

## Cultural, Artistic, Physical, Medical and Physiological Aspects Fuseli's Mad Kate

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### Abstract:

The portrait of Mad Kate has an uncomfortable and emotional effect on its spectators that are forced to confront with her direct gaze. To heighten this effect, Kate was depicted facing a stormy sea lit by flickering bizarre brown shades of light. Mad Kate is a masterpiece drawn by the English Swiss born artist Henry Fuseli. The interpretation of his Mad Kate was made as a dissent against the ferocious treatment of lunatics by society and particularly the treatment of madwomen. Kate was regarded as insane by the contemporary society, because she was painted about thirty years before exophthalmos with goiter was discovered by the Western medicine. Kate was not crazy, but a visual imaging of thyrotoxic with Graves ophthalmopathy. This work is multidisciplinary, as it integrates remote disciplines such as; art, history, culture, psychology, medicine, evolutionary-biology and neurobiology (each discipline/chapter is the prelude to its successor). Furthermore, by the use of these tools I have managed to provide an insight into the various motifs and the scientific knowledge that Fuseli (who was regarded as a Renaissance man by his contemporaries) skillfully managed to incorporate in the depiction of Mad Kate.

**Keywords:** Henry Fuseli, Mad Kate, feminine madness, culture, science, woman's rights, Enlightenment, Romanticism

### 1. Cultural Aspects

#### 1.1 Madness in England's Romantic Era

'We are all mad here, I am mad and you are mad', explained lucidly the *Cheshire Cat* to the perplexed Victorian Alice (Lewis 1865. 4). That quote from Alice's *Adventures in Wonderland* is indicative of the important place that madness occupied in the mind of English society. The preoccupation of the public with madness, did not begin in the Victorian era but had started to gain acceleration at the 17<sup>th</sup> and 18<sup>th</sup> centuries, along the establishment of the Enlightenment Movement (Karp 1984. 15)

Madness is known to humankind since its dawn and is well documented in diverse societies and civilizations (Porter 2002. 10-25). Mad people were stigmatized by their societies as different, or even dangerous, and thus categorized as inferior, a trend that eventually led to their separation from the society and institutionalization (Porter 2002. 62-3). During the 18<sup>th</sup> century the first general hospitals were established in England by the voluntary hospital movement, which later also added few voluntary hospitals for the insane (Murphy 2001. 30). These private establishments, operated in the framework of the 'trade in lunacy' phenomenon, provided shelter for the wealthy and for those paupers that were supported by their parishes (Bewley 2008. 4). Accordingly, in England of the beginning of the 19<sup>th</sup> century the majority of the lunatics were confined in private, profit operated, asylums (Murphy 2001. 30).

In the Augustan and Georgian England, madness was perceived as two separate entities, 'Moral' and 'Real', where the first was the subject's own preference and hence responsibility and guilt, while the second represented a body based disease and the sufferer was considered to be innocent (Laffey 2002. 371-73). In both cases however, the sufferers were deprived of all legal rights.

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## 1.2 Feminine madness

At the end of the eighteenth century, a change occurred in the attitude toward madness. Instead of brutal merciless treatment of the lunatics they were seen as sick human beings that need help. This social shift was accompanied by a change of the insane gender, from male to female. This shift can be traced, for example, in the removal of the two naked and manacled men sculptures (made by the English sculptor Caius Gabriel Cibber in 1677) from the gates of London's most famous madhouse, Bedlam Hospital. Gradually, the attractive figures of madwomen replaced those of disgusting madmen. By this, the madwoman's figure as a cultural-icon was established and the 'feminine madness' or the 'female malady' terms were constructed (Showalter 1985. 8).

For most women, marriage was a major means for social and financial security (Andrews and Scull 2001. 53). Accordingly, women were expected to behave in accordance with the social norms, to be modest and moderate and those who failed to observe these rules could be regarded as insane. Similarly, women that were disaffected toward themselves or relatives, or had neglected their familial or social duties, were considered irrational and hence mad (Andrews and Scull 2001. 70). A glimpse into the world of 'mad' patients and their families was made possible by the finding of John Munro's 1776 casebook. Munro (1715-1791) was one of the most famous English mad-doctors of his time and a physician at London's Bedlam Hospital for almost forty years (Andrews and Scull 2001. 71). According to Munro's recorded cases, his (private) female patients were reported to be sad, melancholic, suicidal, sinful or low in self-esteem, a description that was also reflected in his era's literary and artistic presentations (Andrews and Scull 2001. 71). These symptoms were assimilated by English society where, women were believed to be more susceptible to insanity than men and to be affected differently (Ingram and Faubert 2005. 150), (Showalter 1985. 7). In general, three prototypes of madwomen were described in the Romantic English culture: the suicidal Ophelia, the sentimental Crazy Jane, Maria or Kate and the violent Lucia (Ingram and Faubert 2005. 149), (Showalter 1985. 10). Although these prototypes differ in their personality, their insanity resulted, according to common believes, of unrequited love. This susceptibility of women to romantic matters was considered by contemporaries as a major component of their femininity and existence and hence also a cause for their madness (Ingram and Faubert 2005. 151).

## 1.3 Kate and the feminine madness

The figure of Kate, the young serving-maid that had been crazed after the man she loved left her, went to the sea and died, is described in *The Sofa*, the first book (out of six) of Cowper's poem *The Task*. The works of William Cowper (1731-1800) and particularly that of *The Task*, were very popular at his time, due to his public support for humanitarian ideas, religiosity and advocacy of simple life in the country. *The Task* was published in 1785 by Joseph Johnson and was considered as the pinnacle of Cowper's Romantic poetry. Cowper's *Mad Kate* was composed in the context of the 18<sup>th</sup> century English perception of feminine-madness, where romantic situations were apprehended as a part of the women's being and not as an episode(s) in their life (Ingram and Faubert 2005. 151). In accord with, a change in a woman's romantic situation might transform her into a mad woman. Kate's mishap thus resulted from the disappearance of her man in the sea, which was enough to transform her into a mad person, to impose on her isolation from society, as by locking her in a madhouse (Ingram and Faubert 2005. 151).

In Cowper's poem Kate is described in a few lines that narrate her clothing and behavior:

... A tattered apron hides,  
     Worn as a cloak, and hardly hides, a gown  
     More tattered still; and both but ill conceal  
     A bosom heaved with never-ceasing sighs.  
 .....  
 – Kate is crazed! (Cowper 1824. 179-80)

It should be noted that Cowper who suffered from depression and survived several suicide attempts had been institutionalized between 1763-1765 in Nathaniel Cotton's St. asylum where he received superb caring treatment (Porter 2002. 99). Yet, in spite of his personal exposure to insanity this experience was not reflected in his laconic attitude towards Kate's misery. In their book 'Cultural Constructions of Madness in Eighteenth Century Writing' Ingram and Faubert suggested that Cowper's representation of Kate, based on the description of her behavior and dress is actually a sexual metaphor of a suggestive eighteenth-century striptease scene (Ingram and Faubert 2005. 151-52).

Thus, *MadKate*, similarly to other literary and imagery descriptions of women in the 18<sup>th</sup> and 19<sup>th</sup> centuries, is a stereotypical presentation of a mad woman that is both sexualized and victimized. Other noted mad women of the 18<sup>th</sup> century were, the Fair Maria in Laurence Sterne's *Sentimental Journey*, the insane Bertha Mason (Mrs. Rochester) in Bronte's *Jane Eyre*, and the mother in William Wordsworth's *The Mad Mother*. Similarly, the crazed Hetty Sorrel in George Eliot's *Adam Bede* or the depressed and suicidal Emma in Gustav Flaubert's *Madame Bovary*, were representative mad women of the 19<sup>th</sup> century.

## 2. Artistic Aspects

### 2.1 Fuseli and Mad Kate

Fuseli's *Mad Kate* was first drawn as *Crazy Kate*, an illustration to Cowper's book *The Task* in 1806 and in 1807 the oil painting on canvas (Figure1) was released. The oil version was drawn in dark colors, except for the red scarf and ribbons tied to her bright blouse. Kate's cheeks and lips are darkly flushed and her facial expression is weird and fearsome. Kate's wide open eyes staring blankly at the spectators while her hands are stretched forward with twisted fingers and her long hair is blowing in the wind. By this means, Fuseli managed to depict the link between the inner turmoil of Kate's madness, the storm, and the rough sea behind her.



Figure 1. Henry Fuseli, *Mad Kate*, c.1806-07, oil on canvas, 92 x 72.3 cm, Goethe-Museum, Frankfurt.

As a Romantic artist, Fuseli had frequently painted female figures. These included figures based on poetic sources like Shakespeare's *Lady Macbeth*, folkloristic sources as in the numerous versions of *The Nightmare* and biblical sources like as *The Serpent tempting Eve (Satan's first address to Eve)* etc. However, none of these was as influential as *Mad Kate*, which became Fuseli's best known female portrait and probably his second most important masterpiece, after *The Nightmare* (1781) (Maisak and Kölsch 2011. 62), (Ingram and Faubert 2005. 150).

Why did this masterpiece have such an effect on its contemporary, as well as modern, spectators? Cowper's *Kate* was also depicted in 1803 by Thomas Barker of Bath and titled as *Crazy Kate* (Figure2). In agreement with Cowper's ideas, Barker placed *Kate* in tranquil countryside scenery, with a faint contour of a sea gulf in the background. In contrast, Fuseli's interpretation of *Mad Kate* departed from that of Cowper's and moved *Kate* from rural scenery to the background of a stormy sea.



Figure2. Thomas Barker of Bath, *Crazy Kate*, 1803, oil on paper on canvas 104.1x76.4 cm, York Art Gallery, UK.

There is no doubt that this change was done intentionally, as Fuseli was familiar with Cowper and his works, both in his role as the publisher's reader for Cowper's translation of Homer's *The Iliad and Odyssey* (1791) and later as the illustrator of *The Task*. One might thus wonder what had motivated Fuseli to introduce this dramatic change? Cowper's Kate was composed in accordance with the contemporary convention regarding mad women and particularly those who became mad, due to unrequited love. As such, Kate was a typical representative of the English 'Feminine Madness' phenomenon that doomed many women to social isolation and misery (Scull 1983. 233), (Showalter 1985. 1). Moreover, due to Cowper's literary description and Fuseli's visual imagery, *Mad Kate* was probably the best-known representative of the female madness phenomenon (Ingram and Faubert 2005. 150).

Here we argue that Fuseli's interpretation of *Mad Kate* was made as a dissent against the ferocious treatment of lunatics by society and particularly the treatment of madwomen. This argument is based on Fuseli's personality and unusual life history, which made him probably more attentive to the suffering of the victims of this phenomenon. Henry Fuseli (1741-1825) was born in Zurich into a well-educated family of artists and scientists. In 1762 he graduated from the Caroline college of Zurich where he studied literature, Greek and Latin and took the degree of Master of Arts under the supervision of Professors *Johann Jakob* Bodmer and *Johann Jakob* Breitinger (Knowles 1831. 11). In the same year, Fuseli and his classmate and intimate friend Johann Kaspar Lavater, exposed the corrupt deeds of the Zurich magistrate Felix Grebel, the son-in-law of Zurich's mayor, and were forced to flee from the country for a while. According to John Knowles, Fuseli's biographer, this incident was probably the most important of Fuseli's life, as it changed the track of his profession and moved him to a different country and culture (Knowles 1831. 19). This undaunted civil act may serve as an indicator of Fuseli's personality and of his high moral values. Another indication of his social susceptibility was his emotional response to the treatment of the lunatics. Fuseli was deeply shocked by the terrible conditions of the tormented inmates of those madhouses which he visited in Italy and England, like S. Spirito Hospital in Rome and Bedlam Hospital in London. Thus, the horrid experience of his visit to S. Spirito, that was described by Fuseli's own words as 'the moment of terror' (Tomory 1973. 84-5), was depicted in *The Escape* (1779) a drawing done seven years after the visit to that hospital. These harsh memories were reflected in another drawing of the same genre, *The Vision of the Lazar-house*, done in 1791-93, (Figure3) that was sold to the Countess of Guilford (Knowles 1831. 236-37).



Figure 3. Henry Fuseli, *The Vision of the Lazar-house*, 1791-3, Pen and wash on paper, 56 x 66 cm, Art Museum, Zürich, Swiss.

A reference to Fuseli's awareness of the Feminine madness phenomenon can be discerned from a diary of the painter Joseph Farington. He wrote that in 1804 Fuseli quoted a physician friend who worked in Bedlam as saying 'the largest number of inmates at Bedlam were women in love' (Farington 1923. 220). This information however, was exaggerated, as according to Dr. William Black's statistical survey of Bedlam's patients at the beginning of the 19<sup>th</sup> century, love was ranked only the fifth most common reason for admission in Bedlam (Porter 1986. 217). Nevertheless, this anecdote may reflect the subjective impression that the public, and Fuseli, had of the prevalence of the Feminine Madness phenomenon, at that time.

Was the depiction of Fuseli's *Mad Kate* inspired by a particular woman? During the beginning of the 1790s, the fifty year-old Fuseli was involved in an intimate relationship with Mary Wollstonecraft, a philosopher, writer and advocate of woman's rights that was mostly known to her contemporaries for her nonconformist lifestyle. Mary was impressed by Fuseli's 'noble qualities, grandeur of soul, quickness of comprehension, and lively sympathy', as she expressed it in a letter to him (Knowles 1831. 163). This relationship however, was abruptly terminated (1792) by Fuseli's wife in response to Mary's proposal to become an inmate in her family (Knowles 1831. 167). This incidence happened five years before Mary's death at the age of 38, few days after giving birth to her second daughter, the writer Mary Shelley (1797). In Fuseli's biography Knowles provided a vivid description of Mary's extravagant dressing style:

Her clothes were scarcely decent in her situation of life... her usual dress being a habit of coarse cloth, such as is now worn by milk-women, black worsted stockings, and a beaver hat, with her hair hanging lank about her shoulders (Knowles 1831. 164).

This unorthodox dressing style, where elements of working and higher classes were mixed, combined with her untidy hair, gave her a 'revolutionary' appearance, similar to the revolutionary French woman, depicted in the *La Maréchère* (1789) by Jacques Louis David (Figure 4) (Tomory 1973. 173).



Figure 4. Jacques Louis David, *La Maraichere*, 1789, Oil on canvas, 82x64 cm, Fine Art Museum, Lyon, France.



Figure 5. John Opie, *Mary Wollstonecraft*, 1790–1, Oil on canvas, 75.9x63.8 cm, Tate Britain Gallery, London, UK.

Although Fuseli did not mention Mary Wollstonecraft directly in his writings she was probably referred in one of his aphorisms. In volume III of Fuseli's biography, John Knowles gathered 239 of the artist aphorisms. Aphorism 226 describes the women's aspiration for power in his era. According to Tomory, in this aphorism Fuseli aimed at Mary Wollstonecraft's harsh temper and rebellion against men's dominance (Tomory 1973. 40). Taken together, it is highly likely that Fuseli's depiction of *Mad Kate* was inspired by Mary's personality and distinctive appearance (Figure 5), as some of these elements can be traced also in Kate's figure.

## 2.2 Fuseli, the Renaissance man

At the age of 22 and as a result of his role in the exposure of corruption in Zurich, his hometown, Fuseli was forced to flee to Prussia. In Berlin he assisted the Swiss mathematician and art theorist Johann Georg Sulzer in writing his work *The General Theory of the fine Arts*. In 1764 the British ambassador's deputy in Berlin, Sir Andrew Mitchell, brought Fuseli to London with the aim of exposing the English public, through lectures and translations, to the German literature and culture. This goal was made possible partly by Joseph Johnson, the prominent Londoner publisher and bookseller, who employed Fuseli as a journalist and book illustrator. Fuseli translated into English Winckelmann's art history book, *Reflections on the Painting and the Sculpture of the Greeks* (1765) and Giacinto Dragonetti's book *Treatise on Virtues and Rewards* (1769). In addition, he also published his own work, *Remarks on the Writing and Conduct of J. J. Rousseau* (1767) (Dictionary of Art Historians 2015). In 1768 Fuseli met the painter Sir Joshua Reynolds, founder and first president of the Royal Academy of Arts, who strongly recommended him to return to painting. After eight years of art study in Italy, Fuseli returned to England (1787) and was elected as an Associate of the Royal Academy in 1790 (Knowles 1831. 159). Two years later Fuseli became a Royal Academician and was promoted later to Professor of painting (1799) and Keeper of the Royal Academy (1804) (Knowles 1831. 177). Based on his diverse areas of interest and their mastery, Fuseli was regarded as a Renaissance man by his contemporaries.

## 2.3 Fuseli and the Romantic-Gothic genre

In parallel to his academic activity and close contacts with leading scientists, physicians and philosophers Fuseli did not refrain from painting in the Romantic-Gothic genre, that flourished in the England of his time (Tomory 1973. 10).

He had also a broad knowledge of folklore in general and particularly of the Germanic and Nordic, to which he had been presented by his mentor, *Johann Jakob Bodmer*, during his years in the Caroline College. Accordingly, folkloristic elements of the supernatural, demonic, macabre and horrid were incorporated in many of his paintings, including *Mad Kate*.

*Mad Kate's* portrait has an uncomfortable effect on its spectators that are forced to confront with her direct gaze. To heighten this effect, Fuseli depicted her facing a stormy sea, lit by flickering bizarre brown shades of light. This depiction of a sea storm differs from the typical representation of such events by contemporary painters, such as William Turner's painting *Dutch Boats in a Gale* from 1801 (Figure 6), where the dominant storm colors are, white, grey and black. Does Fuseli's sea storm represent an unnatural event? It seems that the source of this bizarre light is a rare weather phenomenon known as St. Elmo's fire that is best observable in sea storms.



Figure 6. William Turner, *Dutch Boats in a Gale*, 1801, Oil on canvas, 162.5 x 221 cm, Private collection.

For mariners, *St. Elmo's fire* was a good omen, as it mostly occurs toward the end of thunderstorms (<http://www.scientificamerican.com/article/quotwhat-causes-the-stran/>) and hence an indication that the danger is over. In spite of this belief, in English literature St. Elmo's fire was sometimes associated with a bad omen, as in Shakespeare's play *The Tempest* (Act I, Scene II). This association was more frequent in the Romantic Gothic era where popular tales of the supernatural and the discovery of electricity inspired the association between bad omens and St. Elmo's fire. For example, Emily, the heroine in Ann Radcliffe's Gothic novel, *The Mysteries of Udolpho* (1794) who asked a soldier about his tapering light, was answered: 'it is an omen, lady, and bodes no good' (Radcliffe 2001. 265). Similarly, in part II of the poem *The Rime of the Ancient Mariner* by Samuel Taylor Coleridge, St. Elmo's fire is described as 'death-fires' (Coleridge 1834), and in Herman's novel *Moby-Dick*, first published in London 1851, St. Elmo's fire was mentioned as 'God's burning finger' and 'Satanic blue flames' (Melville 1851. 558-59).

### 3. Physical aspects

#### 3.1 Fuseli's scientific background

Although Fuseli was an expert art historian, he also took an active part in scientific works and their illustration such as writing the preface for Lavater's *Essays on Physiognomy* and correcting Hunter's translation to English (Knowles 1831. 79). He also prepared illustrations for the 1791 and 1793 versions of *The Botanic Garden* (Scharf 2014. 454-55), written by his intimate friend Erasmus Darwin.

Fuseli was aware of the major scientific innovations of his time. In addition, as mentioned above (2.3), he had also a broad knowledge of folklore in general and particularly of the Germanic and Nordic. This knowledge was skillfully incorporated into part of his artwork. To attain high accuracy in his artistic works Fuseli used to consult with fellow scientists and physicians about the subjects of his paintings. Thus, Knowles described how in the painting of Lycidas, where both the sun and the moon appear, Fuseli had consulted his friend the astronomer Bonnycastle, as to how to position correctly the phase of the moon relatively to the sun (Knowles 1831. 370). Similarly, for the painting process of *Mad Kate* Fuseli contacted one of the physicians in Bedlam to learn more about the characteristics of mad women (Maisak and Kölsch 2011. 62). Thus, it is likely that *Kate's* portrait was based on the particular facial features of a young insane woman that fitted his artistic needs.

#### 3.2 Electricaity - St. Elmo's fire

Does Fuseli's sea storm represent an unnatural event? It seems that the source of this bizarre light is a rare weather phenomenon known as St. Elmo's fire that is best observable in sea storms. St. Elmo's fire is associated with thunderstorms and its name is derived from the Italian St. Erasmus, the patron saint of the Mediterranean sailors (<http://www.britannica.com/EBchecked/topic/517052/Saint-Elmos-fire>). St. Elmo's fire is a glow emitted by ionized air atoms that are excited in strong electric fields, such as thunderstorms. This phenomenon appears mostly near pointed objects, such as ship's masts and poles and church's spires, as electrical discharges are intensified at the end of pointed metal rods. Until the 18<sup>th</sup> century, lightning and electricity were considered to be separate phenomena. However, in 1750 the commonalities of these two was experimentally elucidated by Benjamin Franklin who had published, via his English friend Peter Collinson, his results in 'The Gentleman's Magazine'. In this pioneering work Franklin had also identified St. Elmo's fire as an electrical phenomenon (Van Doren 1938. 159). In 1767, the theologian, philosopher and scientist Dr. Joseph Priestley published *The History and Present State of Electricity*, a book in which he reviewed the study of electricity and his own experiments (Priestley 1767). It is highly likely that Fuseli who was Priestley's friend, and painted several portraits of Priestley in life, was also familiar with his scientific work and hence, also with Franklin's work that associated St. Elmo's fire with lightning and electricity. This suggestion is strengthened by the fact that Fuseli had changed his notion of 'elasticity' to that of 'electricity' almost as soon as Priestley's book appeared (Knowles 1831. 407).

The discovery of electricity and its study in the mid 18<sup>th</sup> century inspired the minds of contemporary scientists and philosophers, who adopted it for their explanation of the human mind, behavior, and physiology. Accordingly, Johann Wolfgang Goethe (1749 – 1832) the German poet, writer, scientist and statesman, commented that happiness and heroism, are as communicable as electricity while the German philosopher, theologian, poet and literary critic Johann Gottfried von Herder (1744 – 1803), drew analogies between elasticity, magnetism and electricity, which are natural energies, and those of the human spirit (Tomory 1973. 125).

Taken together, the depiction St. Elmo's fire as a background in *Mad Kate* painting had two facets, the first: a Gothic representation of the bad omen for Kate, constituted by the treacherous sea, and the second: a spectacular weather phenomenon in the form of electrical discharges, a major scientific breakthrough of his era.

### 4. Medical and Physiological aspects

#### 4.1 Drawing medical and physiological syndromes

In some of Fuseli's artworks, medical and physiological conditions were depicted. Thus, in his masterpiece *The Nightmare*, the posture of the sleeping maiden was interpreted as a sleep paralysis phenomenon (Schneck 1969. 725-26), while the flush of the maiden's cheeks was explained as a post orgasmic vasocongestion response, or sex flush (Scharf 2014. 459). *The Vision of the Lazar House* (Figure 3) illustrated from Milton's *Paradise Lost* is one of Fuseli's Milton Gallery artworks (1799). In this painting, in which Fuseli created both terror and pity in the viewer, a group of seventeen lunatics was depicted, some of them partially sketched (Knowles 1831. 222).



Although the depicted figures were regarded as insane by the contemporary society, these people were victims of various form of epilepsy, which at this time were considered as insane (Tomory 1973. 164). Fuseli was very meticulous in painting the facial expression of his models, a skill he had perfected in his extensive illustrations of Lavatar's physiognomy book (Knowles 1831. 79). Addressing Fuseli's extraordinary visual memory, Knowles noted that after the return of the artist to England from Italy he stopped painting from living models (Knowles 1831. 404) (excluding Dr. Priestely and Mrs. Neunham (Knowles 1831. 407)) and used to paint by heart (Knowles 1831. 356). Similarly, Kate's distinctive portrait was painted from memory. *Mad Kate's* impact on its spectators is her gaze caused by her Graves disease. This explanation, based on neurobiological and evolutionary-biological considerations, is the key to understanding how the *Mad Kate* painting became the most famous image of female madness.

#### 4.2 Kate's Graves disease

In many cases, medical syndromes are expressed in typical phenotypic features (*e.g.* persons with Down's syndrome, etc.). Accordingly, one might ask what the reason was for the hospitalization of the young model depicted? Kate is characterized by abnormal protrusion of the eyeballs (exophthalmos), a feature that entailed her mesmerizing look, and a swollen neck (goiter). These symptoms were first described in the medieval Persian medical encyclopedia, *The Treasure of Kbvarazm Shab*, (published in the 12<sup>th</sup> century) as exophthalmos with goiter (Nabipour 2003. 45). It should be noted however, that this information was overlooked in Western medicine till 1835 when it was independently discovered (Nabipour 2003. 45).

*Mad Kate* was painted about thirty years before exophthalmos with goiter was rediscovered by the Western medicine, and for that reason the confinement of Kate's model in a madhouse resulted from other reason(s). In 1835, ten years after Fuseli's death, the Irish physician Robert James Graves (1797-1853) described a case of goiter with exophthalmos, a disease which was subsequently coined Graves' disease in his honor. Graves disease frequently results in hyperthyroidism accompanied by enlargement of the thyroid (goiter) and in Graves' ophthalmopathy in which the tissues and muscles behind the eyes become swollen and push out the eyeballs. Symptoms of hyperthyroidism may include: muscle weakness, hand tremors, fast heartbeat, and weight loss. Moreover, sufferers from hyperthyroidism may undergo significant behavioral and personality changes like anxiety, mania and psychosis. The suggestion that Kate was a victim of Graves disease had been recently promoted by Prof. Enio Martino, who was an endocrinologist from the university of Pisa. In a short-note published in the the Journal of Endocrinological Investigation, Prof. Martino argued that *Mad Kate* is actually an image of goiter with *exophthalmos* and that the lady was not crazy, but a visual imaging of thyrotoxic with Graves' ophthalmopathy with psychiatric symptoms, mimicking madness (Figure 7). Furthermore, Prof Martino added that Fuseli's *Mad Kate* is one of the few paintings showing a thyrotoxic patient with Graves' ophthalmopathy (Martino 2010. 438).



Figure 7. *Mad Kate*, dashed blue circles indicate goiter with exophthalmos affected body parts.

To conclude, although Fuseli could not be aware of the Graves disease symptoms, he managed to depict such an image and skilfully illustrated her inner nervousness that was perceived in his era as madness. In agreement with Prof. Martino's suggestion, Kate's protruding eyes, swollen neck (evident below her scarf) and her awkwardly forward stretched hands, that illustrate her apparent nervousness, are all indicative of Graves' disease with psychiatric symptoms. Furthermore, by positioning Kate in front of a bizarre and stormy sea that is lit by St. Elmo's fire, the artist increased the viewer's unconscious emotional responses to Kate's madness.

### 4.3 Kate's gaze.

Very soon after its release, *Mad Kate* became Fuseli's second most popular masterpiece and probably the most famous image of the female madness phenomenon (Ingram and Faubert 2005. 150). *Mad Kate* did not introduce a new concept, in contrast to Fuseli's most successful Gothic masterpiece *The Nightmare* (1778), as images of insane women were already well known to the public. Such images include: Matthew William Peters' mezzotint drawing *Playing* from 1778 (Figure 8) and Angelica Kauffmann's *Insane Maria* from 1777 (Figure 9).



Figure 8. Matthew William Peters, Love in her Eye sites Playing, 1778, mezzotint on paper, 34.4 x 39.6 cm, Museum St Petersburg, Russia.



Figure 9. Angelica Kauffmann, *Insane Maria*, 1777, canvas on oil, 65.5x65.5 cm, The Hermitage The British Museum, London, UK.

This success can be attributed mainly to the emotional impact that *Mad Kate* exerts on its spectators. How can this emotional impact, this fearful and accusing gaze, be explained by contemporary science? Relative to other body parts the human, face is probably the most important visual stimulus, as it provides essential social information regarding the state of mind of other people (Jack and Schyns 2015. R621). The human eye has a large white outer layer (sclera) that surrounds the central dark iris. This unique human evolutionary development allows the viewer to detect the gaze direction, and thus to find out what is in the onlookers focus of interest. Accordingly, when the dark iris is in the center of the sclera a direct eye contact (or gaze) occurs, that is a prerequisite for social interaction by the brain's regions for face recognition (Itier and Batty 2009. 844-45). As such, the human brain evolved to contain six discrete regions devoted for face recognition. These regions are connected to:

- a) the prefrontal cortex, where moral judgment and decision-making processes are executed, and
- b) the amygdala, the region that orchestrate emotions (Kandel 2012. 333).

For example, rapid non-verbal communication returning by the brain, is of special importance for survival as it may provide the means to alert a group for immediate danger by transmitting fear signals. Accordingly, wide opening of the eye, a situation that could be detected as an increase in the contrast between the white sclera and the dark iris regions of the eye is used by the above mechanism as a cue for fear (or surprise) sensations.

By the use of this cue, an observed source of danger is transformed from the brain into a physical signal (i.e. wider eyes) that subconsciously alarms the viewers of danger (Lee 2013. 963-64), and cause recognizable fear sensation (Smith et al 2005. 186-87). The operation of this fast alarm mechanism was recently validated by the findings that, the greater the size of the eye whites, the stronger is the responsivity of the amygdala (Whalen et al 2015. 2061).

So, by depicting Kate with wide open eyes, as in Graves disease with exophthalmos, in which the sclera is further extended as compared with normal eye, Fuseli had created a super-fear and surprise stimulus that is subconsciously perceived by its spectators and stir them emotionally. Moreover these sensations were further augmented by the stormy sea lit by St. Elmo like fire background.

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