

Case Report

The Paintings Reveal the Story: Case Study of a Well-Known Swedish Artist Suffering from Alzheimer's Disease

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Abstract.

Background: Creativity is a multifaceted, complex, activity, and as such is an overarching function of the brain rather than being confined to a specific structure or region.

Alzheimer's disease effects several cognitive domains involved in the creative process of producing art.

Objective: We analyze the art of a well-known Swedish visual artist who suffered from Alzheimer's disease to determine if, and in what way, his art and creative process might have been influenced by the disease.

Methods: We compared his artistic process and artwork along with information from his spouse, medical records, and cognitive tests as well as reviews of exhibitions written by art critics.

Results: We show that not only did the artist continue to produce artwork well into a major decline in cognitive function, according to commonly used tests, but he could continue to do so for even longer with some assistance from his spouse. However, the artwork changed considerably as the disease progressed. We hypothesize that there is a substantial lack of representation of creative ability and function in cognitive tests.

Conclusions: Signs of the Alzheimer's disease can be seen in the early artwork if viewed by critics and those with more specialized knowledge into the artist's production. Further analysis of the complex interaction between complex neural activities, such as artistic creativity, and cognitive diseases is warranted and might provide insight in the field of neurological degenerative disease.

Keywords: Alzheimer's disease, art, creativity, cognitive dysfunction, esthetics

INTRODUCTION

This case study examines what happened to a well-known, critically acclaimed, and artistically educated Swedish painter and sculptor, Peter Tillberg, creatively, medically, and socially, before and after he was diagnosed with early onset Alzheimer's disease (AD).

Dementia is a category of chronic neurodegenerative disorders that interfere with cognitive functions, such as memory, orientation, and speech, and lead to a gradual loss of the ability of the patient to function independently [1]. While people with this group of disorders all show cognitive symptoms, the cause of the degeneration of the neurons can differ in mechanism depending on the disease or even location of the degeneration within the brain [1]. The most common cognitive disorder is AD [2]. AD was first described in 1906 by Alois Alzheimer [3] by characterizing the typical clinical symptoms and neuropathological

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findings, the plaques and tangles. To diagnose AD, we currently rely on medical history, behavioral observations, exclusions of other conditions with similar symptoms, blood tests, cerebrospinal fluid analysis, brain imaging, and batteries of cognitive tests [1, 4]. Some of the most common symptoms of AD are short-term memory loss, problems with language, disorientation, mood swings, loss of motivation, and loss of independent function [1].

Research into the neurological basis for creativity suggests that the foundation for creativity is the same regardless of how the individual is creative, meaning that it ties together both the scientific and the artistic [5]. However, the study of creativity and the creative process of creating and experiencing art [6–9], and how this process interacts with neurodegenerative disorders [9], is still in its infancy. Creativity itself is commonly defined as “the introduction of something innovatively new and positive for society that goes beyond the familiar and accepted” [8]. Creativity is a multifaceted, complex, activity [6, 10, 11], and as such is an overarching function of the brain [6, 12] rather than being confined to a specific structure or region. There also appears to be a connection between creativity and artistic ability and output [13]. Artistic ability refers to the capacity of producing different varieties of art who contributes to communication between creator of the art and the viewer, beyond language [7]. Artistic ability and function are themselves spread over many brain regions that interact with each other, requiring perceptive function, motor skill, and higher cognitive functions associated with the frontal lobe [6, 7].

If both creative and artistic ability are diffusely spread functions within the brain, it begs the question of how they are affected by normal aging, by localized illness, and by degenerative illness. As different regions of the brain are caught in the wake of degenerative loss, how does this influence the artistry of the artist, such as expression, use of color, choice of motifs, and other aspects of creativity? Is it possible to ascertain expressions of neurocognitive illness within the art before such an illness is diagnosed in the artist?

Research proposes that there are alterations of the artistic ability and output based on the natural aging process [14], but the exact effects of aging on artistic ability remain controversial, with evidence supporting differing theories. Rankin et al. [15] and Mazzucchi et al. [16] reviewed research that has shown the impact of lesions and degeneration of specific brain regions on various artistic

output and qualities, showing examples of remarkable changes in motifs, spatial ability, and color choice to name a few. Yet it has also been shown that many artists continue to produce art after progressive neurodegenerative disease, even after brain damage, as reviewed by Zaidel [7]. There are examples of the emergence of artistic capabilities caused by or influenced by progression of a neurodegenerative disorder, most often found in patients with frontotemporal lobar degeneration [17], leading to a short-term, but often proliferative period of major artistic output. Some patients with previous artistic abilities who have been diagnosed with neurodegenerative disease have had their artistic abilities analyzed as the illness progressed [18], while some prominent artists have had their art retrospectively assessed posthumously for signs of suspected or confirmed illness, such as Goya [19], de Kooning [20–23], and van Gogh [24]; however, few have been diagnosed using current diagnostic tools and assessments. Some [25] have postulated that researchers attempting to find answers about artists creating art and viewers experiencing art often isolate the artist, the artwork, and the viewer from their context, whereby we lose a social and cultural aspect of the analysis.

Here we examine the life and art of Peter Tillberg. Concerning ethical issues, because Peter is a well-known Swedish visual artist, we have obtained permission from his wife, Kerstin Schild-Tillberg, to write this article about him, after his death, even though we are unable to anonymize it. Kerstin believes that if the pain and discomfort Peter and his family endured because of the early onset AD he suffered from can be of some use, it would at least bring something positive out of the experience they had. We examined as many of the available aspects and variables we could from Peter’s life, from early in his career up until his death. Research material included his artwork and notes, caregiver interviews, medical journals, art reviews from exhibitions, and catalogs. All in search of possible interactions between his illness and his creativity and artistic production.

METHODS

Through connections in the art world, we were made aware of Peter Tillberg, henceforth referred to as “the artist.” Because he was, at this time, in the late stages of AD, contact was established with his wife, Kerstin Schild-Tillberg, henceforth referred to as “his wife,” who is also a prominent Swedish artist. With

her permission, AHL was able to travel to their home in France, to meet them both and to see the artist's atelier.

On site, AHL gathered information through a series of audio-recorded interviews, and documented, by photography, the artworks kept there, mostly from the most recent period of his output (ca. 2000–2014). By interviewing his wife, AHL gathered her view and experience of the artist's life and how his illness had progressed, both as his partner and as his caregiver, giving much insight into their life, the disease progression, and their coping with the situation. His wife also recovered some notes, from which a quote is mentioned later, written by the artist himself shortly after he was diagnosed with AD.

With permission from his wife, AHL was also able to visit the artist at the caregiving facility where he was staying. When we met, his illness had already progressed to such a state that he was unable to speak coherently. We are uncertain whether he understood who we were or why we were visiting him, even though we did our best to explain. As one might expect, we were unable to gather his thoughts and experiences relating to his illness and how it had affected him and his creativity. To ascertain a glimpse of this aspect, we instead reviewed art catalogs where he had written about his creative process and sourced statements he had made when interviewed for news articles and story pieces, from which some quotes are mentioned later.

With permission from his wife, the help of the Swedish Consulate in France, and the Memory Clinic in Tarascon, we were able to acquire copies of the artist's medical records from his visits to the Memory Clinic, the testing done there, and the treatment he had received. Through his wife, we were also able to gather medical records from his general practitioner, which provided additional information about his health status before his diagnosis of early onset AD.

With the help of electronic tools provided by the University Library at Lund University, we were able to gather articles written about the artist throughout his career in the Swedish mass media, mostly reviews of exhibitions written by art critics, both online and in paper format.

Furthermore, we were given access to raw footage of an interview recorded for Swedish Public Access television in 1999, where Peter described his own creativity at the time. This is interesting regarding our current knowledge about the progression of the illness, as he was likely already suffering from AD, or

at least had the first signs of the disease manifesting within his brain, at the time of the interview.

RESULTS

Disease progression

From interviews with his wife, we learn that the artist's first experienced symptom was trouble telling the time, in June 2007, followed by trouble finding words, anomia, and expressing himself in Swedish. He often repeated himself and was perceived to be distracted in conversations. He had had trouble learning French ever since they first started visiting France, long before they moved there, but his grasp of the language had now declined even further. His difficulties with words continued for some time, but apart from the artist himself and his wife, others around him either downplayed it or did not notice the change.

The wake-up call for his wife was when the artist, while traveling for an exhibition in Sweden, suddenly had trouble finding his way around, as if his sense of direction and memory of the parts of Sweden that he used to frequent often were now gone. After this they decided to visit his general practitioner for an assessment and check-up.

Up until 2007 he had been mostly in good health, only needing medication for hypertension and hyperlipidemia. He had experienced depressive episodes earlier in his life and had a family history of depression on his mother's side. When he went to his general practitioner, they first concluded the possibility that he had relapsed in his depression, reasoning that he had experienced a lot of stress lately due to the exhibition. He was given an antidepressant, venlafaxine, and a follow-up was scheduled. However, there was also a suspicion that something else could be causing his symptoms. Therefore, he was also sent to the memory clinic at Hôpitaux des Portes de Camargue, in Tarascon, for a complementary examination and consultation, which would take place in early 2008.

From the medical records at the Memory Clinic, we learn that preliminary psychological tests showed a significant dysfunction in many domains, including loss of attention (loss of concentration and focus), language (loss of vocabulary), memory (temporal disorientation and memory dysfunction), execution (difficulty with initiation and numbers), while visuospatial and social cognition was not commented upon. His Mini-Mental State Examination (MMSE) score was 17/30 (see Table 1 for further details on test scores). Considering his age, 62 years, these test

Table 1
Mini-Mental State Examination scores for the artist over time

MMSE	2008 (early)	2008 (late)	2009	2010	2011	2012	2013
Year							
Orientation	6	5	6			3	0
Registration	3	3	3			0	0
Attention and Calculation	1	1	1			0	0
Recall	2	2	2			0	0
Language	4	4	6			4	3
Praxis	1	1	1			1	0
Total Score	17/30	16/30	18/30	–	–	7/29	3/30

results were worrying; however, it was reasoned that at least some of the dysfunction might be due to the tests being administered in French, and possibly worsened due to a possible depressive episode not yet adequately treated. They decided to run some additional tests and imaging and give the antidepressant medication more time to act before reevaluating him.

Renewed clinical assessment later the same year showed improvement of depressive symptoms, and the artist had been able to reduce his level of stress significantly. Magnetic resonance imaging (MRI) of the brain was normal. All blood sample test results were normal. Further neuropsychological testing was ordered. There was only a slight improvement in memory function, whereas anamnestic episodic memories had started to deteriorate further. Language function remained unchanged, acalculia had developed and global function was severely impaired with loss of independence. MMSE tests now showed a score of 16/30. The physicians concluded that the artist was at high risk of having a major cognitive disorder. He was diagnosed with Major Neurocognitive Disorder Due to Alzheimer's Disease, early onset, at the age of 62 years. Treatment with donepezil began.

At follow-up in the beginning of 2009, medical records described that the donepezil treatment was tolerated well apart from vivid nightmares. Target dosage with the treatment was reached. Renewed MMSE score was 18/30.

There was an exhibition in Sweden planned shortly after the follow-up at the end of 2009. The stress this induced worsened many of the symptoms. The memory disruption was more prevalent than before, as was his inability to find words in conversations. Treatment was continued unchanged.

Early in 2010, it was noted that everything was relatively stable. The exhibition was concluded and so his stress levels were reduced. There was a slight worry about increased appetite and weight gain. Later the same year he was unable to finish a MMSE, he

had total loss of orientation, and an inability to learn and recall three words on the test. After discussion with his wife, memantine was added to his treatment. Antidepressant treatment with venlafaxine was reduced.

Memantine was tolerated well and quickly increased to the target dosage. He felt reinvigorated after a visit to Sweden. Sleep and weight were stable. Memory function and autonomy issues remained unchanged. No behavioral issues were seen.

The following year, 2011, the patient was still in a good mood. There were no changes to sleep or appetite. Treatment was kept unchanged. The MMSE could not be completed; the artist managed 1 point on orientation after much effort before testing was concluded. His wife was taking increasingly more responsibility for activities of everyday life and required support to be able to care for the artist.

Not until follow-up in 2012 could he complete another MMSE. He managed to score 7/29 points, even though his language difficulties were now approaching levels of aphasia. His treatment remained unchanged. Appetite and sleep remained as before. By now his wife had received some aid to relieve the burden on her.

The following year, 2013, he showed continued memory dysfunction and language difficulties. No aggressive tendencies were seen, but an almost complete apathy had set in. Without input from his wife he was unable to do anything, but with her initiation he was still able to create artwork. Still there was no change to his appetite or sleep pattern. Mood was generally good even if tendencies of anxiety were starting to appear. He scored 3/30 on a MMSE. No changes were made regarding treatment.

By the end of 2013 and the beginning of 2014 there was a further general decrease in function and his apathy worsened. He now attended a special daycare for people with cognitive disorder a couple of days a week. Cyamemazine was added to his treatment

regime due to the trouble he had sleeping and the presence of hallucinations at night. He tolerated the treatment well; his sleep improved, and hallucinations abated, while his weight increased. He became calmer and less restless during the day.

At the end of 2014 his aphasia and memory dysfunction continued, while he also showed signs of increasingly fluctuating practical dysfunction. He was included in a special daycare with artistic creative profile, which suited him well.

In early 2015 there was a sudden and sharp shift in cognitive function and behavior. There was a complete loss of French language skills and a marked decrease in what little Swedish remained. He began to wander aimlessly and lost his circadian rhythm. His records comment on whether this behavior could be due to increased anxiety. It was difficult for his wife to care for him at their home, which opened a discussion to move the artist to special accommodation. Treatment was adjusted with the addition of mianserin and oxazepam to reduce aggressive behavior and restlessness so that both the artist and his wife could sleep at night. This was the final note in the records from the memory clinic. Subsequently, the artist was moved to the special accommodation where he would spend the remainder of his life.

Early in 2016 the artist died, aged 69 years, 8 years after being diagnosed with early onset AD.

Artistic career

The artist wrote [26] that he discovered that he wanted to become an artist at the age of 16 years. He explained that he had signed on to work on a ship and lived onboard for a summer, an environment he recounted as rough, where everyone was on top of each other. To survive in this peculiar situation, he started to lock himself in his cabin and make drawings of anything and everything he saw. “After this experience I was certain I wanted to become a painter, [the] image was a way for me to survive”, he wrote.

The artist started his artistic career in 1963–1969 by attending “Grundskola för konstnärlig utbildning” (GRUNDIS), a preparatory art school, followed by attending the Royal Academy of Fine Arts in Stockholm. Not to be hampered by his red–green color blindness, he simply avoided the hues of color he could confuse.

In the beginning of the 1970s the artist went to London, England, in search of his artistic identity. While at his accommodation, he again started to paint his surroundings—such as the space heater and the

walls in the room—all done in a photorealistic style. These pieces would become critically acclaimed and the true starting point of his artistic career.

Around 1971–1972, the artist painted “Blir du lönsam, lille vän?” [“Will you be profitable, little friend?”], a photorealistic painting of a typical Swedish classroom at the time. Children at their respective desks looking out from the painting as if the observer is the teacher. This painting would become his, and one of Sweden’s, most well-known (Fig. 1). He continued to paint many other pieces in similar fashion and with similar motifs.

A few years later, around 1974, the artist dramatically shifted his style of painting. His wife explained that he was breaking free from his previous photorealistic style and had begun to explore painting as a process rather than as a means to an end. He felt that his previous work was interpreted in ways he did not intend and with messages he did not want to deliver, changing his role from “Peter Tillberg, the artist” to “Peter Tillberg, the photorealist”. To rid himself from this preconception, he devoted himself to create without a purpose other than to create. The painting “Födelsen” [“The Birth”] was created (Fig. 2). His wife fondly remembers that his gallerist was shocked with his sudden shift in color in his paintings, the new rough charcoal sketches, and the change of subject matter in his images. Leaving photorealistic interpretations of society behind, he ventured into the realm of stones, twisted faces, and creatures from imagination and, perhaps also, the stuff of nightmares.

In 1976, the artist explored a subject matter he would return to prominently in his career. He created a creature with many names, sometimes referred to as “Snabelgubbe” [“Trunk man”] (Fig. 3) and on other occasions “den Onämnbare” [“The Unmentionable”].

This creature would be portrayed in many media and sizes. His wife explained that the meaning of the creature varied depending on when the artist made them. He would often tell short stories about them, for example, that they were either listening closely with their ear to the ground or screaming into the ground through a trunk or elongated snout—as if they were either unheard or unable to hear. The artist explained his recent foray into different subject matters and methods in a quote, written in January 1980, about his touring exhibition “Stenens Hjärta - Bilder av Peter Tillberg” [27]:

For me it is an attempt to find, not primarily a new form, but rather a new content in the images, to



Fig. 1. Title of the painting “Blir du lönsam, lille vän?” [Eng: Will you be profitable, little friend?] Artist Peter Tillberg 1972. Oil on canvas. Copyright Kerstin Schild-Tillberg. Image courtesy of Moderna Museet, Stockholm.

unleash the unconscious and allow me to be. To connect to the unplanned and irrational. A kind of examination into what happens, when you, during an extended amount of time, work with images you never planned to do. The seeming meaningless and aimless work.

Do we know when we make a choice of our own and when we are influenced by the will of others? Is it simply chance and coincidence that controls me, or is it the other way around? Can the subconscious images be a document over the time we live in? Do you, in the end, cope with seeing your own inner face? (authors translation)

Notably, the artist appeared to suggest that the images he made could be a document of the time we live in. Asking himself if he was prepared to encounter what was inside of himself, “the inner face” as he put it. Viewed with hindsight, it almost appears as if he is asking if he is prepared to encounter what is to come.

During the early 1990s the artist relocated, with his family, to Mas-Blanc-Des-Alpilles in Provence, France. Soon thereafter he set up the studio, which would be his prominent working space and environment for most of his life. His painting was influenced by the rich nature that surrounded them; motifs often contained the mountains viewable from their house.

In an interview for Swedish public television, in 1999, the artist explained his process for working with driftwood. He walked along the beaches in France and picked up his raw material himself. His atelier became a room filled with piles of driftwood where he would contemplate and reflect upon things. As he watched the organic shapes in the wood, he sometimes put pieces together with a drill and screws, which would turn them into complex statues of human- and creature-like shapes.

In 1996–2008, the artist, along with his wife, held sketching courses in the local area. He sketched mostly with brushes he had constructed himself from materials such as straws of grass, and pieces of rubber bands or string. He produced hundreds of sketches of human bodies, many of them saved in drawers in his atelier. The expression of the sketches changed depending on the construction of the brush used and the colors chosen. Most of them were very evocative and expressionistic, vivid in both shape and color (see example in Fig. 4). Rather than forcing a subject they would suggest a form, which the eye of the beholder could find and make sense of.

Shortly after the artist received his diagnosis of early onset AD, around November 2008, he wrote a few thoughts in small notes, which his wife would later find, reading such as follows:

I write this because I'm wondering what will happen with my strange way of perceiving an



Fig. 2. Title of the painting “Födelsen” [Eng: The Birth]. Artist Peter Tillberg 1974. Oil on canvas. Copyright Kerstin Schild-Tillberg.

existence I know nothing about. Ok, which I cannot control. The forgetfulness, memories which are thrown out in my memory. Maybe I can find a road to walk upon with the help of something that is possible. Time will have to tell which possible future I can achieve.

It's hard to not understand things that once were obvious. It is as if one was in another time, a time that I know what it was but it is now gone. I cannot reach this time even if I sometimes feel like I'm getting better. There are many ways in which you

are left out that you cannot even understand. If I could even though there is a possibility I do not know what will come. (authors translation)

His notes were garbled. Some errors corrected by himself, some left in. His spelling was varied and the grammatical structure periodically very difficult to follow. Some of these quirks are left out of the translation on purpose, to convey the actual meaning better. However, it is clear how troubled the artist was by his situation and how aware he was that something was happening to him, but he was unable to describe it



Fig. 3. Title of the painting “Den Onämnbare” [Eng: The Unmentionable]. Artist Peter Tillberg, 1976. Lithography. Copyright Kerstin Schild-Tillberg.

in detail with words. We are left with a diffuse feeling and a connection to that which once was clear, but now is forgotten.

After the artist was diagnosed with early onset AD, he was still able to continue with his artistic output. However, around 2010–2011, he started to complain that his oil colors were going bad. His wife purchased new oils and pigments for him. When the issue continued even with fresh materials, his wife noticed that the artist was unable to mix his own paints as he once could. “He had lost the recipe,” as his wife put it. She

alleviated this issue by purchasing premixed paints, which helped somewhat for a short time. Yet he still had trouble finishing paintings, as if he were unable to recognize whether they were finished or not. He altered and retouched old paintings he had in his atelier, sometimes completely ruining them with layer upon layer of new paint. His wife described it as if he were unable to stop once he had started doing something, most likely a description of perseverations caused by his illness. He would endlessly drive screws into long since finished driftwood sculptures,



Fig. 4. Title of the painting *Untitled*. Artist Peter Tillberg, 2008. Mixed color on paper. Copyright Kerstin Schild-Tillberg.

to the point where they would end up being more metal than wood, often falling into pieces as a result. In the end, his wife had to hide some of the more prominent art pieces to save them from this fate.

It was around this time the artist made his last oil paintings. Some of them were still in huge formats, spanning many square meters, while his final painting was smaller, giving him a better overview and capability to see its entirety. It is difficult to tell, in retrospect, whether he was unable to gain a perspective on the bigger pieces due to dysfunction in memory or frontal cognitive functions, or if there was some other practical issue that had arisen. His wife described it as if he were lost in parts of the image, unable to handle what he was seeing at the moment in relation to

the rest of the image. With a smaller canvas, he could remain stationary while painting, which seemed to make it easier for him, because everything could be within reach at all times. Most of his paintings still depicted the mountains (the Alps) and the surroundings in which they lived, which could be difficult to notice at first for the untrained eye, but easily pointed out by his wife. Some contained creatures present in his earlier work. Photorealistic elements and pieces crept into some of the artwork, such as an eye or an ear in a sea of colors and vague organic shapes (Fig. 5).

Following this, around 2012–2014, the artist's creative output and process was hindered by his inability to initiate the activity. He was more withdrawn and passive, and without intervention from his wife it was



Fig. 5. Title of the painting *Untitled*. Artist Peter Tillberg, ca 2010. Oil on canvas. Copyright Kerstin Schild-Tillberg.

probable that his artistic output would have stopped at this point. Even the premixed oil colors were too difficult for him to handle. Even if placed on the palette before him and the canvas was stretched for him, he could not paint. He became disinterested in the atelier.

His wife, noticing increased anxiety and restlessness in the artist, decided to try something: she replaced the oil paints with oil pastels and the canvas with paper. Suddenly the artist was able to create once again. During this period, he produced a large number of oil pastel drawings. Some he considered finished, while others were left unfinished, to be touched up later—which seldom happened. Many of the motifs,

as the wife described them, are diffuse and confusing; some have traces of creatures from previous pieces in them, while others use mostly floating and flowing colors (Fig. 6). Many showed signs of being less worked upon in the lower right quadrant of the image, as if he perceived this part of the paper differently.

As his illness progressed further, the artist finally lost the ability to create even when his wife prepared the materials. Toward the summer of 2015, the artist moved to a special accommodation for patients with major neurocognitive disorders. All creative output ceased, but he continued to draw with his fingers, in the air or on surfaces, and he gathered sticks and

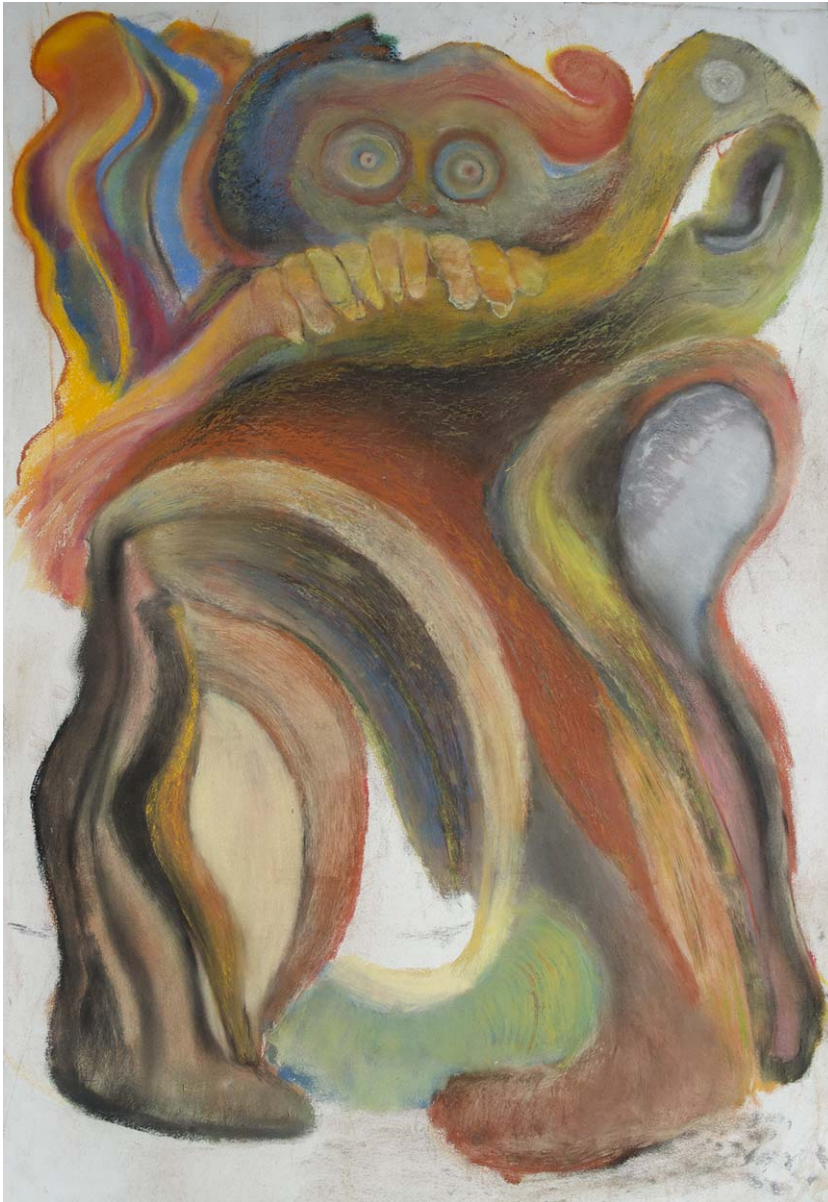


Fig. 6. Title of the painting *Untitled*. Artist Peter Tillberg, ca. 2012–2013. Oil pastels on paper. Copyright Kerstin Schild-Tillberg.

stones from the garden in his hands, much like he had done with driftwood earlier in his life. Yet the pieces he garnered were never turned into sculptures or creations. It is unclear whether this was an attempt to continue his artistic process or a representation of something else. What remained of his artistic vein were the posters of his own paintings that his wife had put up in his room, coincidentally the only things he tolerated enough to leave on the wall. Whatever else was present in the room was taken down, ripped, and turned into crumpled pieces. The room became

barren and simplified with time, a bed, the images of his previous art on the wall, and a window to a world he could no longer participate in, with partly drawn blinds.

Art critics

Interestingly, we found quotes from art critics in newspapers about exhibitions the artist had both in 1999 by Peder Alton (roughly 10 years before his diagnosis of AD), and in 2009 by Thomas Lissing

(about a year after he was diagnosed, however the reviewer was not aware of that), as well as a quote from an exhibition in 2010. Eerily, there were some descriptions by the critics that, when viewed in retrospect, leave one wondering if the artist had a sense of what was happening to him, long before he had shown signs that others would notice or that he could put down in words himself. It is also remarkable that, while not being overly open about his illness from the beginning, critics commenting around the time of diagnosis also noticed similar changes of expression in the art—things the critics themselves had trouble putting words to—much like the artist himself appears to have had. However, by their nature, reviews are mainly anecdotal, yet can still contribute to the overall illustration of an artist's production.

Peder Alton [28] wrote in a review, about the exhibition "L'Algerie" for *Dagens Nyheter*:

[...] in Peter Tillberg's new paintings we see a return of threatening concepts and 'the Unmentionable'. But this time he is not as bound to a specific theme. To speak of a greater freedom is perhaps hyperbole, but the paintings are not as bound to themselves, not as soulfully overloaded. Primarily they have an ease that surprises. Are the worry and the severity on their way out of Tillberg's paintings? To be more exact: the colors tend to sink to a deep purple hue and expose a fracture in existence, an opening resembling slashed throats, or some kind of thin membrane surrounded by small, trembling and tentative layers; a painting of a flame also resembles a swelling bud or an anemone.

Is everything mixed in the same bowl to see what appears at the surface? There is a documentary-like Algerian experience in the first thin "throat" images he now shows, a suggestion of knives and torn thin muscles, but also a classic Mediterranean theme but not Greek white and towering, rather an enigmatic metaphor for water and the deep, over something black and fantastic. But Tillberg is unable to make it work, it diverges in far too many directions at once and the threatening is now vague and general. (authors translation)

A complex interaction of feelings had been replaced with something more diffuse and unruly, as if he was unable to specify what he was feeling even in his art. "[...] That which once was threatening is now vague and general" is perhaps a perfect descrip-

tion of the feeling that something is missing, but not being unable to tell what it is and how it came to be—a diffuse presence in your mind, an illness with diffuse symptoms, perhaps such as those present in AD.

Almost exactly 10 years later, in a review posted in *Smålandsposten*, Thomas Lissing [29] wrote about the exhibition "The Way Out":

[...] just as with the exhibition in Hishult it is the humor that dominates in "The Way Out." The cunning, the artful, that which makes you wonder and provides warmth. Thus is my image of Peter Tillberg. Therefore I am also a little disappointed that these other images, pastels and paintings, are so flat. They are made in the same color scheme, lots of green, with soft shapes and evoke some kind of ties to nature that make me think about Karl-Axel Persson. But there is nothing more. Beautiful, perhaps, but without the depth I had come to expect, without humor, without surprises. The images feel more like universal fairytale illustrations, like harmonic descriptions of feelings. Sadly, they evoke nothing in me. (authors translation)

Clearly something has happened with his art, but is it only the disease hampering his creative process or is it also the artist, trying to reach out and describe something he is now experiencing that is so fundamentally different from what he experienced before?

A comment about the exhibition "Utanför fallor och fallor" published 2010 in *Corren* [30] adds to this suggestion:

I can have objections towards repetitive motifs, you acknowledge the intent and become muffled [...]. But why would the artist emphasize this just to mythologize his message?

[...] but the strongest impression was given by the pastel painting "Huldran", which also says something about the portraying artists own duality and feeling of impotence towards the ambitious demands of perfection. (authors translation)

Could this illustrate an expression of inability to reach towards previous levels of creativity and artistic vision, possibly caused by the artists own insight in his ability? Are the non-varied motifs a representation of the fact that the artist, due to his illness, now only has one left? Is the artist's art flat, repetitive, and without substance because he is unable to pro-

duce something that provokes more feelings, deeper feelings, because of his illness? Or is the art flat, repetitive, and without substance because that is what he himself is feeling, due to his illness? As the artist put it, his art, which he creates mostly by allowing it to be a wild process without meticulous control, is a representation of what happens within the artist himself at the time he is living in. Is his art now representing the inner self he is struggling with—a person who cannot recognize themselves, a person suffering from AD?

Timeline of key clinical events, different key artworks and art critics is provided in the Supplementary Material.

DISCUSSION

We examined how a neurocognitive illness influences the artistry of the artist and if you can ascertain expressions of neurocognitive illness within the art before such an illness is diagnosed.

We found that the disease that took hold of the artist, and caused his early death, showed signs of itself well before even the artist himself suspected it. His art had become different, evoking different feelings and sensations compared with before, described at first as diffuse and vague, and as the illness progressed as flat and repetitive or monotonous. We used art critics as an independent observer of the output of the artist to try to capture these traces of change. It could be that these feelings and experiences that were described by critics as hard to put into words, possibly represented the same feeling the artist had when trying to describe, years later, what he was experiencing, in his own garbled notes. The artist instead had to rely on his one form of expression, his art, which, consciously or unconsciously, told others what he was living through, without the use of words. Imprinting that same feeling onto the viewer, a feeling of diffuse pondering of what was going on and the inability to describe what that was. Since he chose early on to create without an ambition of portraying a certain feeling or subject within his art, his art pieces were unfiltered – meaning that the viewer would also get an unfiltered experience of the artist. For example, when a piece of his art gives rise to confusion in the viewer, that most likely meant the artist was experiencing confusion while painting.

There is admittedly an important discussion to have regarding artistic changes over time. What can be

attributed to a natural development in the artistic process; social and contextual influences, or processes that occur due to aging? What effect has a direct influence on the cognitive functions necessary for artistic output caused by neurodegenerative disease? Is it possible to ascertain or evaluate an artistic expression and the content within it from these parameters at all? And if it is possible, who is best suited to examine and describe it? We suggest that there is a need for a multidisciplinary approach to these subjects and cases, lest we risk under- or overvaluing aspects in our analysis.

Further, this case shows that our clinical assessments, while valuable in assessing disease progression and to some degree disease stage, can miss factors and facets of the patient's life. The artist, even with low scores and values on clinical tests such as the MMSE (even as low as single-digit scores), was able to create artistically, initially by own devices and later with relatively minor facilitation from his wife, for many years. This alone is remarkable and provides valuable insight — that with only some adjustments and alterations, activity and function can be upheld further into the disease progression than many clinicians would assume if focusing on results on clinical tests alone. This does not necessarily mean that our clinical tests are unreliable for patients with artistic ability, rather that they highlight that our tests do not evaluate artistic functions as well as other functions. One should therefore be careful attributing levels of functions to specific scores on basics tests, such as MMSE. It would be interesting to investigate how artistic ability is influenced by various neurological and neurocognitive illnesses and if there are any overlapping strategies to assess them and aid the patients in continuing their creative output as far as possible into their disease progression.

A potential drawback with case studies such as this one is how we relate to the information they present. Most of the data gathered here are subjective interpretations, from the artist himself, his wife, the medical professionals, and the researchers. However, compared with many other case studies in this field, we were able to include art critic reviews, which we believe are more suitable sources of input regarding the quality of the artistic output. Many of the critics had viewed many of the artist's exhibitions, and in their work had relevant knowledge about the artist and his context at the time of the exhibition. This was information that would be difficult to compile in retrospect as a researcher, had their reviews not been available.

Regrettably, as is the situation with most case studies, most of the information was gathered retrospectively. There was no possibility to follow the process over time because we had no knowledge of the artist's diagnosis until his illness had progressed to such a point where he no longer could be interviewed. We therefore lack crucial parts of the artist's own perspective, apart from sporadic notes or statements taken from previous interviews or exhibition catalogs. The information gathered from his wife is obviously her perspective and understandably influenced by their relationship. There is also often a marked difference in talking about how things were compared with how they are, as details can be eroded, distorted, or mixed in retrospect.

In reviewing articles and literary pieces written about the artist, we used an archive function for the Swedish press. Sadly, many articles written in the period 2000–2010 are no longer available due to restructures in newspaper websites, meaning that many links are now broken. Luckily, most of the bigger Swedish newspapers have robust electronic archives where their articles are still reachable and readable. Earlier publications are available due to digitized archives of printed newspapers. However, other sources, such as exhibition catalogs or texts in magazines are not as easily accessible and it is possible that some potential sources were missed. We have also referred to an interview from Swedish Television amongst our sources and this source was referred to us via a circle of contacts surrounding the artist. It is possible that there are more interviews with the artist that have been broadcasted on television of which we are unaware; however, searches for such material have thus far been unfruitful.

The practical implication of the knowledge we have gained from this case study is insight into the relation between neurodegenerative cognitive disease and artistic creativity. It shows that our current cognitive tests yield little insight into whether a person can continue to produce art or not. It also yields very little knowledge into what hurdles the patient is suffering from that could possibly hinder such activity, but that could also easily be overcome by little effort from caregivers. It shows that we must be willing to analyze our patients' lives further. Only then can we get a more complete picture of the patient instead of the symptoms we can observe or be told about during a physician's consultation. We should learn that even when the artist's brain has lost its words it can still paint what it experiences.

CREDIT AUTHOR STATEMENT

Axel Holmbom Larsen (Data curation; Formal analysis; Investigation; Project administration; Software; Visualization; Writing – original draft; Writing – review & editing); Elisabet Londos (Funding acquisition; Methodology; Project administration; Supervision; Writing – review & editing).

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CONFLICT OF INTEREST

The authors have no conflict of interest to report.

DATA AVAILABILITY

Data sharing is not applicable to this article as no datasets were generated or analyzed during this study.

SUPPLEMENTARY MATERIAL

The supplementary material is available in the electronic version of this article: <https://dx.doi.org/10.3233/ADR-230134>.

REFERENCES

- [1] Arvanitakis Z, Shah RC, Bennett DA (2019) Diagnosis and management of dementia: Review. *JAMA* **322**, 1589-1599.

- [2] Brunnström H, Gustafson L, Passant U, Englund E (2009). Prevalence of dementia subtypes: A 30-year retrospective survey of neuropathological reports. *Arch Gerontol Geriatr* **49**, 146-149.
- [3] Alzheimer A (1907) Über eine eigenartige Erkrankung der Hirnrinde. *Allg Z Psychiatr PS* **64**, 146-148.
- [4] Galvin JE, Sadowsky CH (2012) Practical guidelines for the recognition and diagnosis of dementia. *J Am Board Fam Med* **25**, 367-382.
- [5] Andreasen NC, Ramchandran K (2012) Creativity in art and science: Are there two cultures? *Dialogues Clin Neurosci* **14**, 49-54.
- [6] Nadal M (2013) The experience of art: Insights from neuroimaging. *Prog Brain Res* **204**, 135-158.
- [7] Zaidel DW (2010) Art and brain: Insights from neuropsychology, biology and evolution. *J Anat* **216**, 177-183.
- [8] Zaidel DW (2013) Art and brain: The relationship of biology and evolution to art. *Prog Brain Res* **204**, 217-233.
- [9] Zaidel DW (2014) Creativity, brain, and art: Biological and neurological considerations. *Front Hum Neurosci* **8**, 389.
- [10] Bogousslavsky J (2005) Artistic creativity, style and brain disorders. *Eur Neurol* **54**, 103-111.
- [11] Heilman KM, Acosta LM (2013) Visual artistic creativity and the brain. *Prog Brain Res* **204**, 19-43.
- [12] Chakravarty A (2012) The neural circuitry of visual artistic production and appreciation: A proposition. *Ann Indian Acad Neurol* **15**, 71-75.
- [13] Miller ZA, Miller BL (2013) Artistic creativity and dementia. *Prog Brain Res* **204**, 99-112.
- [14] Mazzucchi A, Sinforiani E, Boller F (2013) Artistic creativity, artistic production, and aging. *Prog Brain Res* **204**, 45-69.
- [15] Rankin KP, Liu AA, Howard S, Slama H, Hou CE, Shuster K, Miller BL (2007) A case-controlled study of altered visual art production in Alzheimer's and FTLTD. *Cogn Behav Neurol* **20**, 48-61.
- [16] Mazzucchi A, Sinforiani E, Boller F (2013) Focal cerebral lesions and painting abilities. *Prog Brain Res* **204**, 71-98.
- [17] Miller BL, Cummings J, Mishkin F, Boone K, Prince F, Ponton M, Cotman C (1998) Emergence of artistic talent in frontotemporal dementia. *Neurology* **51**, 978-982.
- [18] Cummings JL, Zarit JM (1987) Probable Alzheimer's disease in an artist. *JAMA* **258**, 2731-2734.
- [19] Cawthorne T (1962) Goya's illness. *Proc R Soc Med* **55**, 213-217.
- [20] Espinel CH (1996) de Kooning's late colours and forms: Dementia, creativity, and the healing power of art. *Lancet* **347**, 1096-1098.
- [21] Espinel CH (2007) Memory and the creation of art: The syndrome, as in de Kooning, of 'creating in the midst of dementia'. *Front Neurol Neurosci* **22**, 150-168.
- [22] Gibson PH (1996) de Kooning's dementia. *Lancet* **347**, 1838.
- [23] Piechowski-Jozwiak B, Bogousslavsky J (2018) Dementia and change of style: Willem de Kooning - obliteration of disease patterns? In *Neurological Disorders in Famous Artists - Part 4*, Bogousslavsky J, Tatu L, eds. S. KARGER AG, Basel, pp. 164-176.
- [24] Arnold WN (2004) The illness of Vincent van Gogh. *J Hist Neurosci* **13**, 22-43.
- [25] Brinck I (2007) Situated cognition, dynamic systems, and art: On artistic creativity and aesthetic experience. *Janus Head* **9**, 407-431.
- [26] Tillberg P, Beck I (1984) *Om stenarna kunde berätta: Peter Tillbergs bildvärld*. Bildförlaget Öppna ögon, Stockholm.
- [27] Tillberg P (1980) Stenens hjärta Bilder av Peter Tillberg. In Riksställningar (Ed.). Riksställningar Swedish Exhibition Agency, Stockholm. (Promotional folder for an exhibition)
- [28] Alton P (1999) Konst: En lätthet som överraskar. I Peter Tillbergs utställning. *Dagens Nyheter*, **Nov 11**, 22.
- [29] Lissing T (2009) Bland skogsväsen, troll och huvudfotingar. *Smålandsposten*, **Nov 23**, 18.
- [30] Unattributed (2010) Utanför fällor och fällor. *Corren*, **April 27**.