

Descriptions of clinical semiology of seizures in literature

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ABSTRACT – Literary texts are an important part of the cultural history of many fields of medicine. Accounts of epilepsy are frequent, and descriptions of seizure semiology are often included with varying detail. This review looks at these, and considers the authors' background knowledge of epilepsy.

The first group of writers suffered seizures themselves. Some of them provide remarkable and novel insights into the subjective symptoms and experiences in and around seizures.

A second group draws from their own observations of seizures in others who may have been close relatives or fortuitous strangers. Here, the outside view prevails, and seizures may be described with clinical objectiveness. Commonly, the reactions of onlookers become part of the narrative beyond the seizure description.

The third group writes from second-hand knowledge, which may be other observer reports, interviews with people with epilepsy or with experts, information being available in dictionaries, medical textbooks and the like. The professional standard of most writers means that the resulting descriptions are quite accurate, but there are also examples of poor use of such information.

Many authors' sources are not known, but can be assumed to belong to one of the above categories, and we can sometimes guess. It appears that even authors with no first-hand knowledge are often aware of seizure types other than the most widely known, generalised tonic-clonic, and there is a widespread interest in warnings and how the afflicted respond to them.

The quality of an author's fictional account of epilepsy should not be judged from a translation, because specific aspects and the language involved in the description may have been misunderstood by the translator.

Key words: epilepsy in fiction, seizure types, semiology, cultural history, images of epilepsy

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Literary accounts of epilepsy are frequent, and the writers' objectives for using epilepsy in fiction are varied (Ozer 1991, Vanzan Paladin 1995, Wolf 1995). Their ambition is not usually to write a correct medical case history, the epilepsy serves a literary purpose. This does not always necessitate a detailed description of seizu-

res. Sometimes only certain aspects are depicted, or the epilepsy is merely mentioned. However, the corpus of literary seizure descriptions is large enough to raise the question as to what they are based upon. In quite a few instances, this is generally known. In others, I have had to contact the authors, and many of them have been

kind enough to give this information. In a few instances, a good guess is possible, but there are still a number of descriptions the sources of which are unknown.

It is the authors' background knowledge that is therefore used to structure this review, starting with descriptions based on first-hand knowledge that writers acquire because they have epilepsy themselves.

Descriptions based on personal experience

One of the fundamental facts about the semiology of seizures is that there may be subjective or objective signs and symptoms, or both. The subjective experiences are known only to the patient, whereas the objective signs remain hidden to him to the extent that he loses consciousness during the seizures or part of them. Writers with epilepsy can be expected to give particularly elaborate and accurate accounts of subjective seizure experiences. The best-known example of this is **Fyodor M. Dostoyevsky** (1821-1881). The description, given by the character Kirillov in *Besy* (*Devils*, 1872), of a feeling of utmost happiness, the presence of eternal harmony in an aura which, however, can only be tolerated for a few seconds, is famous, and indeed, ecstatic auras have sometimes been called "Dostoyevsky's aura". In *Idiot*, he also gave two detailed descriptions of Prince Myshkin's experiences and behaviour during the crescendo of epileptic prodromes. One seems to be aborted when, in his growing excitement, he manages to knock over and smash a precious Chinese vase, but then it returns and ends in a convulsive seizure. During the other, he becomes increasingly preoccupied with the image of a knife; at the end he meets his friend/rival Rogoshin who steps forward to kill him with this very knife, and he collapses in a severe seizure.

Unlike Dostoyevsky, another 19th century author, Brazilian **Joaquim Maria Machado de Assis** (1839-1908) did all he could, though with little success, to hide his epilepsy, possibly a right temporal lobe epilepsy (Guerreiro 1992) from the public. He went as far as replacing the word "epileptic" (used as a simile) in his novel *Memorias póstumas de Brás Cubas* (*The Posthumous Memoirs of Brás Cubas*, 1882) by "convulsive" in a later edition. However, in the same novel he gave a description of a seizure with an elaborate visual illusion. In *Quincas Borba* (1891), a novel that was probably influenced by Dostoyevsky's *Idiot*, one scene seems to represent an elaborate epileptic experience, an experiential aura triggered by decision-making (Forster *et al.* 1975), consisting of the arousal of the memory of a seizure with loss of consciousness, which was provoked by the observation of an execution. At Machado's time, complex partial seizures and their semiology were virtually unknown, and he was able to make literary use of his experiences without giving the diagnosis away.

At about the same time, Danish writer **Ernesto Dalgas** (1871-1899) published his novel *Lidelsens vej* (*The way of suffering*, 1898), which has a strongly autobiographic background, and where the protagonist experiences seizures consisting of an illusion of derealisation where the people surrounding him look like lifeless masks. These occur in highly significant, emotional moments like in church during his confirmation ceremony, and during a moment of erotic seduction (Wolf 1973).

In Norwegian writer **Trygve Andersen's** (1867-1920) novel *Mot kvæld* (*Towards evening*, 1900), the protagonist has hallucinatory experiences which would not immediately be interpreted as epileptic symptoms. However, as Aarli (1993) found out when he went through the author's hospital files, the descriptions include in fact, symptoms of epileptic seizures which were diagnosed after Andersen had written the novel.

The only other known example of literary expressions of epileptic experiences when the writer was still unaware of the diagnosis is by British author **Margiad Evans** (1908-1958). In her book *A Ray of Darkness* (1952), she describes in minute detail the events preceding and surrounding her first generalised tonic-clonic seizure which she had experienced in 1950 at the age of 42. It was due to a brain tumour from which she would eventually die at the age of 50. The seizure made her aware that for many years she had had isolated auras with an indescribable experience of double reality which, in the book, she tries to explain with many reformulations in a way that is typical of sufferers' descriptions of temporal lobe seizures (Wolf *et al.* 2000). She found that these experiences made her particularly able to create oxymora, literary devices which combine two opposing concepts into one. She saw them as a hallmark of her art, of which she was very proud. An example of an oxymoron is the title *A Ray of Darkness*, and the description includes several others, such as "loud silence" or "sunny shadow". Looking into her earlier writings, oxymora could not be found in her first books, but they are there in *Autobiography* (1943), which she had started to write in 1939, and in stories written from 1944 onwards and included in the collection *The Old and the Young* (1948). These probably reflect frequent auras experienced during that period (Wolf 2004).

In *A Ray of Darkness*, Evans also expresses a unique view of a well-known, superstitious association of epilepsy: "The old idea of demoniac possession, I am sure, arose not from the onlookers of sufferers in fits but from the sufferers themselves. Because in the violent attacks one feels as though the body has been entered by a terrific alien power; and that that power is trying, after entrance, to push its way out again."

A similar observation is made by German author **Monika Maron** (*1941), who in *Animal triste* (1996) uses her personal experience of an isolated, generalised tonic-clonic seizure (personal communication) to describe an event experienced by her protagonist. The seizure starts

with a “sudden mysterious numbness” in her tongue “that soon spread to the rest of my senses. What happened during the next twenty minutes, I only know from the report of a young woman...” After an account of the convulsions which others had observed, the author gives a rare report of more subtle symptoms during recovery: “For several weeks I had at times the impression that something in my head didn’t function as it did before the spell – reversed sides, as if someone had switched the poles around. For example, I remembered people’s first names after their last names, or I wrote twenty-three when I meant to write thirty-two.” The event leaves a deep irritation and, although the narrator, a natural scientist, is aware that such symptoms have a logical explanation she becomes “obsessed with the idea that an alien force had simply switched me off for fifteen minutes... and ... slightly altered the way my brain functions. I didn’t really believe that, but it corresponded well with the state in which this inexplicable incident had left me.” This experience becomes a premonition and metaphor for the novel’s subject matter, an unlimited and mortal love affair.

Another illustrative, autobiographical description of the postictal reorientation after a first generalised tonic-clonic seizure that occurred without warning, is given by Dutch writer **Andreas Burnier** (*1931) in *Een tevreden lach* (*A content laughter*, 1965).

Australian writer **Susan Hawthorne** in *The Falling Woman* (1992) talks freely, often metaphorically about her seizures. She describes the reorientation phase with strangers looking at her and nursing her (Wolf 2000b).

Norwegian writer **Herbjørg Wassmo**, who is known to have epilepsy, in her novel *Karnas arv* (*Karna’s heritage*) of 1997 characterizes her epileptic character’s aura as the “sea sound”, but it remains unclear if this again is an attempt to give an approximate name to something indescribable, or a poetic metaphor – not that these possibilities are mutually exclusive.

American journalist **Richard Pollak**, who himself has epilepsy, participated in a public debate during the 1970s concerning the postulated propensity of people with epilepsy to violent and potentially dangerous behaviour (see below). As a consequence of this, in 1986 he published a suspense novel, *The Episode*, where a journalist with epilepsy is the protagonist. The book seems in the first place to have been written with the intention to inform and educate the reader about epilepsy and its treatment (Ozer 1991, Wolf 2000a), and it contains an excellent description of a prolonged twilight state due to absence status in a patient who is treated with phenytoin for tonic-clonic seizures, but whose absences are neglected.

The leading character in Dutch **Rosita Steenbeek**’s autobiographical novel *Den laatste vrouw* (*The last woman*) of 1994 suffers from seizures due to a cerebral haemorrhage and which start with a visual aura in the hemianopic visual field (Wolf 2000a).

To conclude, the descriptions of seizures by authors who have epilepsy, not surprisingly deal mostly with auras and other subjective experiences, and these can be rich and novel in detail. All these authors have integrated them into their literary work, although not always overtly. It is often fascinating to follow this part of the creative process.

An interesting consideration is, whether similarly convincing, subjective accounts of seizure symptoms in the writings of other authors allow the conclusion that they also draw from personal experience. **Thomas Pynchon** (*1937) comes to mind, who in *Gravity’s Rainbow* (1973) talks about an “odour, one he knows but can’t quite name, an aura that threatens to go epileptic any second”, “a smell from before his conscious memory begins, a soft and chemical smell, threatening, haunting, not a smell to be found out in the world.”

Beyond this description, which has all characteristics of a temporal lobe aura, Pynchon in *The Crying of Lot 49* (1966), uses the epileptic aura as a metaphor of stunning accurateness for the premonition of a pivotal event: “She could ... recognize signals like that, as the epileptic is said to – an odour, colour, pure piercing grace note announcing his seizure. Afterward it is only this signal, really dross, this secular announcement, and never what is revealed during the attack, that he remembers.” This simile, the novel’s “master metaphor” for “the violent intrusion of the invisible world into the human one, and yet an intrusion leaving nothing of itself behind” (Fowler 1984) indicates an intimate knowledge of epileptic experiences, no matter how the author came by it (Wolf 1994). Fowler’s interpretation juxtaposes Pynchon with Margiad Evans and Monika Maron.

Vietnam veteran **Thom Jones** was an amateur boxer; the character of a former boxer and Vietnam veteran with epilepsy returns in so many of his ultra-realistic short stories in the collections *The Pugilist at Rest* (1991) and *Cold Snap* (1995) that we are inclined to believe that epilepsy also is part of the author’s personal history. More precisely, a boxing trauma is the cause of his character’s left temporal lobe epilepsy. The semiological details include Dostoyevsky-like auras (*The Pugilist at Rest*), ictal photomes (“black lights” in a story of this title), a “fugue épileptique” (*A White Horse*) and empty staring accompanied by lip smacking and suffocating noises (*Dynamite Hands*). Twice, seizures are compared with orgasm (*Unchain My Heart, I Need a Man to Love Me*), and there is a character who gets her own way using “pseudoepileptic seizures” (*Silhouettes*). Characters with epilepsy also appear in his third collection, *Sonny Liston was a Friend of Mine* (1999), but without descriptions of seizures.

The above-mentioned experience of regaining consciousness after a seizure in unexpected surroundings, which can contribute so much to patients’ perceptions of loss of control, is presented in *Opium Dreams* (1997) by Canadian writer **Margarte Gibson** (*1948), with several variations (Wolf 2000a).

Descriptions based on own observations

A second group of seizure descriptions are based on authors' observations of seizures in others.

The earliest known example is **Alfred Tennyson** (1809-1892). In his epic poem *The Princess* (1847/51), a Prince has "weird seizures" with an experience of derealisation where "all things were and were not" (Wolf 2000c):

"On a sudden in the midst of men and day,
And while I walk'd and talk'd as heretofore,
I seem'd to move among a world of ghosts,
And feel myself the shadow of a dream.
Our great court-Galen poised his gilt-head cane,
And paw'd his beard, and mutter'd 'catalepsy'".

Wright (1987) has shown that both the descriptions, which clearly indicate temporal lobe seizures and the euphemistic diagnosis, are based on Tennyson's father.

Almost the entire literary work of the Japanese, 1994 Nobel Prize winner, **Kenzaburo ōe** (*1935) is centred on what became his, and his family's, most significant life event: the birth of a son with a meningoencephalocele, who became moderately mentally handicapped and autistic (with considerable musical skills), and who later developed epilepsy. Inclusions of autobiographic details are typical of ōe's fiction, and in many of his novels both he (e.g. as "uncle K.") and his son, Hikari, appear as secondary characters. Thus, the readers of his novels learn that you need to take your drugs regularly if you have epilepsy. However, seizure descriptions are rare, but *Shizuka na seikatsu* (*Quiet days*, 1990) includes several, including twilight states with a prodrome and slow evolution where awareness and reactivity are not necessarily lost. In one seizure in a crowded Tokyo railway station, his sister first keeps him upright, then he soon begins to protect her against the crowd which starts to turn against them (Wolf 2000a). During a seizure he often has diarrhoea and a foul smell comes from his mouth.

Swiss author **Klaus Merz** (*1945) writes short prose where he often returns to the dark side of his family history – a brother who was stillborn, another brother with a severe handicap due to hydrocephalus, a father with post-traumatic epilepsy (Wolf 2004). His father figures in two stories: the first, *Im Schläfengebiet* (*In the temple's realm*) in the collection *Am Fuß des Kamels* (*At the camel's foot*, 1994) describes an aura with epigastric and olfactory/gustatory symptoms. In *Jakob schläft* (*Jacob sleeps*, 1997), the diagnosis is "grand mal", but the narrative is more concerned with the reactions of his family and the people outside than with the seizure semiology.

However, intimate knowledge of a person with epilepsy is not a precondition for being impressed by the observation of a seizure. British author **Muriel Spark** (*1918), during an evening in town, happened to see a man having a generalized tonic-clonic seizure on the street in front of a pub. She was so impressed by the sight that she "wanted from that moment to enter the thoughts and feelings of an

epileptic, to create an epileptic character" (personal communication). This she did fourteen years later in her novel *The Bachelors* (1960), where she describes the seizure in highly dramatic terms. For someone who knows epilepsy, the description seems quite exaggerated, but it obviously reflects the impression that a convulsive seizure can make on an unprepared observer.

In direct contrast, is the tense, almost clinical description, as if in slow-motion, of a generalised tonic-clonic seizure with an initial cry, tongue biting, head jolting backward and slamming into the pavement in the clonic phase, the arrest of breathing and enuresis, in *The Blindfold* (1992) by American writer **Siri Hustvedt** (*1955). Vision, in all its possible variants, is the central theme of her novel, and the description of the seizure seems to indicate an instance of a "photographic" memory. The chance observation of a foreigner having a seizure in the street, during her first visit to a big city, Chicago, at the age of seven, is one of the memories Hustvedt mentions many years later in a newspaper article (Hustvedt, 1998). However, she seems to have collected more information on epilepsy later, and in her novel *What I Loved* (2003), a generalised tonic-clonic seizure in a child of six, which starts with a complex visual aura ("Look, there's an angel"), is mentioned.

There are three literary characters with epilepsy that are based on people from the authors' local sphere. The first is Bontemps, gravedigger, cook and expert master of ceremonies at traditional feasts in *La mare au diable* (*The devil's pond*, 1845) by **George Sand** (1804-1876), whom she described with much sympathy (Wolf 2000d). He had epilepsy, would be found in ditches after a seizure, and died from a fall from the hayloft where he used to hide so his family wouldn't see the seizure he felt coming. Obviously he had some kind of a premonition, a prodrome or an extended aura. The seizures themselves are not described.

The second is a man known by the nick-name *Lindby-Skytten* (*The Lindby shot*) in Danish, 1944 Nobel Prize winner **Johannes Vilhelm Jensen's** (1873-1950) *Himmerlandshistorier* (*Stories from Himmerland*, 1898-1910), a man "who bore one of Pan's fatal signs on his forehead". He figures in several of the stories, most of which are based on personal encounters, local tales and anecdotes. Lindby-Skytten lived an outdoor life, hunting and fishing, was a friend to all children and was quite a hand at cards. He had the "falling sickness", which got worse over the years and made him increasingly unsociable. He was eventually found in a loft where he had lain dead for five days. In the story that has his name for its title, he has a seizure while fishing, which starts with a warning. Jensen does not describe the warning, but relates what a witness would have observed: The man suddenly becomes motionless, seems to listen, the expression on his face becomes "small, in a funny way", he moves back from the water, stores his things away, his face turns grey, he stares, fumbles around his clothes, then, like a piece of wood,

falls backward on the turf into a symmetric, generalised tonic-clonic seizure with the eyes turned back in their sockets and showing the whites, and his thumbs enclosed in his fists. The entire seizure is described in detail, including the postictal recovery, where his eyes at first “mirror all world’s empty wonder”, whereafter life returns to them as if “the secret of times, the only eternity opened up there”. After a quarter of an hour he gets up slowly, collects his things and moves on to another place. The convulsions are described with an exactitude and correctness which appear almost impossible without any personal observation. From Danish author **Karen (Tania) Blixen** (1885-1962), we know that she witnessed seizures in Sirunga, in one of the native boys on her farm (*The African Farm*, 1937). She talks about him at some length in her second book of memoirs from Africa, *Shadows on the Grass* (1960). The other children called him *sheitani*, the devil. Blixen first thought this was because he could be a quite mischievous little fellow, but learned later that it referred to his illness, which was considered to be possession by the devil. She tells how everyone else fled when he had a seizure, whereas she nursed for him, which established a special relationship. His seizures are “terrifying to observe” with blue froth about the mouth. He has auras and warns those around him by saying “I’m going to die”.

Descriptions based on other sources

An author may even become impressed enough by a report of a seizure which someone else has observed, to include it in his own fiction. This happened to Northern Irish teacher and writer **Bernard MacLaverty** (*1942), who in *Lamb* (1982) describes a school-boy’s convulsive seizure in a gym, during which he slides behind wall-bars and burns himself on hot radiators (Wolf 2000a). He heard the story of such an event from another teacher who had witnessed it (personal communication). In his letter, MacLaverty also mentioned a memory from his childhood when he saw a man having a seizure in the church porch, a “strong and frightening” memory with details of sounds and even of the shoes the man was wearing.

American writer **Mary Jo Putney**, by chance made the acquaintance of several people with epilepsy and became interested in ways of dealing and successfully coping with the condition. This made her choose epilepsy as a major issue in her romance *Dearly Beloved* (1990), where a father and his natural son both have epilepsy (Wolf 2000a). The boy has auras and is able to “hold seizures off”, a possibility which the author had heard of from the epileptic sister of a friend (personal communication).

Two authors probably obtained their knowledge about epilepsy from medical studies and psychiatrist training: the protagonist of *The Last Gentleman* (1966) and *The Second Coming* (1980) by **Walker Percy** (1916-1989) is

Will Barrett who has seizures, a character whose literary ancestors are Prince Myshkin in Dostoyevsky’s *Idiot* and Hans Castorp in Thomas Mann’s *The Magic Mountain*. The author however, does not aim to tell the story of a person with epilepsy, and is rather vague about the seizures. Terms such as *déjà vu*, *fugue*, amnesias, “little fit, not a convulsion” appear in the first book; in the second we find “temporal lobe *petit mal*” and experiential auras with olfactory hallucinations. The same author in *The Thanatos Syndrome* (1987) discusses ethical problems with respect to modern technological and medical organisations against the background of Nazi medical experiences. Status epilepticus is named as an indication for euthanasia. One character in the book develops seizures, which are unconvincingly diagnosed as temporal lobe epilepsy.

The best-seller science fiction thriller author **Michael Crichton** (*1942) has two epilepsy stories. In *The Andromeda Strain* (1969), one member of a group of researchers fighting against a new type of germ which was brought in from outer space, suffers a seizure at a moment when it endangers the whole team. It is described as a generalised tonic-clonic seizure, provoked by intermittent lights, but the author gets the flicker frequency wrong at 3 Hz. More problematic, in *The Terminal Man* (1972), he describes a paranoid character with post-traumatic, right temporal lobe epilepsy whose seizures start with an unpleasant olfactory aura which, when pressed, he compares with “pigshit in turpentine”. During the unconscious phase of the seizure he commits acts of violence, of which he has no recall. He becomes the first patient to try a new treatment: the intracerebral implantation of an electronic device which detects the start of epileptic activity and counteracts it by electric stimulation. The stimulation is effective but a feedback mechanism develops which leads to an increase in the seizures ending up in a non-convulsive status that turns the man into a clever, killing berserk. The author received heavy criticism for promoting negative images of patients with temporal lobe epilepsy. Richard Pollak’s above-mentioned *The Episode* was, in fact, mostly a response to Crichton’s novel (Ozer 1991).

A typical source for authors who, for whatever reason want to use epilepsy in their fiction, are medical dictionaries and popular health books. The description of “catalepsy” which **George Eliot** (1819-1880) gives in *Silas Marner* (1861) conforms with Quincy’s *Medical Dictionary* of 1804, and is likely to have been taken from this or a similar source (Wolf 2000c). Silas Marner is subject to “trances”, where he stands motionless and unreactive with an empty look in his eyes, and of which he has no recall. He becomes a helpless victim of his condition as, twice, all his hopes in life are destroyed by actions taken against him during these fits. Their description today would lead to a diagnosis of non-convulsive status (absence or psy-

chomotor) with loss of awareness and reactivity as the only symptom.

Not all authors however, have been successful using the literature which obviously has been their only source of information. This applies particularly to works where the author's intention, by introducing the concept of "seizures", was one of dramatic effect. Typical examples are *Das Taschentuch* (*The handkerchief*, 1994) by German **Brigitte Kronauer**, where the epileptic character has seizures with a random combination of virtually all known focal and generalized seizure symptoms all cobbled together, *One Flew Over the Cuckoo's Nest* (1962) by American writer **Ken Kesey**, and the seizure description in *Eingeschlossen* (*Locked away*, 1986) by German **Ingeborg Drewitz** (1932-1986), which is the most incredible nonsense and is likely to be the product of pure imagination.

Descriptions with unknown sources

Among the numerous fictional accounts of epilepsy there are of course many for which the source is unknown. Certainly, some accounts are based upon the author's personal knowledge of one kind or the other, but others are not. If seizures are described at all, they are often of the generalized tonic-clonic type, and the authors are more or less successful in depicting them. However, there is also quite a substantial number of works of fiction where less well-known seizure types appear, and some writers are quite well informed about them, despite their sources.

Wilkie Collins (1824-1889) in *Poor Miss Finch* (1872) tells a story where epilepsy has an important function in the novel's sophisticated plot (Wolf 2000c). The seizure is described accurately, with a right tonic versive onset: "A frightful contortion fastened itself on Oscar's face. His eyes turned up hideously. From head to foot his whole body was wrenched round, as if giant hands had twisted it, towards the right. Before I could speak, he was in convulsions on the floor at his doctor's feet. 'Good God, what is this!' I cried out. The doctor loosened his cravat, and moved away the furniture that was near him. That done, he waited – looking at the writhing figure on the floor. 'Can you do nothing more?' I asked. He shook his head gravely. 'Nothing more'. - 'What is it?' – 'An epileptic fit.'"

A Jacksonian seizure is well described by **Mosche Ya'akov Ben-gavriël** (1891-1965), an Israeli writer of Austrian origin who wrote in German, in *Das Haus in der Karpfengasse* (*The house in Carp Lane*, 1958). A focal somatosensory aura in the left arm allows a character in **Margret Frazer's** *The Murderer's Tale* (1996) to prepare for the seizure and seek help. Columbian writer **Laura Restrepo** (*1950) in *Dulce compañía* (*Sweet company*, 1996) also describes a Jacksonian seizure which, however nosologically dubious, is precipitated by intermittent light stimuli (Wolf 2000a). She also gives a poetic description of an aura; however her knowledge is doubtlessly second-hand.

Photosensitive absences provoked by looking towards the sun and eye blinking, or by flickering candles in an otherwise completely dark room, followed by a convulsive seizure are found in *Das Waisenhaus* (*The orphanage*, 1965) by German author **Hubert Fichte** (1935-1986). We can assume that he tells them from own observations, since at the time it would have been difficult to learn about this type of reflex epilepsy otherwise (Wolf 2000a).

Absences or "*petit mal*" as a seizure type are mentioned and correctly described by several authors such as Canadian **Margaret Atwood** (*1939) as a simile in *Life Before Man* (1979), **Rona Jaffe** (*Class Reunion*, 1979, and *After the Reunion*, 1985), **Kurt Vonnegut** (*1922) in *Hocus Pocus* (1990, both from the USA), and German writer **Ralf Rothmann** (*1953) in *Milch und Kohle* (*Milk and Coal*, 2000).

Simple absence is the seizure type described in one of three persons with epilepsy in *La Storia* (*History*, 1974) by **Elsa Morante** (1918-1985), one of world literature's great novels with epilepsy as a major motif (Vanzan Paladin 1995, Wolf 2000a). His mother and brother both have generalised tonic-clonic seizures with warnings, and these are poetically described. Several convulsive seizures are described with variable detail, and the Italian author is obviously well informed about them.

Another outstanding literary work where the main character's epilepsy, and her life with it, is central to the story is *The Piano Man's Daughter* (1995) by Canadian writer **Timothy Findley** (1930-2002). He tells poetically of visual auras (a perception of flames) and the patient's ability to stop them (Wolf 2000a). His seizure descriptions are not detailed but include prolonged twilight states with residual responsiveness and amnesia, which fit well with a diagnosis of absence status.

Focal seizures with complex automatisms also appear in fiction. Prince Myatlev, the hero of Georgian writer's **Bulat Okujava** (1924 - 1997) satirical novel *Puteshestviye dil-etantov* (*The amateur's travel*, 1976) has seizures which may be the consequence of a head injury received in the war. They include a phase of automatism during which he deals money out to bystanders, which gives rise to some embarrassing misunderstandings.

A Carmelite nun, the main character in *Lying Awake* (2000) by Los Angeles author **Mark Salzman**, disturbs the service when she starts wandering about at the moment of the Eucharist. She is unaware of this part of the seizure and only experiences her visionary auras as a religious experience and gift. This antithesis of subjective and objective seizure symptoms develops into the central issue of the novel.

The most spectacular event however, is found in **Raymond Chandler's** (1888-1959) famous *The Big Sleep* (1939), where the solution of the mystery is that the victim was shot by his sister-in-law during a complex partial seizure, and she has no recall of the scene. The seizures are not very well described and start with a hissing sound mostly

followed by some nasty behaviour, but on one occasion by a contortion of the face, frothing, spasm of the jaw, a fall and enuresis. The author also informs the reader that epilepsy can be treated. However, the story is somewhat problematic as the murder is not out of context or character with the person's conscious behaviour, so the misconception of people with epilepsy as being dangerous (see above Michael Crichton and Richard Pollak) is reiterated.

Perhaps the most unexpected finding in this analysis of seizure semiology in fiction is how many writers are familiar with auras, often including their symptomatology, although they cannot all have had epilepsy themselves! Several have already been named but more deserve to be mentioned.

Samuel Beckett (1906-1989), Irish 1969 Nobel Prize winner, in *Molloy* (1950) knew that an epileptic warning can be used to prevent a fall in a seizure.

Grande Sertão: Veredas (*The Devil to pay in the Backlands*, 1964) by Brazilian writer **João Guimarães Rosa** (1908-1967) is a fictional, former warrior's account of the endless raids of local warlords in the Brazilian backlands. When his detachment is besieged in a farm, one of his comrades has an epileptic seizure, starting with a perception of heat in the nose which is well-known to the man. They all know that this is an old disease and has nothing to do with the war.

In the novel *Der Taumel* (*The Giddiness*, published posthumously 2000) by Berlin writer **Libuše Moníková**, (1945-1998), an artist with epilepsy has a seizure with a visual aura of exploding lightning which starts when, very agitated, he paints at his easel.

The protagonist of *The Miniature Man* (1987) by American author **Richard Muir** can provoke auras in which he is able to see the structures in a game of chess with extreme clarity that makes him an almost unbeatable player. He realises that the condition is pathological when, for the first time, it gets out of control, and he has a generalised tonic-clonic seizure. It would be very interesting to know if, in this case, the writer's account is related to an instance in real life.

Swedish writer **Håkan Nesser** in *och Piccadilly Circus ligger inte i Kumla* (*and Piccadilly Circus doesn't lie in Kumla*, 2002) is aware of gustatory auras ("a taste of metal on the tongue"), and his character Maurits can fight them off by concentration and clenching his fists.

Semantic paraphasias as an aura symptom are known to Finnish writer **Leena Lander** (*1955) in her novel *Tulkoon myrsky* (*Let the storm come*), and the subsequent convulsive seizure is presented in poetic transformation. "Storm" is a metaphor for seizures.

To sum up, the semiology of epileptic seizures in fiction is highly varied, in most instances revealing that the writers have a good knowledge of the subject, although their sources are not always known.

A note on translations

Analyses like this should use as much as possible the original texts because translations are not always reliable. The present author does not read Finnish, Japanese or Russian, and his knowledge of Portuguese and Spanish just allows, when in doubt, to check with the original text that a translation is correct. Some of Kenzaburo Oe's books have been translated into German from the English translation, so there is a double source of inaccuracy.

Text passages about epilepsy, like other passages referring to specialist knowledge, seem to be particularly sensitive to errors of translation. Thus, three references to epilepsy in Thackeray's *Vanity Fair* (not mentioned here because they don't include descriptions, but interesting in their way), were simply omitted in my German "integral text" edition. Thomas Pynchon's crystalline and sophisticated epilepsy metaphor in *The Crying of Lot 49* (see above) was reduced to words which were out of context in the German translation by one Wulf Teichmann, who obviously didn't know about auras and gave up trying to understand them. There also are different schools of translation; Eva Schönfeld, who translated Wilkie Collins' *Poor Miss Finch* into German, belongs to one which believes in a rather free procedure that creates a very readable text in a contemporary language, which is expected to appeal to the reader. She transforms Collins' sober, objective description of seizure and the physician's calm and competent behaviour into a highly dramatic, confusing scene which makes us hope that she would never come to the assistance of someone having a seizure. Readers of translations, beware!

Conclusions

A substantial number of literary works not only mention epilepsy for some reason but include descriptions of seizures. The purposes with such descriptions are not medical but literary and manifold. There is much variety of the presented semiology which may reflect the writers' background of knowledge. Not surprisingly, authors who have had seizures themselves mostly dwell with the inside aspects of their experiences when they use them in literature. These elaborate texts can provide us with most valuable novel and original insights into the subjective experience of epilepsy.

In texts which draw from observations of seizures the outside view prevails. The seizures may be described with clinical objectiveness, and some authors stand out as excellent observers who even seem to write from a "photographic memory". In other instances, the narrative witnesses the awe which the seizure induced in its unprepared observer, and it is common that these writers include the reactions of onlookers beyond the mere seizure description.

A third group of authors writes from second-hand knowledge which may be other observers' reports, interviews with persons with epilepsy or with experts, information available in dictionaries, medical textbooks and the like. The professional standard of most writers effects that the resulting descriptions are quite accurate, but there are also examples of failure in using such information. If an author wants to create drama and emotions, either in fictional characters or in the reader, and his descriptions are based on mere imagination or ill-digested reading, exaggerations and contortions may result which make him lose credibility with the attentive reader who senses the overstatement. Many authors' sources are not known but can be assumed to belong to one of the above categories, and guesses are sometimes possible. It appears that even authors with no first-hand knowledge are often aware of other seizure types than generalised tonic-clonic, the most widely known to the general public. There is a widespread interest in warnings and how the afflicted respond to them. Many literary accounts of epilepsy can be recommended as reading for epileptologists, not only because they reflect societal attitudes and images, but also because they cast a different light on the seizure experience – both of the afflicted and of others who get involved. Especially the literary writings of authors who have had seizures themselves or have been close witnesses of seizures will not fail to fascinate the expert reader. □

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