als Pest ist die Furcht davor" (Lat. *timor*)[15]. Another of its variants ran as follows: "ärgerer als die Pest selbst ist Einbildungskraft" (Lat. *imaginatio*)[16]. The medics of the period did not take the meaning of any of those metaphorically, however; they took them literally. Had it been otherwise, they would not have given advice after all, to:

> … employ all means to keep feelings, mind, and imagination (Ger. *Gemüth*[17]) calm and unmoved, in order to keep oneself safe from anger, fear, and awe by means of complacency (Ger. *Gelassenheit*), and thus to deny access to the how dangerous bubonic poison.[18]

There is a saying nowadays, that "someone is in a deadly fear of something" or that "some thoughts can kill you." Although for our contemporaries the sense of these utterings is metaphorical, it was literal for the people of early modern times. If we want to understand why fear and imagination could be worse or crueller than the plague in the 18th century Toruń and why they could actually kill many inhabitants of the city of that time, we need to answer the question what was the character—according to early modern *episteme*—of both those phaenomena. Was fear some kind of an emotional state only, which belonged to the spiritual (and thus: immaterial) world, or was it a strictly material or psychosomatic process which altered the functioning of body parts? And the imagination: was it simply a cognitive and intellectual process, or a real force, able to affect and (*un*)shape matter? We need to answer the question how that fear and that imagination differed from their counterparts we know today.

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[13] Ch.B. Wiel, *op. cit.*, p. 47.

[14] Ibid..

[15] "Worse than the plague is the fear of it."

[16] "More cruel than the pest is the imagination."

[17] The German word "Gemüth" seems untranslatable into neither Polish nor English. It refers to a synthesis of mind, feeling and imagination. Cf. *Grosses vollstandiges Universallexikon aller Wissenschaften und Kunste* (further cited as: Zedler), Bd. 2, p. 338-339 (on-line source: www.zedler-lexikon.de).

[18] N. Gerhold, J. G. Kulmus, *Noch und Unterricht uber gegenwartige Contagion was vor, in und gegen dieselbe sowohl praeservative, als curative einem jeden insonderheit zu wissen nutzlich und nothig seyn kann*, Danzig, Oktober 1708, p. 3.

Fear[19] is—most generally speaking—a kind of a sensation or affection (Greek πάάά, Lat. *passio*). The early modern philosophical medical theory of affections, i.e. "sudden spiritual movements" which are not subject to rational judgment when they arise, was essentially based on ancient and medieval ideas, slightly reformulated. Their framework can be traced, above others, to the works of Plato, Aristotle, and the Stoics on one hand, and Nemesius of Emesa, Augustine, and Aquinas on the other.[20] It may be said that these same authors laid foundations for the early modern "anthropology of fear" we will try to present in rough outline below.[21]

According to the traditional imaginations of the period, a human being consisted of four—we shall call them so tentatively—levels: corporeality (Lat. *corporeitas*), vegetativity (Lat. *vegetativas*), sensuality (Lat. *sensivitas*), and spirituality-rationality (Lat. *rationalitas*). The first level—corporeality—pertained to all material substances, both animate and inanimate (like rocks). The second level—vegetativity—related to metabolic processes, growth, and reproduction, was common to all living things, plants, animals, and men. Sensuality, which transformed vegetative existence into sensual-animal mode of life (involving movement, among others) excluded plants. Whereas spirituality, which related to the processes of rational and conceptual cognition, was specific only to men.

Passiones animae belonged at the level of sensuality, which the man shared with animals. Apart from the appetitive aspect of sensuality, it was also possible to distinguish its cognitive aspect, which was purely sensory (and thus non-conceptual) perception and experiencing of the here-and-now phaenomena through five external senses (Lat. *sensus externi*), i.e. sight, hearing, taste, smell, and touch. Yet besides the external senses there were—most importantly—at least three internal senses (Lat. *sensus interni*) as well.

[19] In this paper, no account whatsoever of the theological aspect of fear was taken. We should only mention that according to early modern beliefs, three basic types of fear could be distinguished, a "natural fear" (Lat. *timor naturalis*), characteristic of all humans because they are humans, which makes them flee from destructive evil; a "son's fear" (Lat. *timor filialis*), or the fear of God the Father, which expressed adherence to him as well as obedience to him; and a "servile fear" (Lat. *timor servilis*), the fear the ungodly/sinners had of punishment. The natural fear was a subject of medicine and philosophy, the son's fear and the servile fear were subjects of theology. Still, information on *timor servilis* and *timor filialis* can be found in numerous medical treatises of the period. See also Zedler, Bd. 9, p. 2325.

[20] See e.g. Arystoteles, *Retoryka. Poetyka*, przekład, wstęp i komentarz H. Podbielski, PWN, Warszawa 1988; Nemezjusz z Emezy, *O naturze ludzkiej*, przekład, wstęp i przypisy A. Kempfi , PAX, Warszawa 1982; Św. Tomasz z Akwinu, *Suma teologiczna* (I–II, q. 22–48), t. 10: *Uczucia*, przeł. J. Bardan, oprac. F.W. Bednarski OP, Veritas, Londyn 1967.

[21] We do not discuss individual medical schools and theories in this paper, instead, we perform an operation which may be called a „procedure of abstraction."

They coordinated the cognition with external senses and made getting a sense of them possible. The internal senses, located within the brain, included: common sense (Lat. *sensus communis*) which gave a uniform appearance to the sensory material delivered by particular external senses; imagination (Lat. *vis imaginativa*, Ger. *Einbildungskraft*) which joined and disjoined those perceptions, thereby creating sundry arrangements and configurations of their images; and memory (Lat. *vis memorativa*) which stored them for future use. Sometimes fantasy (Lat. *vis phantastica*, Ger. *Phantasie*) was mentioned as well, and a power of judgment (Lat. *vis aestimativa*). Fantasy was exclusively a play of thoughts and dreams, which could lead to errors and give rise to insanity.[22] Whereas the bestial power of judgment assessed the primary perceptions and their arrangements or images as good or evil, it was replaced in humans by to judge particular situations.[23]

From now on, we shall focus on fear. Fear, as mentioned earlier, belonged to the level of sensuality in its cognitive aspect and could be experienced by animals as well as by humans. An important thing, fear was simultaneously an "affect that came into being due to an *imagination* [emphasis by K.P.-F.] of either something good but difficult to uphold, or something bad and difficult to avoid. Because it was an affect …, for the whole of its duration a movement of will and spirit took place." Moreover, "it could be justified or unjustified"[24] depending on the degree of probability that the imagination which caused it should materialize.

As we can see, the subject of fear was every time not so much the actual reality but—as Thomas Aquinas would say—*malum futurum difficile, cui resisti non potest*. In case of animals the imagining of "future evil" resulted above all from the effect of their force of imagination and the power to judge given

[22] Zedler, Bd. 27, p. 1742; A. Koyré, *Mistycy, spirytualiści, alchemicy niemieccy XVI wieku: K. Schwenckfeld,* p. *Franck, Paracelsus, W. Weigel*, przekład, opr. i posłowie L. Brogowski, słowo/obraz terytoria, Gdańsk 1995, p. 90.

[23] On the subject of internal and external senses see e.g. *Sinne, sensus*, [in:] Zedler, Bd. 37, p. 1691–1699; A. Haller, V. Haller, *Elementa physiologiae corporis humani*, t. 5: *Sensus externi, interni*, Lausanne 1763; E. Clarke, C.D. O'Malley, *The Human Brain and Spinal Cord: A Historical Study Illustrated by Writings from Antiquity to the Twentieth Century*, 2nd ed., 1996, *passim*; M. Carruthers, *The book of memory: a study of memory in medieval culture*, 2nd ed., Cambridge University Press 2008, p. 244; W. Riese, E. Hoff , *A history of the doctrine of cerebral localization. I. Sources, anticipations and basic reasoning*, "Journal of the History of Medicine and Allied Sciences," 5 (1950), pp. 51-71; *II. Methods and main results*, ibid., 6 (1951), pp. 439-70; A. Karenberg, *Cerebral Localization in the Eighteenth Century — An Overview*, "Journal of the History of the Neurosciences," 18 (2009), pp. 248-253.

[24] Zedler, Bd. 9, p. 2324.

imaginations.[25] In humans the imagination of evil could have been deepened and re-wrought intellectually. It was not exclusively instinct or intuition, as in animals, but reason. This volitional aspect of fear in humans not only established a possibility of experiencing it (on the level of sensuality) but also opened an opportunity of directing it or transforming it (on the level of the intellectual) by subjecting it to the rule of reason and will. It means that, according to the convictions of the period, every human became morally responsible for his/her affects and for where he/she directed his/her sensory attention. As a result, affectivity appeared as a subject of moral care and moral interest.

It was thought in early modern times that fear "is often the main cause of a great many of diseases, such as erysipelas, stroke, epilepsy, nay! even the plague."[26] So, in an essay from 1722, Über den schädlichen Einfluss von Furcht und Schreck bei der Pest [Eng. *On the harmful influence of fear and terror in the pest*], a Swiss medic, Christian Sigmund Fingers, described countless cases of falling ill because of fear, not only with *pestis* but also with scabies, petechiae, apoplexy, small pox, *etc*. For example, in case of scabies it may have sufficed to cast a glance at someone "scabby."

> A man of a delicate disposition who *sees* a person affected with scabies will be stricken with fear and terror that the same may happen to him; he will soon *think* himself ill and *feel* the irritating itch, and that will incline him to scabies; and so, with time, he shall indeed catch it [emphasis by K.P.-F.].[27]

The onset mechanism is as follows. A certain sensory stimulus evokes a specific affect lasting for a long time. This affect excites certain thoughts (or fancies) which maintain the affect leading to permanent organic changes. Obviously, the given stimulus has an effect on both the external senses (sight in this case) and the internal ones (first and foremost the imagination), it also apparently requires an appropriate "disposition" (Ger. *Verlangung*) of a human being, i.e. a set of psychophysical traits, in order to make this effect possible. It means that the affect takes place at the junction of body and soul

[25] This remark is particularly important in the context of the aetiology of epizootics of the time, especially the murrains of cattle and swine.

[26] Zedler, Bd. 8, p. 1300.

[27] Christian Sigismund Fingers, *Dissertation »Über den schädlichen Einfluss von Furcht und Schreck bei der Pest« (Halle 1722). Ein Beitrag zur Geschichte psychosomatischer Konzepte und zur Psychologie der Seuchenbekämpfung. In deutscher Übersetzung*, hrsg. von Huldrych M. Koelbing unter Mitarbeit von Urs Benno Birchler, Arau/Frankfurt/Salzburg 1979, p. 13. For more on the subject of diseases caused by fear and imagination see J. Lossi, *Disputatione morborum ab imaginatione ortorum, aliis idealium ideam, sub Prćs. Jeremias Lossii, examini exponet Johann Gerdes*, Wittenberg 1681.

and, therefore, its beginning takes place in the spirit (Lat. *animus*, *spiritus*, Ger. *Gemueth*).

"Spirit" was defined in a great number of ways in the early modern period. The philosophers thought it was a certain "ability (*animus*) to put together given representations and develop a unity of empirical perception, and not a substance (*anima*), by its nature entirely different from matter."[28] In chemistry it was called:

> … one of the Principles of natural Bodies, called also *Mercury*. … The chymical Principle *Spirit*, is a fine, subtile, volatile, penetrating, pungent Liquor, which arises ordinarily before the Phlegm or Water, and sometimes after it.[29]

In Newtonian physics, "a most subtle *Spirit*":

> … pervades all, even the densest Bodies, and lies hid therein; by the Force and Action thereof … all Sensation is excited; and the Members of Animals moved at the Instance of the Will, *viz.* by Vibration of this *Spirit*, propagated through the folid Capillaments of the Nerves, from the external Organs of Sense to the Brain, and from the Brain to the Muscles.[30]

In medicine spirits were "the most subtle and volatile Parts, or Juices of the Body ; by means whereof, all the Functions and Operations thereof are performed."[31] In the following considerations we shall focus on the conceptions of spirit found in philosophical-medical theories.

Early modern medical theories—following the Galenic tradition—affirmed that there were several variations of spirit in the human body: *spiritus naturalis*, or the natural breath "residing" in the liver, *spiritus animalis*, or the psychic breath to be found in the brain and nerves, and *spiritus vitalis*, or the vital breath placed in the heart. All three *spiriti* worked in concert with one another, thus becoming *auctores vitae*. By the end of 17th century, however, there appears to have been a tendency to reduce their number. So, in 18th century, the natural breath was reduced to the *spiritus animalis*, i.e. the psychic breath. Only two types of breath, out of three recognized before, were left in the human body, while the difference between the vital and the psychic/neural breath lay, above all else, in their quantity and place of

[28] A. Soemmering, Über das Organ, Königsberg 1796, p. 83

[29] *Ephraim Chambers' Cyclopaedia or, An Universal Dictionary of Arts and Sciences*, London 1728, Vol. II, p. 111 [further cited as *Cyclopaedia*] [online resource: <http://digicoll.library.wisc.edu/cgi-bin/HistSciTech/HistSciTech-idx?type=browse&scope=HISTSCITECH.CYCLOSUB>—AP].

[30] I. Newton, *The Mathematical Principles of Natural Philosophy*, Vol. II, London 1803, p. 314; as cited in *Cyclopaedia*, Vol. II, p. 112.

[31] Ibid.

secretion. According to the *Chambers' Cyclopaedia* (1728), the *spiritus vitalis* was the most active and subtle part of blood, on which its movement and heat depended, whereas the *spiritus animalis* was the pure, subtle, and mobile vital breath distilled from the arterial blood in the cerebral cortex. Mixed with a greater part of the blood, the *spiritus vitalis* circulated in the arteries and veins, while the *spiritus animalis* was secreted by the so-called cerebral glands directly into the medulla oblongata. There it was then injected into the nerves, where the nervous juice became its carrier.[32]

The *spiritus animalis*, as the breath made and distilled from blood in the brain, was closely related to the imagination, which was one of the external senses. It was so because the imagination shaped its representations through specific traces or impressions, which had already been imprinted by sensory *impressions* in the fibres of the brain. The *Cyclopaedia* says:

> The Organs of our Senses are composed of little Threads, or Fibres, which, at one end, terminate in the outward Parts of the Body and Skin, and at the other in the middle of the Brain. These little Fibres may be moved two ways; either beginning at that end which terminates in the brain, or that which terminates without .... If then the Agitation begins where Objects make their first Impression, *viz*. on the external Surface of the Fibres of our Nerves, and is communicated thence to the Brain, the Soul, in that Case, judges that what she perceives is without, that is, she perceives an Object as present: but if only the interior Fibres be moved by the Course of the animal Spirits, of in some other manner, the Soul then imagines, and judges, that what she perceives is not without, but within the Brain; that is, she perceives an Object as absent: And herein lies the Difference between Sensation and *Imagination*.[33]

The physiological effect of imagination caused—as we can see—the relocation of the psychic breath from within the brain to the periphery of the body. The physiological effect of a sensory impression drove the *spiriti animali* in the opposite direction. A question needs to be asked here, however: could the imagination act *ex nihilo* or by itself, not activated by any external stimuli?

If some sensory impression was communicated to the brain, where it became reworked by the *vis imaginativa*, *vis aestimativa*, and *vis memorativa*, then the movement of the psychic breath happened from the outside to

[32] Cf. ibid., Vol. I, pp. 102, 224, 627; Vol. II, p. 112; A. Bednarczyk, *Przypisy*, [in:] R. Descartes, Człowiek. Opis ciała ludzkiego, przeł. oraz wstępem i przypisami opatrzył A. Bednarczyk, Warszawa 1989, pp. 145-153; S. Ochs, *A History of Nerve Functions. From Animal Spirits to Molecular Mechanisms*, Cambridge 2004; G. Klier, *Die drei Geister des Menschen. Die sogenannte Spirituslehre in der Physiologie der Frühen Neuzeit*, „Sudhoffs Archiv", Heft 50 (Stuttgart 2002).

[33] *Cyclopaedia*, Vol. II, p. 375.

the inside and the imagination was stimulated by precisely that sensory impression which had been experienced. It could happen, however, that some *impression of a past event* was recalled from the memory, which impression was subsequently seized by the imagination and further modified. The movement of the psychic breath proceeded then from the inside of the brain to the outside of the body. Anyway, the function of the imagination was stimulated by the previous passage of the psychic breath from the sensory organs to the brains, since the *recalling from memory* also required a sensory trigger. It can be said, therefore, that imagination—as explained by the medicine of the period—was a potential force, activated in the circumstances of sensory experience. Still:

> … all light spirits (Lat. *spiritus fluentes*) move owing to senses, which are being struck by (external) objects: sensory impressions become engraved in the imagination: from the acts of imagination there emerges thinking, which is nothing else but an effect of cerebral movement during the watching of objects and reflecting upon them.[34]

What is important, each time any alteration caused by a perception happened in the cerebral endings of the nerves, it also happened in the brain itself and, more precisely, in its "principal part." It does not matter what that *pars principalis* was: whether it was the pineal gland (Descartes), the *pia mater* of the medulla (J. Fernel), the *corpus callosum* (T. Willis), or something else. Only the nature of the alteration is important. The idea is that this principal part of the brain, connected to all body parts through the nerves and the place where the soul resides, as a result of a neural stimulation, was able to increase and decrease the level of secretion of the psychic breath, which subsequently mixed with the neural juice and circulated in the nerves, simultaneously causing the vital breath to be sucked into the heart or sucked out of it—respectively.

Obviously, the force, depth, and sharpness of the impressions made by the imagination depended each and every time on the force of the psychic breath and the constitution of the cerebral fibres or nerve fibres of particular people (the breadth, length, wetness and dryness, stiffness and elasticity etc.), i.e. on the *disposition* or *constitution* of a human body.[35] We might even risk to state that the force/power of the imagination could be expressed with a classical Newtonian equation of force. Paraphrasing, it would be as follows: *the force of imagination which effects a human being and is related to a given influence of a phenomenon which is external regarding him/her equals the product of the mass of neural substance (Lat. succus nervosus) times the acceleration*

[34] Ibid. [page unknown, translated—AP].

[35] Ibid., Vol. II, pp. 375, 800.

imparted to the psychic breath by this influence. The faster was the psychic breath pushed out to the periphery, the faster the vital breath was pushed into the heart. So the balance of breaths within the body became unsettled, consecutive affects were incited and confirmed, which subsequently excited the bodily juices, which in consequence led to physical alterations.

Of course, the imagination could have negative or positive effect, depending on which kind of impressions it created.[36] We shall yield the floor here to Ernst Anton Nicolai, a 18th century physician, who very eloquently depicted the relations between the affects, the imagination, and the human body:

> The force of imagination can excite affects. The affects cause alterations in a human body. Therefore the imagination can cause alterations in a human body as well. Furthermore, the imagination can evoke in us again these affects which have already been excited in us and these affect will be either of the same force and intensity as the first time, or stronger, or weaker than they had been .... Next, since the affects, due to their diversity, can lead to diverse alterations in the human body, it is logical that also the imagination, as it evokes some kinds of affects, has to cause various alterations in the body ... thus also the imagination must be able to act in a human body in such a way that the alterations it causes there will either be adversary to health and cause a disease or benefit the preservation and restoration of health. In short, the imagination can as well evoke diseases as strongly contribute to their treatment and the preservation of health.[37]

Such a close relation between body, affects, and imagination was indicated in Zedler's *Lexikon* as well. Fear was defined there not only as the "internal and external terror, which shakes and moves the heart in the body," but also as something that shakes the whole system and thus leads to the imbalance of body liquids, or humours.[38] And that which "has power in the formation of fear in men and cattle"[39] was given the name of *vis imaginativa*.

As Michel de Montaigne observed in his essay "Of the force of imagination," *fortis imaginatio generat casum*.[40] It was of particularly great

[36] Zedler, Bd. 8, p. 283.

[37] E.A. Nicolai, *Gedancken von den Wuerckunge der Einbildungskraft In menschlichen Körper. Zweyte vermehrte Aufl*., Halle 1751, pp. 49-51.

[38] Zedler, Bd. 8, p. 911. As Ch.B. Wiel wrote: „it is commonly known how much our own juices and blood, and their resulting calm and orderly [Ger. *ordentlich*] movement, become disturbed in various ways by affects and passions, which is associated with their object" (id., *op. cit*., pp. 47-48).

[39] Zedler, Bd. 14, p. 303.

[40] Pol. „Siła wyobraźni rodzi rzecz samą" (M. de Montaigne, *Próby*, przeł. T. Boy-Żeleński, Zielona Sowa, Kraków 2004, p. 94). [Eng. "A strong imagination begets the event itself."

consequence during the epidemic of plague, since many physicians, including Paracelsus[41] and van Helmont[42], believed that it was the very imagination, fed by fear, that caused the plague *in people*. Therefore those who were the most fearful and those who constantly dreamed were deemed to be the most susceptible.

According to the Toruń chronicler, Johann Heinrich Zernecke, the 1709 plague reaped the richest harvest among women from the suburbs, children, and servants. Those vulnerable to the disease included—he thought—the poor and members of artisan families.[43] On the other hand, in the opinion of Ch.B. Wiel and J.G. Kulmus, both quoted above, the most susceptible to infection and death were women, referred to as "fickle," particularly those among them who belonged to the lower social strata.[44] And, although the analysis of the extant material from the municipal vital records clearly shows that the proportion of deaths during the 1708 epidemic was roughly equal[45], the narrative resources mark a visible prevalence of women's deaths. Why?

Though the pest was supposed to be a punishment for the sins (both individual and collective), according to the beliefs of the period, some groups of people were more vulnerable to it than others.

> Those, who are either full-blooded or very delicate and fearful, and those who yield rather to idleness [Ger. *Müßiggange*] than to work and physical activity [Ger. *Bewegungen des Leibes*], are struck down with the plague before others. And since it is known from the observation of the sexes that women

(Michel de Montaigne, "Of the force of imagination." Trans. Charles Cotton. 1574. *Quotidiana*. Ed. Patrick Madden. 26 Dec 2006. 06 Dec 2012 <http://essays.quotidiana.org/montaigne/force_of_imagination/>—AP].

[41] Paracelsus, *De pestilitate. Da ist vom Ursprung und Herkommen Pestis*; cf. A. Baehr, *Vom Nutzen der Paradoxie für die Kulturhistorie Furchtlose Furcht in frühneuzeitlichen Selbstbeschreibungen Furcht*, [in:] F.X. Eder (Hrsg.), *Historische Diskursanalysen. Genealogie, Theorie, Anwendungen*, Wiesbaden 2006, p. 3.

[42] B. v. Helmont, *Tumulus Pestis. Das ist: Gruendlicher Ursprung der Pest / Dero Wesen / Art / und Eigenschafft; als auch deroselben zuverlaessig- und bestaendiger Genesung* …, Sultzbach 1681. Cf. E. Fischer-Homberger, *Krankheit Frau und andere Arbeiten zur Medizingeschichte der Frau*, Bern, Stuttgart, Vienna 1979.

[43] J.H. Zernecke, *Das Verpestete Thorn, Oder, Summarischer Auszug Der Pestilentz-Seuchen, Womit nach Gottes Willen Die Stadt Thorn, Von Anfang ihrer Erbauung biss an gegenwärtige Zeiten heimgesuchet ist, Wohlmeinend gestellet Von Jacob Heinrich Zerneken, Schöppen daselbst*, Thorn 1710, p. 29.

[44] Ch.B. Wiel, *op. cit*., pp. 8, 45, 49-50.

[45] Based on the extant vital records, the percentage of deaths by gender during four subsequent months of the epidemic of the plague in Torun in 1708 was as follows: September: 60% M / 40% F, October: 53% M / 47% F, November: 55% M / 45% F, December: 42% M / 58% F.

> are more delicate and fearful than men, it is found indeed, that in the times of the pest a greater part of women die than of men.[46]

Yet, as further explained by Abraham a Santa Clara, "a greater part of this evil applies to women because they are affected more strongly by fear and excessive imagination, and what results is not a secret to anybody."[47]

Therefore, what above all preordained women to contracting the disease and—in consequence—imminent death was—by the views of the period—their affect-related sensuality. Psychically weak, labile, and emotional women, whose characteristic traits were to be *angebohrene Furcht und Schrecken*, "stopped" at the level of *sensivitas*. Their sensory attention, uninhibited by rationality, was directed towards what frightened them, which they could not (or failed to) work through intellectually and master. For this reason it was oftentimes stipulated that women should be confined at home during the epidemic, sometimes even regulated by law.[48] Women, isolated from the outside world and closed in a private space, became immersed in the state of *anesthesis*, a passiveness of senses. Led by men who took care of them, priests, fathers, husbands, or brothers, they "distracted their thoughts from matters related to disease and death" and so they could protect themselves from the plague.

The next group of people particularly threatened with the disease were sundry categories of the uneducated. After all, "the power of imagination work[s] and mak[es] its chiefest impression upon vulgar and more easy souls,"[49] since they too—like women—could not intellectually control the attention of their senses and master their imagination and affects.

Those able to master *sensivitas* numbered first and foremost men from the highest social strata of the time: the educated rulers of the city, clergymen,

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[46] Zedler, Bd. 27, p. 760.

[47] A. a St. Clara, Merck's Wien!, [in:] id., Sämmtliche Werke, Bd. 8, Passau 1836, p. 66. Further in his text, the authors refers to the conviction that pregnant women could, by the force of their imagination, (de)form fetuses. For more on the subject see e.g.: L. Daston, K. Park, *Wonders and the Order of Nature*, 1150–1750, New York 1998; D. Todd, *Imagining Monsters: Miscreations of the Self in Eighteenth-Century England*, Chicago 1995; M.H. Huet, *Monstrous Imagination*, Cambridge 1993; D. Wilson, *Signs and Portents: Monstrous Births from the Middle Ages to the Enlightenment*, London 1993; L. King, *The Philosophy of Medicine in Early Eighteenth Century*, Cambridge 1978, pp. 152-181.

[48] „Die Frauenpersonen insgesambt zu Hause bleiben sollen, damit solcher gestallt so wenig durch zustoßende Verjagnis, Schrecken Und andere geschwinde Bewegungen des Gemüths, als durch anklebende Kranckheit Unglück nicht erweitert werde" (Hildesheim 1567), as cited in: E. Härtel, *Frauen und Männer in den Pestwellen der Frühen Neuzeit. DemographischeAuswirkungen der Seuche auf die Geschlechter*, [in:] Die leidige Seuche. Pest-Fälle in der Frühen Neuzeit, Hrsg. von O. Ulbricht, Köln 2004, p. 67.

[49] M. de Montaigne, *op. cit.*, p. 95.

medics. They could, even if they succumbed to the disease, by the sheer force of their minds, appease their imagination or affect and quickly recover. For example, Wiel mentioned that, in October 1708, he witnessed a burial in a mass grave. It frightened him so much that the physician's imagination started overworking which led to him becoming infected. However, by remaining cheerful and overcoming the *pavor mortis* he managed to recover in the space of just a few days.[50]

The theory of affects and imagination began to lose significance in the medical world during the second half of 18th century. In the aetiology of the plague, however, it remained valid until the end of the century. Yet in 1789, Anton de Haen, a physician in Basel, wrote "that it is through the fear of the pest that the disease is summoned and evoked."[51]

[50] Ch.B. Wiel, *op. cit*., p. 51. Por. J. Gottwald, *op. cit*., p. 8.

[51] As cited in: J. Wefring, *Der Ursprung ser Pestilenz: Zur Ätiologie ser Pest im loimographischen Diskurs der Frühen Neuzeit*, Wien 1998, p. 187.