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ADVENTURES IN BIOAESTHETICS – ART,  
BIOLOGY AND AESTHETIC EXPERIENCE IN  
EARLY GERMAN ROMANTICISM AND THE  
ART OF *Sturm und Drang*<sup>1</sup>

*Die transmutative force resides in the nerve. If I damage the  
nerve, the link between World and Soul is destroyed.*

Friedrich Schiller, *Philosophie der  
Physiologie* (1779)

A NEW ERA

The dramatic works of Johann Wolfgang Goethe, Friedrich Maximilian Klinger, Jakob Michael Reinhold Lenz and Johann Leisewitz indicate that in the 1770s there was an art of an entirely new creation. It was the beginnings of a chaotic but yet firm foundation for the further development of German cultural and artistic expressions – the incitements of pre-Revolutionary Europe. In regard to the novelty of the German *Sturm und Drang* movement, the new production of a remarkable narrative and radical drama, wasn't there something of a "big bang" of Romanticism? There was at least a great change, and this is a change that should not be perceived as an opposition to the Enlightenment.

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<sup>1</sup> As the structure of this paper will tell, the perspective presented here is a work in progress. It is a sort of "trailer" of a much larger study and because of the time-limit of this presentation, the historical sketch had to be shortened into very general remarks (this especially concerns the philosophy of the enlightenment and the use of the term "Romantic"). The many references to secondary studies made in this paper serve under these circumstances as a guide to the directions of my thoughts and thus not as first-hand sources. Ironically the number of footnotes has been reduced so an impression may possibly arise of an awkward loss of empirical information.

The publication of important works by Immanuel Kant, Johann Gottfried Herder and Johann George Hamann reveal that this was also the decade of the avant-garde in philosophy. The innovative trend reaches into the following decade, which even more defines itself as the hallmark of modern art and philosophy, beginning with the publication of *Kritik der reinen Vernunft* (1781). Apart from Kant's thesis, the coming of "das eigentliche Zeitalter der Kritik" there was also an important elaboration of the preceding philosophical and artistic achievements of the *Sturm und Drang*. This development tended towards "the secret operations of the soul" (Schiller) and not to the trend of philosophizing reason. The essence of this perspective was the necessity of a harmonious relationship between the material and the spiritual (*Das Geistige*).<sup>2</sup> In a philosophical dictionary from 1775 it says that this direction, namely anthropology, analyses Man "in his double-nature as a physical and moral being",<sup>3</sup> a duplication of Man and nature in the dynamic mode of both *Körper/Seele* and *Leib/Geist*. The consequential discovery of the 70s and 80s was in this sense the disclosure of the psychodynamic subject: a complex model of personality. Without this conceptualization I do not think the new and revolutionary theater could have existed because from this point the psyche is a *process* not an object.

Though the focus on this psychodynamic individual is designed within anthropology this new perspective must be seen as a byproduct of several seemingly different sciences. Since physiology, medicine, and neuroscience<sup>4</sup>

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<sup>2</sup> This does not exclude the perspective of Kant, he was of course a major figure in the development of German seventeenth century anthropology. In this paper my angle is based on the direction that does not focus on reason. On Kant and the problem of the body, see Hartmut & Gernot Böhme *Das Andere der Vernunft. Zur Entwicklung von Rationalitätsstrukturen am Beispiel Kants* (Frankfurt am Main: Suhrkamp, 1996).

<sup>3</sup> The entry "Anthropologie" in J. G. Walch's *Philosophisches Lexicon* (Leipzig 1775), Vol. I, 172 f., quoted in Hans-Jürgen Schings *Melancholie und Aufklärung. Melancholiker und ihre Kritiker in Erfahrungsseelenkunde und Literatur des 18. Jahrhunderts* (Stuttgart: J. B. Metzler, 1977), 13. "Es besteht derselbige [Man] aus einer gedoppelten Natur, einer physischen und moralischen [...] Auf solche Weise haben beyde Naturen den Leib und die Seele zum Grunde, von denen beyderseits sowohl ihrer Beschaffenheit nach an sich selbst; als auch in Ansehung ihrer Vereinigung unter einander kann gehandelt [...] werden. Dies alles konnte Man unter dem Worte Anthropologie fassen, und sie einer physische und moralische theilen."

<sup>4</sup> It should be kept in mind that most of the scientific terms used in this presentation, such as "neuroscience" or "biology", were not established or put to use until in the nineteenth century. On this problem, see Edwin Clarke & L. S. Jacyna, *Nineteenth-Century Origins of Neuroscientific Concepts* (Berkeley: University of California Press, 1987). I use them quite loosely in order to designate what they represented in the eighteenth century, namely the phenomenon of cross-disciplinary actions.

had made progress in the localization and explanation of the functional systems of the body and psychology more or less followed in the discourse of cognition, the question of the soul was pushed aside (although not excluded). In his penetrating study on Goethe and the rise of a "naturalistic anthropology" in Germany, Matthew Bell has recently emphasized that the need for a reconfiguration of anthropology was crucial.<sup>5</sup> The question of a new perspective was acute in the sense that there had to be a science that was able to form an alternative to the rapid advancement of hardheaded physical psychology. As an alternative, it is important to emphasize, it did not ignore the facts of empirical science and it did not form an antithetic standpoint outside science. More willingly it stitched together pieces of information into an own design. With elements from physiology, neurology, psychology and with central ingredients from philosophy and aesthetics, the reformulation of anthropology composed a intricate picture of the individual that was viewed as a contrast to the Enlightened and objectified anatomy of a "Man-machine". As a refreshed "discipline of the soul", the growth of German seventeenth-century anthropology managed to establish itself in a way that it did not disturb the Enlightenment's fear of metaphysics, in the same sense as it could exist without La Mettrie's or Helvetius' materialism. Johann George Zimmerman was able to dwell upon the "entity" of loneliness, Lavater could contact Germany's "grosse Männer" with a request of their personal drawings of God, Karl Philipp Moritz could acquire his "Seelenzeichenkunde" and establish the journal *ΓΝΩΘΙ ΣΑΥΤΟΝ oder Magazin zur Erfahrungsseelenkunde* (1783-93).<sup>6</sup>

It could as well be added that if the natural science had its successful discoveries within chemistry and physiology, aesthetics and philosophy had two great discoveries in William Shakespeare and Baruch Spinoza. In Shakespeare there was a gallery of psychological characters that illustrated a psychological perplexity in a modern sense, that is: a psychology of human thought and action.<sup>7</sup> In Spinoza there was a new ontological position that unified mind and

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<sup>5</sup> Matthew Bell, *Goethe's Naturalistic Anthropology: Man and other Plants* (Oxford: Clarendon Press, 1994).

<sup>6</sup> J. G. Zimmerman *Von der Einsamkeit* (Frankfurt and Leipzig, 1777). As interesting as it was "annoying" for Goethe, Lavater asked for a "personal drawing of how God could look" in order to draw conclusions for his science of physiognomy, see Goethe's remarks in *Aus meinem Leben: Dichtung und Wahrheit*. On Moritz' and Schiller's "Seelenzeichenkunde" see Sabine M. Schneider, *Die schwierige Sprache des Schönen. Moritz' und Schillers Semiotik der Sinnlichkeit* (Würzburg: Königshausen & Neumann, 1998).

<sup>7</sup> Martin Christoph Wieland's influential translation of Shakespeare was published in 8 volumes in 1762-66. However, the true sense of a Romantic reception of Shakespeare

matter in the sense that it opened for a congruence of nature's creative tendencies within man's own creativity.<sup>8</sup> Friedrich Schlegel says in his *Rede über die Mythologie* (1798) that it is with the philosophy Spinoza that we will have a "physics of poetry", a physics that would give us a deeper perspective on the "inner workshop of poetry".<sup>9</sup>

## SOME ASPECTS OF BIOAESTHETICS

The problem that has troubled me is this: How is it possible that within a few decades the analogy of Man changes from a machine-like construction to a plant-like organism? Indeed it is not the question of the metaphorical difference between the non-organic and the organic, but how the representation of a *logical* system changes into a decidedly *creative* system (or even a destructive system).<sup>10</sup> This is a question that is impossible to answer in this limited space. It is the anthropological maneuver that I want to emphasize in the following presentation, or, rather, the orientation of aesthetic theories towards an anthropological outlook. It has been said that this was an orientation that took the direction of a very complex psychological setting. The nature of this complexity is well known to those who studied eighteenth century philosophy, beginning with the emergence of the French sensationist theory from classical rationalism.<sup>11</sup> The basic dualism between body and soul is no longer the issue, rather, it is an inquiry that contains three instances: the Body, the Soul and the Mind. This triad has a central role in the direction that I want to suggest as a turn towards bioaesthetics. In the scientific climate of the German *Sturm und Drang*

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begins in the 70s and especially with J. M. R. Lenz' polemical essay *Anmerkungen über Theater* (1774).

<sup>8</sup> This is Spinoza in both positive and negative reception. I am particularly thinking of Friedrich Heinrich Jacobi's *Über die Lehre des Spinoza in Briefen an Herrn Moses Mendelssohn* (second edition 1789) and Johann Gottfried Herder's *Gott, einige Gespräche* (1787).

<sup>9</sup> *Kritische Friedrich-Schlegel-Ausgabe*, Vol. 2, Charakteristiken und Kritiken I, ed. by Ernst Behler *et al.*, (Paderborn: Ferdinand Schöningh, 1967), 317.

<sup>10</sup> A distinct exploration and a definition of the ambiguous dichotomy between 'machine' and 'organism' is found in David F. Channell, *The Vital Machine: A Study of Technology and Organic Life* (New York: Oxford University Press, 1991). On Romanticism and destructive or 'dire forces', see David Farrell Krell, *Contagion: Sexuality, Disease, and Death in German Idealism and Romanticism* (Bloomington: Indiana University Press, 1998).

<sup>11</sup> On this development, see John C. O'Neal *The Authority of Experience: Sensationist Theory in the French Enlightenment* (The Pennsylvania State University Press, 1996).

biology was a way to clarify that the mind was an interacting agent between body and soul, an inside of an inside. This complex setting is present in the works of Karl Philip Moritz. His numerous aesthetic treatises have left many traces of how biological and psychological questions could be approached to the philosophy of art. Similarly it is undeniable that the young Friedrich Schiller was caught up in the problem of associating medical psychosomatic theories with actual artistic representations. Moritz and Schiller with the help of Lenz will therefore be my explicit examples in this presentation.

There are, as I see it, two major themes in the history of later eighteenth century bioaesthetics. One concerns the "micro history" of how chemical and biological concepts came to be imported into the discourse of aesthetics.<sup>12</sup> The other concerns the broader and perhaps more official history of how the work of art (as well as art history) came to be interpreted as an organism. One should not forget that beginning with the rise of Romanticism, art is perceived as a *living* system, something alive, self-referential, and finally, as seen in the theories of Friedrich Schlegel and Friedrich von Hardenberg (Novalis) self-productive.<sup>13</sup>

The neologism of "bioaesthetics" serves simply as a concept for promoting and pointing out a phenomenon that occurs *in between* the natural sciences, aesthetics (on the behalf of philosophy) and art. Basically I think that these circumstances are visible when they share the same interests and are searching for cognate solutions to the problems raised by the inquiry of nature. The reason for fusing biology and aesthetics into one concept is therefore not that of reduction. It should rather be understood as an intellectual image in order to locate a meeting-place for a tendency that could be labelled as a eighteenth century bioaesthetics, or even a "magical naturalism", to paraphrase

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<sup>12</sup> Very little work has been done on this issue, the recent works of Barbara Maria Stafford (basically on visuality) is an exception, see *Body Criticism: Imagining the Unseen in Enlightenment Art and Medicine* (Cambridge, Mass.: MIT Press, 1991), *Good Looking. Essays on the Virtue of Images* (Cambridge, Mass.: MIT Press, 1997) and *Visual Analogy: Consciousness as the Art of Connecting* (Cambridge, Mass.: MIT Press, 1999). What I would like to call a "micro history" is part of Stafford's investigation on the emergence of analogical thinking and exchange between the arts and sciences in the seventeenth century. About the formulation of concepts, see Edwin Clarke & L. S. Jacyna (1987).

<sup>13</sup> Although it is too constructivistic for my own point of view, see Niklas Luhmann's approach to this issue: "A Redescription of 'Romantic Art'", *Modern Language Notes* 111.3 (1996), 506-522, and "The Work of Art and the Self-Reproduction of Art", in his collection *Essays on Self-Reference* (New York: Columbia University Press, 1990), 191-214.

Novalis.<sup>14</sup> What I am thinking of is a kind of nexus of neuroscience, biological vitalism, artistic creativity and the nature of production.

What kind of history is this then? What does this nexus contain? Following Panajotis Kondylis's argument in his study of the Enlightenment, the major part of the scientific discoveries in the eighteenth-century were possible because of a continual "ontological upgrading of matter".<sup>15</sup> This revised understanding of matter also had a great impact on the formation of perspectives in the humanities: in philosophy and anthropology. In its essence this ontological progression is to be understood as a successive change from mechanics to dynamism in physics and chemistry and as a vitalistic perspective in biology and medicine.<sup>16</sup> From the viewpoint of this upgrading, matter and life has a history of its own. The organic unity of Man and nature that became so dominant in later eighteenth century German science and aesthetics has its origin in the ideas of Georg Ernst Stahl and his colleague Friedrich Hoffman. At the University of Halle they founded vitalism, emphasizing that the very process of life could not be explained or treated in mechanical terms of cause and effect. It was not the repudiation of mechanical explanations proper, but a questioning of the mechanistic ideal. The procedure of formulating laws of physics does not correspond to the manner of formulating laws of the organic. In opposition to the Newtonian model the vitalists found a new task in the very principles of animation, principles that constituted the essence of "vital forces". The fact that the vital force was non-mechanical in its essence was important because it had to be treated as different from corpuscular or aggregated matter.

It was thus the logic of organization in nature, and especially the constitution of man's neural system, that attracted the vitalist's attention. Stahl's and Hoffman's student, August von Haller, became one of the leading neuroscientists of his age and developed the notion of vital forces in the disciplines of physiology and neuropathology. Haller's experiments led to Friedrich Medicus' coining of the concept of *Lebenskraft*. This concept, the forerunner of Johann

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<sup>14</sup> This is the ambiguous phrase of "Magischer Idealismus", see Novalis *Schriften*, vol. 3, *Das Philosophische Werk II*, ed. by Richard Samuel, Hans-Joachim Mähl and Gerhard Schulz, (Darmstadt: Wissenschaftliche Buchgesellschaft, 1968), 385: (no. 838), 642, 430 (no. 826). Although often misunderstood, this central concept in Novalis, which concerns an escape of the doctrinal Idealism of Fichte, is directed towards naturalism.

<sup>15</sup> Panajotis Kondylis, *Die Aufklärung im Rahmen des neuzeitlichen Rationalismus* (Stuttgart: Klett-Cotta, 1981), 48-9.

<sup>16</sup> Concerning the vitalist perspective in early neuroscience that emphasizes the early Romantic tradition, see David Channell (1991) and Edwin Clarke & L. S. Jacyna (1987).

Friedrich Blumenbach's *Bildungskraft*, registered the action of an immaterial agent that was "guiding life", and he later developed an organic system. With the concept of life force one is also able to formulate the problem of the triplicate structure of the body, the soul and the mind. It was the very same immaterial agent that caused so much attention in neuroscience when the organizing principle of sensual information was to be explained without appealing to the idiosyncratic faculty of the soul. In the psycho-philosophical theories of Charles Bonnet and de Condillac there was a non-metaphysical alternative to Cartesian dualism that allowed new solutions to the problem. In the tradition of Haller Bonnet tried to loose the rationalistic strain with an empirical approach. He recognized "sensations" as the fundamental source of knowledge, where the unity between body and soul manifests itself in the nervous system. The mediating principles between the inner sensations and stimuli from the outside world are preformed by the nerves, forming a ventricle system which carries an electric-like "fluid" of "animal spirits" to a processing center in the brain. Still, in a sense Bonnet remained a materialist, precisely when he designates the soul as yet another "neurology in miniature".<sup>17</sup>

The notion of "animism" or "vitalism" is one of the most important foundation of the ideas that later formed, not only the *Naturphilosophie*, but Romantic aesthetics as well. It is evident that the essential conclusions of the vitalistic movement will later affect Romantic thinking. Nature was conceived as producing itself according to constantly repeated patterns, illustrated first and foremost in biological processes. Moreover, this repetition of patterns relates to the constant change of nature. The puzzle is the same as with Friedrich Schelling's idea: by repeating itself nature is different in each and every second. Nature has the element of innovation located within the same force that otherwise constitutes its conservative power. The principle of animation and the theory of vital forces were not perceived as foreign to aesthetics, they were profitably applied to the problems of creativity in the arts. In Romanticism, whatever form it takes, the precise question of art is the question of unchanging change. The deeper correspondence between the inner creative forces in Man and the constant stream of "vital forces" in nature, called for a renewed examination of the senses in conformity with observations made

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<sup>17</sup> Cf. Ralph Häfner, "L'âme est une neurologie en miniature": Herder und die Neurophysiologie Charles Bonnets", in *Der ganze Mensch: Anthropologie und Literatur im 18. Jahrhundert*, ed. by Hans-Jürgen Schings (Stuttgart: J. B. Metzler, 1994), 390-409. Bonnet's expression "Neurologie en miniature" is found in his *Essai de psychologie* (London, 1755), 13.

in neuroscience. Concepts in physiology and biomedicine such as *irritability*, *Reitzbarkeit*, *sensibilité*, *sense* and *sensation*, originally used for describing the innate capacity to react to stimuli were introduced into the discourse of aesthetics.

The wake of early German Romanticism was thus a beginning of aesthetics at the crossroads. In the works of Herder, especially the treatises *Vom Erkennen und Empfinden* (1778) and *Plastik* (1780), it is evident to what extent the new approach to nature and life had influenced both philosophy and aesthetics. His basic ideas such as the genetic model of interpretation and the pivotal study of organicism are all created in some agreement with contemporary science.<sup>18</sup> In a stronger sense than even Moses Mendelssohn, Herder introduces Alexander Gottlieb Baumgarten's ideal that aesthetics, in order to be a science, has to analyze the experience of art according to the basic components of the senses. In a phenomenological investigation, this type of analysis will reveal the synergy that produces an aesthetic experience. In order to get hold of the essence of this experience, aesthetics has to examine how the mind relates to affections and impressions in terms of perceptual relations in a broader aspect, and not limit itself to the work of art as a unique object. This approach to the aesthetic object where already proposed by Denis Diderot, when he argued that art and beauty is too complex an object to be treated as a physical reduction in any form. For instance, in his article "Beauty" (in the *Encyclopédie*) he suggests that the origin of aesthetic experience can only be found in objects and perceptions altogether untouchable by the explanatory powers of the Newtonian Worldview. This means that it is not cause and effect that is at issue, but communion. Beauty, Diderot states, ultimately depends on ideas and perceptions of relations.<sup>19</sup>

As an obvious consequence of the dialogue between philosophy, aesthetics, and the "science of life", the method of analogy can be viewed as the major instrument in early Romantic discourse. But the method of analogy was nevertheless not accepted without resistance. Kant questioned Herder<sup>20</sup> with

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<sup>18</sup> On this appearance, see Hugh Barr Nisbet, *Herder and the Philosophy and the History of Science* (Cambridge: The Modern Humanities Research Ass., 1970).

<sup>19</sup> This conception, I think, is repeated in Novalis' statement that art (in this case "Poësie") ultimately has an "*aussermechanische Kraft*", see Novalis (1968), p. 430, Fragment nr 826.

<sup>20</sup> This is evident in Kant's review of Herder's *Ideen zur Philosophie der Geschichte der Menschheit* (1784-1791), see Immanuel Kant, *Werke in sechs Bänden*, ed. by Wilhelm Weischedel (Wissenschaftliche Buchgesellschaft Darmstadt, 1998), Vol. VI, 781-806.

his suspicion of analogical conclusions and devoted the second book of his *Kritik der Urteilskraft* (1790) to precisely this type of scientific reasoning. In this work, one of Kant's problems concerned conclusions made in biology with the support of analogies. Ironically the writings of Kant abound in making analogies. In his first *Critique* he actually closes his section on the Transcendental Deduction with a paragraph where he uses an analogy from the debate in contemporary embryology. In this rather obscure paragraph, which has given rise to a big debate in Kantian scholarship, the logical structure of the deduction, according to the origin of the categories, can be understood in two ways. It can be seen either as *epigenesis*, which means that the understanding makes experience possible by solely containing the general grounds (categories) for its possibilities and evolves successively. Alternatively it can be seen as a system of *preformation* that is "implanted in us" in such a way that the use of this subjective predisposition would be "in exact harmony with the laws of nature along which experience proceeds".<sup>21</sup> The epigenetic model, which he prefers, opens up an evolutionary perspective of reason, while the later, in regard to the disposition of future judgments, has to be predetermined. I know full well that this example is discussed by Kant in a different context, it is nevertheless telling that he avails himself of epigenetic ideas. As the study by Helmut Müller-Sievers shows, epigenesis is the shibboleth of this age in many ways.<sup>22</sup> The embryological analogy is also visible in the idea of "the progressive universal poetry" in Schlegel and Novalis, although the argument for this idea is turned towards the autopoietic structure of art. Still, in the aesthetics of Jena-Romanticism there are many references to different vegetative and biological analogies: works of art as pollen, seeds, growth, assimilation and dissimulation.

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Herder's *Ideen* is in my opinion the masterpiece of the integrative tendency I attempt to outline.

<sup>21</sup> *Kritik der reinen Vernunft*, B 167-68. On the employment of the embryological analogy, see Thomas Haffner's dissertation *Die Epigenesisanalogie in Kants Kritik der reinen Vernunft. Eine Untersuchung über Herkunft und Bedeutung der Begriffe Epigenesis und Präformation in Kants transzendente Deduktion* (Saarbrücken, Dudweiler, 1997).

<sup>22</sup> Helmut Müller-Sievers, *Self-Generation: Biology, Philosophy, and Literature Around 1800* (Stanford: University Press, 1997) and *Epigenesis. Naturphilosophie im Sprachdenken Wilhelm von Humbolts* (Paderborn: Ferdinand Schöningh, 1993).

## Bioaesthetical tendencies

Reflecting on an important aspect of Johann Joachim Winckelmann's approach to the history of art some tendencies that could be described as bioaesthetical come into view. His fundamental idea of placing the work of art in a physical environment is well known, but his way of explaining ancient art also uses analogies from the sphere of biology. This is especially the case concerning the plastic arts, which gradually come to maturity, pass through certain phases, and then decay. When reading Winckelmann's art history, it is apparent that he was tracing a living development where the phases of a life form contrived an evolutionary system of different styles.

However, one of the most interesting examples is found in Karl Philipp Moritz' essay *Über die bildende Nachahmung des Schönen* (1788), an important source on the concept of genius and "nobility" in early Romantic aesthetics. In this essay there is also a description of how the process of "creative imitation" works. The topic of Moritz' essay is how to understand the process when the artist wishes to communicate beauty. The sense of beauty in nature originates from a rationally organized whole that cannot be represented sensibly, although it can be indistinctly grasped by the mind.<sup>23</sup> What *could* be represented is an analogous – creatively imitated – organization of nature. In modern terms, Moritz would say that in art the unconscious appears as a concrete expression. Art as a process of production is thus organized according to innate formal laws which are described as "creative energies" (*tätige Kraft* or *Thatkraft*).

In Moritz' aesthetics Man is viewed as a microcosm, a symbol for the Universe on a micrological scale. He recognizes two basic and complementary faculties: the formative and the sensitive force – *Bildungskraft* and *Empfindungskraft* in an active and passive state.<sup>24</sup> For the artist the powers constitute two different modes of one fundamental activity, an activity that has a biological substructure in something he describes as "the finer tissues of our organism" (*das feinere Gewebe der Organisation*).<sup>25</sup> The whole of nature "flows through" (*einströmen*) this organic "tissue" and eventually finds different "points of contact" (*Berührungspunkte*) that are mutual and therefore could be represented

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<sup>23</sup> Karl Philipp Moritz, *Schriften zur Ästhetik und Poetik*, ed. by Hans Joachim Schrimpf (Tübingen: Max Niemeyer, 1962), 74.

<sup>24</sup> *Ibid.*, 82.

<sup>25</sup> *Ibid.*, 82.

in a harmony between micro- and macrocosm.<sup>26</sup> In a way, this is to say that the beauty of nature is only to be mediated through nature.<sup>27</sup> This is because when the sensitive power receives its impress, and the formative power reproduces its structures, the subjective interpretation of beauty is produced as a creative imitation as the energies that are filtered through the organic tissue. In order to imitate something that cannot be represented sensibly, the artist has to form the creative energies into a perfect equilibrium (*Gleichgewicht*) with the power of imagination. In Moritz' view it is therefore impossible to trace the origin or the intentionality of a work of art – it belongs to nature itself and has no external finality. The work of art is a totality that constitutes its own finality and, like nature, must be understood as a created being.

There is a lot more to be discovered in Moritz' essay, but the concepts "Gewebe", "Organisation", and "Gleichgewicht" should in my view be regarded as bioaesthetical. Beauty is to be understood as patterned energy and in this sense nature speaks through its own reproductions.<sup>28</sup> Even more interestingly, his notion of "Wirkung" and "Thatkraft" can be matched with Medicus' "Lebenskraft" or Bonnet's "animal spirits", because he uses the same technical program as contemporary neuroscience when describing the organization and the filtering process of the "tissue". What is made visible in Moritz' whole argument is that the microscope was as important for the eighteenth century as the telescope was for the seventeenth century. The science of macrocosm is applied to the world of microcosm, and in this new context, which might be called an organic paradigm, a new idea of mimesis emerges in

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<sup>26</sup> *Ibid.*, 78.

<sup>27</sup> *Ibid.*, 76. "Der Horizont der thätigen Kraft aber muß bei dem bildenden Genie so weit, wie die Natur selber, seyn: das heißt, die Organisation muß so fein gewebt seyn, und so unendlich viele *Berührungspunkte* der allumströmenden Natur darbieten, daß gleichsam die *äussersten Enden* von allen Verhältnissen der Natur im Großen, hier im Kleinen sich nebeneinander stellenden, Raum genug haben, um sich einander nicht verdrängen zu dürfen."

<sup>28</sup> This perspective actually begins with Aristotle's natural view of art as patterned energy, see for example *Metaphysics* (Book Z, 7-9). In very general terms nature (and art) are developed from two states: the "form" or "fulfillment" as being awake and "matter" or "potentiality" as being asleep. Matter as "active" and "inactive" is also a basic view in Diderot's philosophy of nature as it is represented in *Le rêve de d'Alembert* (1769) and *Pensées sur l'interprétation de la nature* (1754). On Diderot's "materialistic" or (in my view) vitalistic perspective that definitely has an affinity with the Romantic *Naturphilosophie*, see Lynne B. Dixon's *Diderot, Philosopher of Energy: The Development of His Concept of Physical Energy, 1745-1769* (Oxford: The Voltaire Foundation, 1988) and Charles C. Gillespie's *The Edge of Objectivity: An Essay in the History of Scientific Ideas* (New Jersey: Princeton University Press, 1960), 187-192. Dixon does not treat Diderot in the context of Romantic *Naturphilosophie*, although Gillespie suggests an affinity.

aesthetics. That is: representation no longer means an imitation of nature, it is a creative imitation of nature's processes. Art becomes a passage between open and closed systems, it imitates *natura naturans*. From now on art itself has an inner and individual life, since its own mediating capacity can be reversed into its own ontological origin. Karl Philipp Moritz is the discoverer of bioenergetic interchange.

### NATURE ON DISPLAY: THE THEATER OF "TURBULENCE"

As an illustration of how art is brought into a closer relation to nature I find two important scenes that characterize a common phenomenon during the later part of the eighteenth century. A) The first scenario is the *laboratory* of the natural scientist, where the experiments on polyps, frogs, organisms and substances was the first step in a great encoding process, assigned to find the basic principles of life and the origins of natural forces in both nature's and man's activities. This is the scenario of experimentation, in which vitalism develops. B) The other scene is literally the *theatre stage* in the dramas of the *Sturm und Drang* movement. This is the theater of expression, force, tragedy, violence, and, especially, the irreversible process of actions. If the performance of nature on the microscopic level could be compared to the performance of human nature on stage, then there is a possibility of recognizing the relationship between the two sceneries as a *theatre of matter*. Regarding the theater of the *Sturm und Drang*, there are similar displays in "the science of life" as in "the staging of life", there is an unfolding of the theatre as a laboratory.

Faust, Götz, the Moor brothers, Guelfo, quite a list when it comes to fatal destinies. One of the keywords that could be used to characterize those revolutionary and violent expressions is "turbulence". Jean Jacques Rousseau's transformation of political and social criticism into the "real event" of the theatre is often regarded as an important outcome of this "turbulence".<sup>29</sup> The war against the hypocritical aristocracy, censorship and so-called "good taste" was fought with the arguments of the ultimately free subjective morality and the work of a genius beyond all possible laws.<sup>30</sup> But it is not primarily the

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<sup>29</sup> The notion of theater as representing a "real event" (in the case of "living events") is proposed by Goethe in book XIII of *Aus meinem Leben: Dichtung und Wahrheit*.

<sup>30</sup> On the political aspect of *Sturm und Drang*, see Roy Pascal's classic *The German Sturm und Drang* (Manchester: The University Press, 1953).

political aspect that is of interest. The turbulence could as well be hidden in the notion that the process of founding the subject as an ultimately free instance, also called for a conflict with the scientific conception of what feelings and nerves really are about. The centrality of biological aspects could be explained within the very historical setting of this movement. Chemistry, medicine, physiology and neuroscience, they had all reached a highly advanced stage. When forming a non-mechanic and bio-chemical perspective on the human body and psyche, these sciences were moving towards a *unification* of the different theories. This took place while aesthetics was about to *differentiate* itself against the traditional questions and moved towards a more philosophically based discourse on the specifics of aesthetic experience and creativity. In other terms: the era of the *Sturm und Drang* was the beginning of a medical doctrine of the nerves, as well as an ending of aesthetic doctrines, rules and categories.<sup>31</sup>

If it is not unconditionally the political strain that generates a “revolution” of *Sturm und Drang* theatre, what then could it be? I think that it is a new conception of tragedy, new ways of formulating the philosophical problem of freedom and morality in terms of bioaesthetics. Man as an interface between nature and culture, law and freedom, is shaped into a necessary stereotype, a tragic hero that cannot be controlled within conventions. The staging of life in the dramatic form of the *Sturm und Drang*, synthesizes nature and culture into a *Kraftmensch* or a *Kraftgenie* – the artist or a character comprehended as a Titan. The observations made on reflexes in neurology, the conception of the creative personality in aesthetics, and the essence of freedom in philosophy, could be viewed as a compounded energetic picture of how everything is inter-related and *alive*, striving to unfold the potentials of the *Kraftnatur*. In the spirit of this energetic or turbulent viewpoint, the actor Henrich Beck (celebrated at this time) states that theater is not to be compared either with “reality” or

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<sup>31</sup> One could argue that with this differentiating process there were different possibilities of theorizing art and that it opened up numerous theoretical possibilities outside traditional philosophical inquiries. Bioaesthetics is just one of many perspectives for interpreting this complexity. There could also be a “Geoaesthetics”, in terms of how art is interpreted in relation to geology and mineralogy, an investigation that could easily begin with the following statement found in Friedrich Schelling: “Die Erde ist ein Buch, das aus Bruchstücken und Rapsodien sehr verschiedener Zeiten zusammengesetzt ist. Jedes Mineral ist ein wahres philologisches Problem. In der Geologie wird der [Friedrich August] Wolf noch erwartet, der die Erde ebenso wie den Homer zerlegt und ihre Zusammensetzung zeigt.” *Sämtliche Werke*, ed. by K. F. A. Schelling (Stuttgart/Augsburg, Cotta, 1856-1861), I:V, 247. There could also be a ‘Mediaeaesthetics’, in terms of how the practice of “reading the book of nature” turns into new ideas of communication, or how neurology turns into telegraphy, as in the thinking of Samuel Thomas Sömmering.

“nature”. The theater is by all means *Art* in its most universal sense, a foundation where “nature and culture must totally converge into one spot, thus producing an electric charge”.<sup>32</sup>

Comparing ancient Greek tragedy with that of the eighteenth century, Lenz concludes in his *Anmerkung über Theater* (1774), that the determinism of fated events in Greek tragedy actually grew out of the fear of the gods. Since there is no fear of God in our age we can no longer produce a tragedy in the classical sense<sup>33</sup>. In contrast to Greek tragedy Lenz does not understand the modern tragic hero as a “marionette-puppet” in the hand of God, but simply as “a man”. “It is the hero alone”, Lenz tells us, “who is the key to his own destiny.”<sup>34</sup> In regard to the definition of the authenticity of Man’s freedom of actions, Lenz’ statement hides a problem of his own age that definitely fits with the image of the “marionette”. Since the fundamental question of moral philosophy was the problem of free will, philosophy as well as aesthetics had to take up a position regarding the viewpoint of natural science, i.e. do instinct and reflexes govern man and his actions, causing him “blindly” to follow the path of nature. Impulse, will, or reason, turns into the question of *voluntary* and *involuntary* actions and intentions. The tragedy of *Sturm und Drang* emerges when the “culture of reflex” challenges the “culture of reason” – in its most extreme form it either *gains* control of that which is my “self” or to *loses* that which is my “mind”. It cannot be said with certainty that this is a backlash of Enlightenment materialism, because “the self as the key to its own destiny”, as Lenz defined the tragic hero, turns tragedy into an instrument to analyze the bond between nerves and pathology, society and pathology, genius and pathology. The interaction between the normal and the pathological becomes the very essence of tragedy that “occurs in between law as it was about to be born and law as it was already constituted”.<sup>35</sup> The idea of tragedy and law as “not yet there” but already ‘transgressed’ is the principle of the theater of turbulence.

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<sup>32</sup> “Natur und Kunst müssen ganz auf einem Fleck zusammentreffen, um die elektrische Wirkung [hervorzubringen].” Heinrich Beck quoted in Hans Knudsen, *Deutsche Theatergeschichte* (Stuttgart: Kröner Verlag, 1959), 217.

<sup>33</sup> J. M. R. Lenz, “Anmerkung über Theater”, in *Gesammelte Schriften*. ed. Franz Blei (München: Müller, 1909), vol. I., 251.

<sup>34</sup> *Ibid.*, 254. “Der Held allein ist der Schlüssel zu seinen Schicksalen.”

<sup>35</sup> Jean-Pierre Vernant and Pierre Vidal Naquet, *Myth and Tragedy in Ancient Greece*, translated by Janet Lloyd (New York: Zone Books, 1988), 14. The idea of tragedy and law as formulation and transgression emerges from the works of Louis Garnet. I concur with the view developed by Garnet’s students Jean-Pierre Vernant and Pierre Vidal Naquet in the quoted work. On the problem of Greek tragedy, see Bernard Williams’s brilliant *Shame and*

## DOCTOR SCHILLER

The union between science and aesthetics is definite in the early development of Friedrich Schiller, who was trained as a medical doctor at the Karlsschule military academy in Stuttgart. In the works of Schiller the import of biological and medical ideas had both an artistic and philosophical outcome. The influence of medical reasoning and the usage of similar concepts is observable in his aesthetic treatises as well, an important phase in his thinking that is often overlooked in favour of his later interest in Kant. Although the medical subject matter is very explicit in the first version of his tragedy *Die Räuber* (1781), its stage version and the later plays *Fiesco* (1783) and *Kabale und Liebe* (1784) his medical knowledge is embodied in a more sophisticated manner in these works.

Nigel Reeves' and Kenneth Dewhurst's study of the Karlsschule period is the most exhaustive and penetrating interpretation of the young Schiller's academic years.<sup>36</sup> To begin with, one important thing that we learn from this study is that Schiller's favorite teacher in psychology and the philosophy of biology was Jakob Friedrich Abel, a friend of Goethe and Herder. His *Rede über das Genie* (1776) was highly valued by the circle of *Stürmer und Dränger* and an important document in the history of aesthetics. Abel's medical theory is a philosophical interpretation of the mind as an agent of change in psychological character. In his numerous investigations into the formation of personality he found many different forms of interaction between the mind and the physical and social environment. In this arrangement he included central elements such as climate, habit, chance events and language. While teaching he used to quote extensively from Shakespeare and then illustrate how art could help medical science to understand the complexity of mind.<sup>37</sup> In Abel's classes the medical students learned how close the content of medical reports was to artistic repre-

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*Necessity* (Berkeley: University of California Press, 1993). Cf. Friedrich Schiller's statement in *Die Schaubühne als moralische Anstalt betrachtet*: "Die Gerichtsbarkeit der Bühne fängt an, wo das Gebiet der weltlichen Gesetze sich endigt." Schiller, *Werke*, Nationalausgabe, vol. 20 (Weimar: Hermann Böhlhaus, 1962), 92.

<sup>36</sup> Nigel Reeves & Kenneth Dewhurst, *Friedrich Schiller. Medicine, Philosophy, Literature* (Berkeley: The University of California Press, 1978).

<sup>37</sup> *Ibid.*, 38. On the influence of Abel's ideas on Schiller, 128-136.

sentations. Because art, in the same way as biology or medicine, tried to trace the workings of the soul and manifest the very same immaterial agent.

Schiller was deeply impressed by Abel and his teaching, which is visible in the treatises he wrote at the Karlsschule. While finishing his dissertation, entitled *Versuch über den Zusammenhang der thierischen Natur des Menschen mit seiner geistigen* (1780), a treatise on psychosomatic medicine, he worked in secrecy with his play on the tragic destiny of the brothers Franz and Karl Moor. Besides material from Shakespeare, Schiller even incorporated extracts from his own play into the dissertation, claiming that the information came from a book called *The Life of Moor* “a tragedy by Krake”.<sup>38</sup> At this phase in his medical training, I think that he had realized that a medical judgement could be settled along with representations found in literature. Eventually, he left his medical career for literature and philosophy.

It is noteworthy that Schiller actually wrote a first dissertation, entitled *Philosophie der Physiologie* (1779). Although it was appreciated for its philosophical approach, the professors at the Academy rejected it. This dissertation was a treatise on the nervous system as a transmutable system between the body and soul, where the mediating “vital forces” were constituted by an entity he called “nerve spirits” (*Nervengeist*). The two dissertations reveal his interest in the problem of the interchange between mind and body, and especially the notion of how the psyche could affect the body. In the words of Franz Moor, the tragic character he created in *Die Räuber*, the doctrine of psychosomatic medicine could serve as an instruction for a “doctor in reverse” who teaches “how to destroy the body by way of the mind”.<sup>39</sup> His play is in this sense a prominent example of the amalgamation of medical theories and literature. This is immediately obvious when Schiller, in the very first lines in his preface to the play, informs the reader that “this play is to be regarded *merely* as a dramatic narra-

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<sup>38</sup> Ibid., 273.

<sup>39</sup> Friedrich Schillers *Werke*. Nationalausgabe, ed. Julius Petersen and Hermann Schneider, vol. 3. *Die Räuber*, ed. Herbert Stubenrauch (Weimar: Herman Böhlau Nachfolger, 1953), act II,1, p. 39. F. Moor: “Philosophen und Mediziner lehren mich, wie treffend die Stimmungen des Geists mit den Bewegungen der Maschine zusammenlauten. Gichtrische Empfindungen werden jederzeit von einer Dissonanz der mechanischen Schwingungen begleitet – Leidenschaften mißhandeln die Lebenskraft – der überladene Geist drückt sein Gehäuse zu Boden. – Wie denn nun? – Wer es verstünde, dem Tod diesen ungebahnten Weg in das Schloß des Lebens zu ebenen! – Den Körper vom Geist aus zu verderben.”

tive [...] for the purposes of tracing the secret operations of the soul".<sup>40</sup> Perhaps this statement captures the intention of the play but from the literary point of view it is quite surprising that it is regarded as "merely" a dramatic narrative.

It is easy to see how he pictures this "tracing of the soul" if one tries to comprehend the idea as a whole. In the center of the play stand the brothers Franz and Karl Moor. Franz the materialist doctor full of self-hatred represents "the body"; and Karl the easily affected, impulsive and untamed "robber king" represents "the soul".<sup>41</sup> Schiller's secret operation is that in the first "Schauspiel-version" of the play, Franz and Karl, although everything centers round them, never meet *on stage*. In other words: body and soul remain separate in order to localize the effects when one of the centers is shut down. *Actio in distans*. The two brothers infect each other as in the doctrine of psychosomatic medicine. The body can produce a *krankte Seele* and the soul can produce bodily dysfunction and disease: this was what Schiller learned from Abel, and this is why Franz complains about his crippled body, as if it was copied from the monologue in Shakespeare's *Richard III*.

The way of representing this form of disease is all part of the *Sturm und Drang* as a theater of turbulence, the staging of a force that transforms tragedy into an instrument to bring forth the interplay of the normal and the pathological. As George Canguilhem formulates the nature of disease as distinct from the classical Hippocratic tradition, "disease is not simply disequilibrium or discordance; it is [...] an effort on the part of nature to effect a new equilibrium in man. Disease is a generalized reaction designed to bring about a cure; the organism develops a disease in order to get well".<sup>42</sup> The young Goethe, who was one of the leading spokesmen of the *Kraftmensch*, referred to his character *Götz* as a *Selbsthelfer*<sup>43</sup> and Lenz said that the tragic hero himself is the key to his own destiny. From this point of view one could see this as an immanent development of a disturbed harmony, in order to force a destiny. Where Greek

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<sup>40</sup> *Ibid.*, 5. "Man nehme dieses Schauspiel für *nicht anders*, als eine dramatische Geschichte, ... die Seele gleichsam bei ihren geheimsten Operationen zu ertappen". The emphasis is mine.

<sup>41</sup> In order to complete our psycho-philosophical trinity, it can be claimed that the third person, namely the father, represents "the mind".

<sup>42</sup> George Canguilhem, "The Normal and the Pathological", in *A Vital Rationalist*, ed. by Francois Delaporte and translated by Arthur Goldhammer (New York: Zone Books, 1994), 322f.

<sup>43</sup> On this relation, see the interpretation in chapter 4 of Alan C. Leidner's *The Impatient Muse: Germany and the Sturm und Drang* (Chapel Hill and London: The University of North Carolina Press, 1994), 47-62.

tragedy had its fear the gods, namely something external, German *Sturm und Drang* had the object of fear literally located inside the tragic hero. The famous Delphi saying “know yourself” becomes the theatrical prophecy “fear yourself”.

There is nevertheless a notion of catharsis in this context. In his essay *Die Schaubühne als moralische Anstalt betrachtet* (1784), Schiller proposes the idea that theater has the potential of psychotherapy, that the theater of his age could be captured as psycho-theatrical in a purifying, almost Arthaudian sense. If one is to believe an eyewitness report of the first performance of *Die Räuber*, at Mannheim National Theatre 1782, this notion of psychotherapy is quite problematic. The witness recounts that: “The theatre was like a madhouse – rolling eyes, clenched fists, hoarse cries in the auditorium. Strangers fell sobbing into each other’s arms, women on the point of fainting staggered towards the exit. There was a universal commotion as in chaos, out of the mists of which a new creation burst forth”.<sup>44</sup>

I think that against the background of Schiller’s medical training and interest in psycho-somatics, it is also possible to trace a tendency that continues in his later work on the freedom of mind and objective beauty. It is often overlooked that he, as a *pre-Kantian* medical doctor, worked on a medical treatise concerning how the “immaterial” affects the “material” and vice versa. In his aesthetic ideas of how beauty is manifested in an aesthetic object, there is a similar line of problematic relations: How is the immaterial entity of beauty presented as an object? There are also other, less Kantian, tendencies in the (later) aesthetics of Schiller since there is an influential integration of psychosomatic and medical concepts present in his *Briefe über die ästhetische Erziehung des Menschen* (1793-1795).<sup>45</sup> However, this is a subject that needs a deeper analysis. The reason for depicting *Sturm und Drang* as a “big bang” of Romanticism, as I suggested in the beginning, is that it is born out of a conflict between classical Newtonian science and the vitalist tradition of Stahl and Haller. In the 70s and 80s the break up of the standard explanatory model in the biological sciences was contemporary with the break up of traditional ideals

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<sup>44</sup> Quoted from Lesley Sharpe, *Friedrich Schiller: Drama, Thought and Politics* (Cambridge: University Press, 1991), 29. “Das Theater glich einem Irrenhaus – rollende Augen, geballte Fäuste, heisere Aufschreie im Zuschauerraum. Fremden Menschen fielen einander schluchzend in die Arme, Frauen wankten, einer Ohnmacht nahe, zur Türe. Es war eine allgemeine Auflösung wie im Chaos, aus dessen Nebeln eine neue Schöpfung hervorbricht.”

<sup>45</sup> Although it is in brief, this subject matter is highlighted by Reeves & Dewhurst (1978), chapter VII.

in aesthetics. It is the birth of a new theater that is not only non-Aristotelian, as Lenz argues, it is likewise non-Newtonian. The specific quality of the concept of "Wirkung", within the course of this movement, announces the existence of Man as in the shadow of nature and culture. It is therefore an interesting question whether the concepts of bio-energy (life forces, nerve-spirits, etc.) can help to explain why the art of *Sturm und Drang* includes so much violence, hate, tragedy and melancholy.<sup>46</sup> My tentative conclusion is that the effect of the vitalistic approach in natural science had a greater impact on the development of eighteenth-century aesthetics than is usually realized.

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<sup>46</sup> On this central phenomenon see Hans-Jürgen Schings (1977), Gert Mattenklott, *Melancholie in der Dramatik des Sturm und Drang* (Königstein: Athenäum, 1985) and Lothar Müller *Die kranke Seele und das Licht der Erkenntnis: Karl Philipp Moritz' Anton Reiser* (Frankfurt am Main: Athenäum, 1987).

