

## NEUROSCIENCE AND ART: LIFE AND TIMES OF YANNOULIS CHALEPAS

### NEUROZNAKOST I UMJETNOST: ŽIVOT I VRIJEME YANNOULISA CHALEPASA

Konstantinos Tsamakias\*, Ioannis Karakis\*\*

#### SUMMARY

*The objective of this article is to highlight the bidirectional relationship between neuroscience and art in the life and times of the most preeminent sculptor in modern Greek history, Yannoulis Chalepas. Analysis of biographical sources and testimonies on the life and works of Yannoulis Chalepas was performed. Findings are discussed in relation to the neuropsychiatric maladies that he faced in his lifespan and their impact on his art. Yannoulis Chalepas' life and art are trichotomized in a charismatic, premorbid era (1851-1877), a prolonged, medieval, morbid period (1878-1917), and a transfigurative, post morbid era (1918-1938). The amalgamate of medical evidence suggests that Yannoulis Chalepas suffered from schizophrenia. That was reflected in his art through two distinct periods of artistic productivity and stylistic creativity. The bidirectional relationship between neuroscience and art in the history of humanity is also exemplified in the legacy of Yannoulis Chalepas. The borderland of artistic ingenuity with aberrant behavior, the misconceptions of neurocognitive disorders with psychosis along with their associated social stigma, the effect of artistic expression in the manifestation of psychiatric disease, as well as its healing and often transformative power are concepts that still tantalize equally scientists and artists around the globe.*

**Keywords:** art, Chalepas, neurology, neuroscience, psychiatry, schizophrenia

\* Second Department of Psychiatry, National and Kapodistrian University of Athens, 'Attikon' University Hospital, Athens, Greece; King's College London, Institute of Psychiatry, Psychology and Neuroscience, London, UK; Institute of Medical and Biomedical Education, St George's, University of London, London, UK.

\*\* Department of Neurology, Emory University School of Medicine, Atlanta, GA, USA.

Correspondence Address: Konstantinos Tsamakias, Second Department of Psychiatry, National and Kapodistrian University of Athens, 'Attikon' University Hospital, 1 Rimini, 12462, Athens, Greece. E-mail: [ktsamakias@gmail.com](mailto:ktsamakias@gmail.com).

## INTRODUCTION

An association between neuropsychiatric ailments and artistic temperament is one of the most pervasive and contentious cultural notions (Hankir, 2011). Although brain pathology is neither sufficient nor necessary for creativity, there is a potential link between mental and neurologic illness and creativity. Specifically, an underlying susceptibility to neuropsychiatric disease may enhance the personality domain of openness, which increases the likelihood of ideas that are original (Kaufman & Paul, 2014). Conversely, the impact of debilitating neuropsychiatric symptomatology, its treatment, or its inexorable stigma and misconceptions may have deleterious effects on artistic productivity. At the same time, creating can be therapeutic for those who already suffer from a mental illness (Ruddy & Milnes, 2005).

The literature is filled with treatises on famous composers (Constant, 2011), writers (Jamison, 1989), poets (Hankir & Zaman, 2015), singers (Yip et al., 2006), actors (Tohid, 2016), and film directors (Dieguez, Assal & Bogousslavsky, 2007) who were troubled by various psychiatric and/or neurological diseases, and how these affected their lives and works. Not surprisingly, the visual arts could not be an exception to that rule. From the Renaissance to our times, numerous painters and sculptors such as Leonardo Da Vinci (Öztürk, Altieri & Troisi, 2010), Michelangelo (Arshad & Fitzgerald, 2004), Francisco Goya (Felisati & Sperati, 2010), Caspar David Friedrich (Spitzer, Dahlenburg & Freyberger, 2006), Vincent Willem van Gogh (Bhattacharyya & Rai, 2014), Lovis Corinth (Bäzner & Hennerici, 2007), Edvard Munch (Viederman, 1994), Camille Claudel (Cooper, 2008), Paul-Élie Gernez (Boller, Sinforiani & Mazzucchi, n.d.), Giorgio de Chirico (Bogousslavsky, 2010), Joan Miró (Delgado & Bogousslavsky, 2018), Mark Rothko (Turco, 2002), Willem de Kooning (Marcus, Kaufman & Cohen-Shalev, 2009), Carolus Horn (Marcus et al., 2009), Andy Warhol (James, 2010), Yayoi Kusama (Blom, 2018), William Utermohlen (Marcus et al., 2009), and Carl Fredrik Reuterswärd (Colombo-Thuillard & Assal, 2007) are alleged to have suffered from a host of neuropsychiatric disorders.

In Greece, the most characteristic example of this association is the case of Yannoulis Chalepas (Stefanou & Ziemann, 2019), a profoundly influential sculptor often referred to as Pheidias or Praxiteles of modern times (Kairofyas, 1986; Filippotis, 2006). This manuscript attempts to i) systematically collate the medical evidence of the neuropsychiatric disorders that defined the works and days of the most preeminent sculptor in modern Greece and ii)

investigate through his tragic life tale the intertwined relationship of artistic creativity and neuroscience.

## METHODS

In order to achieve the aforementioned goals, we conducted a thorough analysis of available biographical sources, critiques, and testimonies in the Greek and English language on the life and works of Yannoulis Chalepas. In parallel, we performed a “travelogue” of his life’s journey picturing the places where he was born, where he created, where he struggled with the neuropsychiatric disease, and where he passed away. An illustrative representation of the salient landmarks of his life and works is provided. The collected material is discussed in relation to the neuropsychiatric maladies that he faced in his lifespan and their impact on his art. Finally, the accumulated evidence is placed in the broader context of other visual artists with similar challenges in an attempt to elucidate the bidirectional relationship between art and neuropathology.

## RESULTS

The life and works of Yannoulis Chalepas are trichotomized into the following periods: a premorbid era (1851-1877), a morbid era (1878-1917), and a postmorbid era (1918-1938).

### Premorbid era (1851-1877)

Chalepas was born in 1851 (according to some sources in 1854) (Kairofylas, 1986) in the village of Pyrgos, a marble craftsmanship hub on the island of Tinos in the Cyclades, Greece (Papadimitriou, 2004). He was the first of four children. His father, a marble craftsman himself, aspired Chalepas to become a merchant. Chalepas strongly opposed that prospect because of his love for art that became apparent since his adolescence. After completing his elementary school education, he was sent as an apprentice to a merchant on the neighboring island of Syros. Despite the disapproval of his parents and especially his mother, who considered it demeaning for him to follow the same humble profession as his forefathers (Panteleakos, 2020), he opted to dedicate most of his time to clay workshops instead. At this age, he was described as sensitive and agile but also idiosyncratic and impulsive. For example, when his belfry creation in his backyard was derided by his aunt, he irately demolished it (Papadimitriou, 2004). The family’s relocation to Athens in 1869 was

an opportunity for Chalepas to enroll in the Polytechnic School of Athens, where his talent became apparent. Chalepas started being acclaimed for his work and expeditiously graduated with distinction in 1872 (Filippotis, 2006). In 1873 he received a bursary to continue his training abroad. He moved to Germany, where he enrolled in the Munich Academy of Fine Arts (Filippotis, 2006).

There, his charisma continued to shine and he became increasingly known as a distinguished young sculptor winning awards in several contests. His works of this period, such as the 'Satyr playing with Eros', are influenced by Greek mythology. Unfortunately, the bursary was terminated unexpectedly, and Chalepas had to continue the third year of his studies in severe financial hardship. This was the first time that he was reported to spend sleepless nights resentful and depressed (Kairofylas, 1986). Thanks to his aptitude and perseverance, he managed to graduate from the Munich Academy in 3 years instead of the customary 7 years of study duration. In his graduation ceremony, Professor Max von Widmann foretold that Greece would greatly benefit from his talent (Kairofylas, 1986).

Upon his return to Greece in 1876, he was an already famous sculptor in Athenian circles. He set up his own studio and continued to work on themes from Greek antiquity. Around that time, he was welcomed to Tinos by a compatriot member of the parliament and enamored his niece.

#### Morbid era (1878-1917)

The first signs of Chalepas serious mental illness are discerned in the late 1877 - early 1878. During that period, he completed his magnum opus, the 'Reclining Female Figure' (Figure 1), a marble sculpture of a sleeping young woman sponsored by a prominent Athenian family in memory of their deceased relative.

When confronted with the initial objections of his sponsors during the clay modeling of this effigy, he furiously destroyed it and continued only after an apology to him was extended (Panteleakos, 2020; Bolis-Pavlopoulos, 2004). Subsequently, he worked tirelessly on several variations of his "Midea" that he also compulsively destroyed one after the other. He became introverted, ate and slept poorly, and appeared depressed (Kairofylas, 1986).

During this period, he reportedly dove into deep melancholy. This was possibly precipitated by the rejection of his wedding proposal to his Tinian love by her parents. Over the next few months, his mental health continued

to deteriorate, and he started exhibiting the first signs of psychotic illness. He became increasingly irritable, agitated and started to become paranoid. For example, he believed that the Satyr he had sculpted was laughing at him in a threatening manner. Chalepas began to laugh back at the Satyr, arguing with the figure as if the Satyr was a living creature, attempting to modify the smile of the figure. He threw stones at the Satyr in an attempt to destroy it, possibly in response to command hallucinations and delusions (Papadimitriou, 2004).



Figure 1. 'Reclining Female Figure', (1877), an example of the premodern era artistic style, First Cemetery of Athens (photograph by Dr. Tsamakidis, August 2020)

His first documented medical encounter at that time raised concerns about a mental health disorder and recommended a visit to his brother in Minor Asia as a healing measure (Kairofylas, 1986). However, his mental illness became evidently worse. There are accounts of talking to himself and laughing for no reason (Kairofylas, 1986). A few serious suicide attempts ensued. In one of them, he tried to jump out of his room window. In another one, he attempted to climb and jump off the roof but was halted by his uncle after a physical fight and, finally, he tried to swallow broken glass. Upon return to Tinos, he appeared indifferent to his mother's caress (Kairofylas, 1986). They tried to appease him by bringing him in contact with his love, but that led to an angry outburst instead. Although the doctors recommended admission to a psychiatric hospital, his mother strongly opposed this.

Another 'therapeutic' trip was attempted in 1879, this time to Italy. The only times he appeared to be completely lucid was when he visited museums and admired the artistic work of Michelangelo (Papadimitriou, 2004). Upon return to Athens at the end of that year, he was examined by one of the renowned neurologists of his time, who concluded that he suffered from an incurable, waxing and waning, mental disorder that would likely not limit his life expectancy (Kairofylas, 1986). Admission to a psychiatric asylum for stabilization was recommended, but his mother opted to take him back to his birthplace.

At the beginning of 1880, Chalepas moved back to Tinos under the strict supervision of his authoritarian mother. There he spent 10 years where his artistic work and creativity ceased completely. Even in the case he would create an initial clay model, he would either destroy it, or his mother would destroy it herself, as she believed that art was the source of his insanity. In Tinos, he suffered severe social exclusion, bullying, and stigma; his peers and compatriots would mock and even exploit him, dispatching him to run their own errands (Papadimitriou, 2004).

In 1888 his mental health deteriorated further, and at the age of 37, Chalepas had to be institutionalized in the psychiatric (lunatic) asylum of Corfu (Samouilides, 2008), where he stayed for 14 years. Unfortunately, little is known about this period, except for his given diagnosis of "dementia". His artistic activity was very limited during that time; the only surviving work from this period is a small statue resembling the sculptor, with the nose missing.

In 1902, Chalepas was discharged from the asylum. He initially went to Athens, where he had a chance to visit the Archeological Museum and the



ateliers of famous Tinian sculptors of his time, whose work he constructively critiqued with keen interest and admirable clarity of mind (Papadimitriou, 2004). Still fearing a recrudescence due to his engagement with art, his mother decided to take him back to Tinos. Testimonies of that era report that he remained thought disordered; for example, he continued to mumble words that could not be deciphered. However, he presented somewhat less agitated. He desperately tried to set up a new studio in the basement of his house, however his despotic mother continued to forbid any engagement with artistic creation discarding the primitive tools and clay that he managed to collect. It seems that this stern prohibition and overall maternal opposition triggered another recrudescence. During this period, Chalepas became very passive and avolitional, disheveled with diminished emotional expression. There are accounts of stereotypical behaviors where he would walk straight in a specific line and then turn around, stepping on the same spots on the street while mumbling to himself. He spent his time as a shepherd of the family's flock of sheep.

At the end of 1916, his mother died. Chalepas, 62 years old at that time, showed no major emotional response to her death. His affect is reported to have been flat and 'indifferent' (Papadimitriou, 2004). During her funeral preparations, he could not be found anywhere; eventually, his family located him in the house basement, where he was cleaning and accumulating clay. Beside his mother's deathbed, Chalepas turned to his sobbing nieces and nephews and stated: "please be quiet, and I will start producing art again" (Papadimitriou, 2004).

#### Postmorbidity era (1918-1938)

Getting back to work he adored started to have a positive impact on Chalepas' mental health. Although he continued to exhibit odd behavior and a predilection towards isolation, his intellect and artistic capacity improved markedly. He spent most of his time in his basement studio (Figure 2).

Between 1918 and 1930, he created 52 pieces of work, the majority of which can be considered as 'normal' pieces of art. Over the next few years, his recovery continued, whilst the bullying from the local community dissipated. He was visited by distinguished figures of the Athenian cultural scene, and his reputation was gradually re-established in the Athenian circles. By the late 1920s, his symptoms were reported to be in near-complete remission (Papadimitriou, 2004).



2. Inside view of Chalepas' house and studio in Pyrgos, Tinos (photograph by Dr. Karakis, July 2020).

As a result of his marked mental state improvement, Chalepas accepted the invitation from his niece to relocate to her home at the foot of Lycabettus in Athens.

Despite the fact that it had been nearly 60 years since his initial relocation to Athens, he maintained vivid memories of the city (Kairofyilas, 1986). That period is considered the most fruitful and productive of his life.

“Aphrodite”, “Artemis”, “Oedipus and Antigoni” are a few of his works of this era; yet, with a totally reformed artistic style. Chalepas himself claimed that his masterpiece “Resting Female Figure” surpassed the “Reclining Female Figure” of his youth. In 1927, the Academy of Athens bestowed upon him its prestigious award. He had formally re-gained his place in the Athenian artistic pantheon.

On the morning of the 23<sup>rd</sup> of April 1938, Chalepas became hemiplegic. The previous day, he was witnessed to exit his workshop to watch the Good Friday procession passing by his house, during which he “took his black cap off and devoutly made (with his right hand) the cross-sign”. On holly Saturday, “he could hardly utter a word, and the hand that gave life to clay with a couple of strokes until yesterday was immobile, dead” (Papadimitriou, 2004).



He remained debilitated until the morning of the 15<sup>th</sup> of September of the same year, when a second attack led to his demise (Filippotis, 2006).

## DISCUSSION

The available evidence provides a solid foundation of neuropsychiatric pathology as a cardinal feature in the life and works of Yannoulis Chalepas.

### The scientific basis of the medical diagnoses

Given that the medical evidence is restricted to biographical sources and testimonies (Table 1), it would be prudent to reconstruct Chalepas' illness, in terms of the most likely differential diagnoses, rather than a specific disorder.

Table 1. Milestones in Chalepas' mental illness

Chalepas' illness milestones	Symptoms	DSM-V Criteria for Schizophrenia
1876	<ul style="list-style-type: none"> <li>• Depression and despair whilst in living financial hardship in Germany</li> </ul>	
1877–1879	<ul style="list-style-type: none"> <li>• Beginning of psychosis</li> <li>• Aggressive behavior, irritability, destroying clay models</li> <li>• Serious suicidal attempts during a trip to Minor Asia</li> <li>• Incongruent laughter</li> </ul>	<ul style="list-style-type: none"> <li>• Delusions of reference</li> <li>• Paranoid &amp; persecutory delusions</li> <li>• Auditory hallucinations</li> <li>• Disorganized speech (Thought disordered)</li> <li>• Grossly disorganized behavior</li> <li>• Impairment of functioning at work</li> </ul>
1880	<ul style="list-style-type: none"> <li>• Doctors suggested detention in a psychiatric hospital, but his mother refused and took him back to Tinos</li> </ul>	
1880–1888	<ul style="list-style-type: none"> <li>• Isolation in his house in Tinos</li> <li>• Stigma and Bullying</li> <li>• Talking incoherently to himself</li> </ul>	<ul style="list-style-type: none"> <li>• Disorganized speech</li> <li>• Grossly disorganized behavior</li> <li>• Impairment in functioning at work and interpersonal relationships</li> </ul>
1888–1902	<ul style="list-style-type: none"> <li>• Detention in the Corfu psychiatric asylum, with the diagnosis of 'dementia'</li> </ul>	

1902–1917	<ul style="list-style-type: none"> <li>• Discharged from the asylum in 1902</li> <li>• Mother took him back to Tinos</li> <li>• Passive behavior</li> <li>• Lack of insight</li> <li>• Mother prohibiting any occupation with art</li> <li>• Stigma by compatriots</li> <li>• Mother’s death in 1916</li> <li>• Last relapse in 1917</li> </ul>	<ul style="list-style-type: none"> <li>• Disorganized speech</li> <li>• Negative symptoms (i.e., diminished emotional expression or avolition).</li> <li>• Impairment in functioning at work and interpersonal relationships</li> </ul>
1918–1938	<ul style="list-style-type: none"> <li>• Gradual recovery from 1918 onwards</li> <li>• Remarkable regain of functionality</li> <li>• Marked, nearly full remission of symptoms</li> <li>• Recognition of his work by the Academy of Athens in 1927</li> <li>• Return to Athens in 1930 until death</li> </ul>	

In that regard, the three most plausible diagnoses are schizophrenia, schizoaffective disorder, or major depressive disorder with psychotic features. The diagnosis of schizophrenia is supported by the constellation of positive and negative symptoms as defined by DSM-V criteria (Biedermann & Fleischhacker, 2016). Chalepas was clearly suffering from positive symptoms of psychosis, such as referential, paranoid and persecutory delusions, auditory hallucinations, stereotypic behaviors, thought disorder, and disorganized speech. At the same time, he spent a considerable amount of his life dealing with negative symptoms, such as difficulty in experiencing pleasure (anhedonia), blunted affect, poverty of thought and speech, avolition, withdrawal, loss of motivation, and inattention to social or cognitive input. It is important to also highlight the strong history of mental disease in his family; one of his sisters suffered and died from an unspecified psychiatric illness, while his brother Aristocles, who was considered a “sensitive and romantic soul” (Papadimitriou, 2004) is reported to have died from suicide according to some sources (Finteias, 2016). Several life events could have precipitated Chalepas’ innate predisposition toward mental diseases, such as the paternal discouragement to follow his passion for art as a youngster, the financial privation and scholarship interruption as a student in Germany and the failed

wedding proposal. In contrast, his mother's authoritarian stance and the social stigma endured in his local community could have played a perpetuating role in the course of his illness (Filippotis, 2006).

Schizoaffective disorder, which is a combination of schizophrenia and a mood disorder (Schrimpf, Aggarwal & Lauriello, 2018), is one of the most misdiagnosed disorders in psychiatry (Wy & Saadabadi, 2020). The DSM-V criteria for the schizoaffective disorder include an uninterrupted duration of illness during which there is a major mood episode (manic or depressive) in addition to criterion A for schizophrenia; criterion A requires two of the following: delusions, hallucinations, disorganized speech (e.g., frequent derailment or incoherence), grossly disorganized or catatonic behavior, negative symptoms (i.e., diminished emotional expression or avolition) for a period of at least a month. Most importantly, in schizoaffective disorder, symptoms that meet the criteria for a major mood episode are present for the majority of the total duration of the active as well as residual portions of the illness (Wy & Saadabadi, 2020). Stefanou and Ziemman (2019) attributed Chalepas' irritability and aggressive behavior to mania or hypomania during the 1877-1878 period. Although this could be the case, irritability and aggression can also frequently be seen in the context of psychosis of a schizophrenic illness (Mohr, Pecenáková, Svestka, Swingler & Treuer, 2005). Moreover, there is no record of Chalepas experiencing additional frequent manic symptoms, such as euphoric mood or grandiose delusions (Angst, Ajdacic-Gross & Rössler, 2015; Picardi, Fonzi, Pallagrosi, Gigantesco & Biondi, 2018). Therefore, this 'manic' period might as well be a presentation of his schizophrenic illness. Furthermore, it is challenging to determine whether Chalepas' low mood and reduced affect were due to depression or negative symptoms of schizophrenia, whilst the durability of his depression is also uncertain. Comorbid depression in schizophrenia is very frequent – it is seen in nearly 50% of people with schizophrenia. (Buckley, Miller, Lehrer & Castle, 2009). Testimonies highlight that Chalepas' affective component appeared to be more conspicuous in the initial years of his illness and might therefore not have been present for the majority of his illness; it seems that the psychotic symptoms predominated for the total duration of the illness.

Finally, patients with major depression with psychotic features only experience psychotic features during their mood episodes (Wy & Saadabadi, 2020); a phenomenon that is in contrast with the aforementioned testimonies about Chalepas' illness course.

The possibility that Chalepas' psychosis was caused secondary to the pressure from his tyrannical mother does not appear plausible either. The theory that dysfunctional families and, in particular, bad mothers (the "schizophrenogenic mother") cause young people to become schizophrenic, although popular until a few decades ago, has now been largely discredited (Harrington, 2012). On the other hand, it is widely accepted that the emotional overinvolvement of mothers of people with schizophrenia, along with other high expressed emotions (i.e., critical comments, hostility) in the family environment, is a robust predictor of relapse in schizophrenic people (Amresha & Venkatasubramanian, 2012).

Taking all the above into consideration, Yannoulis Chalepas was tormented by a psychotic disorder in the schizophrenic spectrum, most likely schizophrenia. This appears to be also in line with the diagnosis of physicians contemporary to him who had the opportunity to examine him, e.g., K.D. Konstantinidis (Filippotis, 2006) or posthumously investigated his mental illness, e.g., G.N. Papadimitriou (Papadimitriou, 2004). Nevertheless, one cannot be dogmatic about this statement, as diagnostic criteria for psychiatric conditions have substantially evolved ever since. Even Emil Kraepelin himself, the proponent of the dichotomy of endogenous psychoses into affective psychoses and schizophrenia, stated that "no experienced diagnostician would deny that cases where it seems impossible to arrive to a clear decision, despite extremely careful observation, are unpleasantly frequent" and "...therefore, the increasingly obvious impossibility to separate the two respective illnesses satisfactorily should raise the suspicion that our question is wrong" (Hippius & Müller, 2008).

One conclusion is certain, though; Chalepas did not suffer from what is considered "dementia" nowadays, as his admitting diagnosis to the psychiatric hospital of Corfu indicated. Although the medical records from that admission are not available, it is evident that his disease had an intermittent, albeit protracted trajectory, with numerous lucid intervals in-between, typically exemplified on occasions where he would come in contact with his beloved art, such as visiting museums or interacting with other sculptors. Moreover, his dynamic return to the cultural stage during the most productive last two decades of his life attests to his preserved intellect and creativity. This misclassification though may merely stem from differences in the nomenclature of psychiatric and neurologic diseases at that era. It is noteworthy that the first characterization of schizophrenia by Kraepelin was that of "dementia praecox" (Hippius & Müller, 2008).

Finally, the saved testimonies suggest that he most likely died from the aftermath of a left middle cerebral artery stroke that left him with right-sided hemiplegia, possibly with superimposed word-finding difficulties, for the last months of his life. His exact cause of death remains elusive, although testimonies suggest a second event leading to “brain congestion” (Filippotis, 2006).

### **The bidirectional relationship between disease and art**

Chalepas’ life and career highlight the bidirectional relationship between neuroscience and art. People stereotypically view artists as “creative geniuses” and “eccentric and bizarre creatures” (Van Tilburg & Igou, 2014). In popular culture, there is a longstanding view that exceptional talent is linked with mental illness. Older studies supporting this link have been criticized for methodological errors (Kaufman & Paul, 2014). Thus, the romanticized notion that mental disorders contribute to the talent of certain artists may still exist, but it remains controversial whether a chronic, debilitating illness can actually increase innovation and productivity (Kaufman & Paul, 2014; Taylor, 2017). A large Swedish study in 2013 showed that, with the exception of bipolar disorder, individuals with creative professions were not more likely to suffer from psychiatric disorders, schizophrenia included (Kyaga et al., 2013). Navratil (2015), in his work “Schizophrenie und Kunst” (“Schizophrenia and Art”), argues that “the psychological dynamics of creativity is the same in healthy and sick”. On the other hand, there is evidence that creativity is linked with both intellect and the personality trait of openness and that susceptibility to mental health disorders such as schizophrenia spectrum disorders is associated with the increased openness, which in turn is associated with the originality of ideas (Kaufman & Paul, 2014). The association of risk genes with creativity in healthy individuals, as well as an overall sharing of common genetic variation between bipolar patients and creative individuals, provides support for this model (Greenwood, 2016).

What is profoundly impressive in Chalepas’ case is his radical style reform between his pre-morbid and post-morbid era, despite the preservation of Greek antiquity in the epicenter of his thematology. His early works correspond to his neoclassic academic education (Diamantopoulou, 2018), exhibiting corporeality and naturalistic movement (Stefanou & Ziemann, 2019). On the other hand, his late works reflect an expressionistic approach that appears instinctively coarse, evading detailed elaboration of the surface. Given his prolonged isolation, it is inconceivable that Chalepas may have adopted more contemporary sculpture styles that emerged in Europe during his stu-

dent years. Although one cannot exclude the long-term absence of technical training as a potential explanation for this transformation (Stefanou & Ziemann, 2019), it is possible that this novel stylistic expression represents a ‘release phenomenon’ of a more primitive artistic tendency that emerged as a result of the underlying psychopathology that eradicated the subconscious conformity imposed by higher cognitive functions (Filippotis, 2006). As an analogy, a similar appearance of primitive reflexes and behaviors is encountered in organic disorders of the brain that fall in the spectrum of Neurology.

Chalepas’ mental illness had a devastating effect on his art and personal life imposing a nearly 40-year-long intellectual lethargy. Despite this, and following the death of his domineering mother, he managed not only to recover but also enter an “orgasmic” period of artistic creativity; one could argue that forty years of abstinence from art nearly did not exist (Finteias, 2016). Although the presence of a schizophrenic illness has a significantly negative impact on daily functioning, research shows that functional status (psychosocial functioning) is more linked to functional outcomes in schizophrenic patients than disorder status (the presence of psychotic symptoms) (Schimpf et al., 2018). In this respect, one could assume that Chalepas’ great passion and motivation for his art may have played a crucial and protective role in his recovery and the sustainability of his functionality; his art could act as a systematic form of self-healing (Panteleakos, 2020). Existing literature indicates that both patients with psychotic illnesses and their therapists consider art therapy beneficial and meaningful (Attard & Larkin, 2016). It is also impressive that Chalepas, who suffered from a chronic debilitating illness, lived up to the age of 87 in an era where psychiatric treatments practically did not exist. In addition to the beneficial effect of his artistic creativity (Degmečić, 2018), this could highlight the “upside” of not receiving psychotropic medications and thus not being subject to the severe metabolic side effects that contribute to reduced life expectancy in people with psychosis (Hirsch et al., 2017).

Our study has certain strengths and limitations. One advantage of our analysis is that we investigated the neuropsychiatric maladies of Chalepas as a whole, elaborating not only on the psychiatric component but also on the neurologic component, which to our knowledge, has not been previously analyzed in detail. On the other hand, our study is limited by the fact that there is an overlap and subjectivity between psychiatric diagnoses, which becomes intensified further when trying to provide a diagnosis posthumously based on recorded testimonies and biographical accounts.



## CONCLUSION

The bidirectional relationship between neuroscience and art in the history of humanity is also exemplified in the legacy of Yannoulis Chalepas. The borderland of artistic ingenuity with aberrant behavior, the misconceptions of neurocognitive disorders with psychosis along with their associated social stigma, the two-way effect of artistic expression in the manifestation of psychiatric disease, as well as its healing and often transformative power are the concepts that still tantalize equally scientists and artists around the globe. Yannoulis Chalepas lived a life tormented by mental illness, but this did not prevent him from producing masterpiece art and gaining a seat in the pantheon of the all-time great Greek artists.

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## DISCLOSURE / DECLARATION OF INTEREST

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## REFERENCES

1. Amaresha, A. C. & Venkatasubramanian, G. (2012). Expressed Emotion in Schizophrenia: An Overview. *Indian Journal of Psychological Medicine*, 34(1), 12–20. <https://doi.org/10.4103/0253-7176.96149>
2. Angst, J., Ajdacic-Gross, V. & Rössler, W. (2015). Classification of mood disorders. *Psychiatria Polska*, 49, 663–671. <https://doi.org/10.12740/PP/58259>
3. Arshad, M. & Fitzgerald, M. (2004). Did Michelangelo (1475–1564) have High-Functioning Autism? *Journal of Medical Biography*, 12(2), 115–120. <https://doi.org/10.1177/096777200401200212>
4. Attard, A. & Larkin, M. (2016). Art therapy for people with psychosis: a narrative review of the literature. *The Lancet Psychiatry*, 3(11), 1067–1078. [https://doi.org/10.1016/S2215-0366\(16\)30146-8](https://doi.org/10.1016/S2215-0366(16)30146-8)

5. Bätzner, H. & Hennerici, M. G. (2007). Lovis Corinth: integrating hemineglect and spatial distortions. *Frontiers of Neurology and Neuroscience*, 22, 30–43. <https://doi.org/10.1159/000102870>
6. Bhattacharyya, K. & Rai, S. (2014). The neuropsychiatric ailment of Vincent Van Gogh. *Annals of Indian Academy of Neurology*. <https://doi.org/10.4103/0972-2327.145286>
7. Biedermann, F. & Fleischhacker, W. W. (2016). Psychotic disorders in DSM-5 and ICD-11. *CNS Spectrums*, 21(4), 349–354. <https://doi.org/10.1017/S1092852916000316>
8. Blom, J. D. (2018). [Hallucinations and art]. *Tijdschrift Voor Psychiatrie*, 60(1), 37–45. <http://www.ncbi.nlm.nih.gov/pubmed/29341055>
9. Bogousslavsky, J. (2010). The last myth of Giorgio De Chirico: neurological art. *Frontiers of Neurology and Neuroscience*, 27, 29–45. <https://doi.org/10.1159/000311190>
10. Bolis-Pavlopoulos (2004). *Yiannoulis Chalepas: Tragedy and Myth. Tribute of the Panhellenic Holy Foundation of Evangelistria of Tinos to Yiannoulis Chalepas*. Tinos: Ekplous.
11. Boller, F., Sinforiani, E. & Mazzucchi, A. (n.d.). Preserved painting abilities after a stroke. The case of Paul-Elie Gernez. *Functional Neurology*, 20(4), 151–155.
12. Buckley, P. F., Miller, B. J., Lehrer, D. S. & Castle, D. J. (2009). Psychiatric Comorbidities and Schizophrenia. *Schizophrenia Bulletin*, 35(2), 383–402. <https://doi.org/10.1093/schbul/sbn135>
13. Colombo-Thuillard, F. & Assal, G. (2007). Persisting aphasia, cerebral dominance, and painting in the famous artist Carl Fredrik Reuterswärd. *Frontiers of Neurology and Neuroscience*, 22, 169–183. <https://doi.org/10.1159/000102879>
14. Constant, E. (2011). [Music, composers and psychopathology: the psychiatrist's view]. *Bulletin et Memoires de l'Academie Royale de Medecine de Belgique*, 166(1–2), 88–96; discussion 97–8.
15. Cooper, B. (2008). Camille Claudel: trajectory of a psychosis. *Medical Humanities*, 34(1), 25–29. <https://doi.org/10.1136/jmh.2008.000268>
16. Degmečić, D. (2018). Schizophrenia and creativity. *Psychiatria Danubina*, 30(Suppl 4), 224–227.
17. Delgado, M. G. & Bogousslavsky, J. (2018). Joan Miró and Cyclic Depression. *Frontiers of Neurology and Neuroscience*, 43, 1–7. <https://doi.org/10.1159/000490400>
18. Diamantopoulou, E. (2018). Tribute to Yannoulis Chalepas: “The Reclining Female Figure without metaphysics”. *The Tree “To Dentro”*, 31(220–221).
19. Dieguez, S., Assal, G. & Bogousslavsky, J. (2007). Visconti and Fellini: From Left Social Neorealism to Right-Hemisphere Stroke. In *Neurological Disorders in Famous Artists - Part 2* (pp. 44–74). <https://doi.org/10.1159/000102871>
20. Felisati, D. & Sperati, G. (2010). Francisco Goya and his illness. *Acta Otorhinolaryngologica Italica : Organo Ufficiale Della Societa Italiana Di Otorinolaringologia e Chirurgia Cervico-Facciale*, 30(5), 264–270.
21. Filippotis, S. (2006). *Essays on Chalepas and his times*. Athens: Erinni.
22. Finteias (2016). *Reference to Yannoulis Chalepas*. [http://finteias.blogspot.com/2006/12/blog-post\\_12.html](http://finteias.blogspot.com/2006/12/blog-post_12.html)
23. Greenwood, T. A. (2016). Positive Traits in the Bipolar Spectrum: The Space between Madness and Genius. *Molecular Neuropsychiatry*, 2(4), 198–212. <https://doi.org/10.1159/000452416>

24. Hankir, A. (2011). Review: bipolar disorder and poetic genius. *Psychiatria Danubina*, 23 (1), S62-8. <http://www.ncbi.nlm.nih.gov/pubmed/21894105>
25. Hankir, A. & Zaman, R. (2015). "Craziness" and creativity: Psychopathology and Poetry. *Psychiatria Danubina*, 27(1), S151-4. <http://www.ncbi.nlm.nih.gov/pubmed/26417752>
26. Harrington, A. (2012). The fall of the schizophrenogenic mother. *The Lancet*, 379(9823), 1292–1293. [https://doi.org/10.1016/S0140-6736\(12\)60546-7](https://doi.org/10.1016/S0140-6736(12)60546-7)
27. Hippus, H. & Müller, N. (2008). The work of Emil Kraepelin and his research group in München. *European Archives of Psychiatry and Clinical Neuroscience*, 258(S2), 3–11. <https://doi.org/10.1007/s00406-008-2001-6>
28. Hirsch, L., Yang, J., Bresee, L., Jette, N., Patten, S. & Pringsheim, T. (2017). Second-Generation Antipsychotics and Metabolic Side Effects: A Systematic Review of Population-Based Studies. *Drug Safety*, 40(9), 771–781. <https://doi.org/10.1007/s40264-017-0543-0>
29. James, I. (2010). Autism and art. *Frontiers of Neurology and Neuroscience*, 27, 168–173. <https://doi.org/10.1159/000311200>
30. Jamison, K. R. (1989). Mood Disorders and Patterns of Creativity in British Writers and Artists. *Psychiatry*, 52(2), 125–134. <https://doi.org/10.1080/00332747.1989.11024436>
31. Kairofylas, G. (1986). *Yannoulis Chalepas. The sensitive and kind Timian artist*. Filippotis.
32. Kaufman, S. B. & Paul, E. S. (2014). Creativity and schizophrenia spectrum disorders across the arts and sciences. *Frontiers in Psychology*, 5. <https://doi.org/10.3389/fpsyg.2014.01145>
33. Kyaga, S., Landén, M., Boman, M., Hultman, C. M., Långström, N. & Lichtenstein, P. (2013). Mental illness, suicide and creativity: 40-Year prospective total population study. *Journal of Psychiatric Research*, 47(1), 83–90. <https://doi.org/10.1016/j.jpsychires.2012.09.010>
34. Leo Navratil. (2015). *Schizophrenie und Kunst*. Fischer Taschenbuch.
35. Marcus, E.-L., Kaufman, Y. & Cohen-Shalev, A. (2009). [Creative work of painters with Alzheimer's disease]. *Harefuah*, 148(8), 548–553, 570.
36. Mohr, P., Pecenák, J., Svestka, J., Swingler, D. & Treuer, T. (2005). Treatment of acute agitation in psychotic disorders. *Neuro Endocrinology Letters*, 26(4), 327–335.
37. Öztürk, Ş., Altieri, M. & Troisi, P. (2010). Leonardo Da Vinci and stroke - vegetarian diet as a possible cause. *Frontiers of Neurology and Neuroscience*, 27, 1–10. <https://doi.org/10.1159/000311187>
38. Panteleakos, G. (2020). The mental illness of Yannoulis Chalepas. *Dialogues in Clinical Neuroscience & Mental Health*, 3(4). <https://doi.org/10.26386/obrela.v3i4.144>
39. Papadimitriou, G. N. (2004). *Yannoulis Chalepas*. Erinni.
40. Picardi, A., Fonzi, L., Pallagrosi, M., Gigantesco, A. & Biondi, M. (2018). Delusional Themes Across Affective and Non-Affective Psychoses. *Frontiers in Psychiatry*, 9. <https://doi.org/10.3389/fpsyg.2018.00132>
41. Ruddy, R. & Milnes, D. (2005). Art therapy for schizophrenia or schizophrenia-like illnesses. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.CD003728.pub2>

42. Samouilides, C. (2008). *Yiannoulis Chalepas: The tragic life of the famous artist*. Athens: Estia.
43. Schrimpf, L. A., Aggarwal, A. & Lauriello, J. (2018). Psychosis. *CONTINUUM: Lifelong Learning in Neurology*, 24, 845–860. <https://doi.org/10.1212/CON.0000000000000602>
44. Spitzer, C., Dahlenburg, B. & Freyberger, H. J. (2006). [Recurrent depressive disorder in Caspar David Friedrich. A pathographical approach with operationalized diagnosis]. *Fortschritte Der Neurologie-Psychiatrie*, 74(7), 392–399. <https://doi.org/10.1055/s-2005-915575>
45. Stefanou, M. I. & Ziemann, U. (2019). Neuroaesthetical Changes in Sculpture: The Case of Yannoulis Halepas (1851–1938). *European Neurology*, 82(4–6), 116–123. <https://doi.org/10.1159/000505546>
46. Taylor, C. L. (2017). Creativity and Mood Disorder: A Systematic Review and Meta-Analysis. *Perspectives on Psychological Science*, 12(6), 1040–1076. <https://doi.org/10.1177/1745691617699653>
47. Tohid, H. (2016). Robin Williams' suicide: a case study. *Trends in Psychiatry and Psychotherapy*, 38(3), 178–182. <https://doi.org/10.1590/2237-6089-2015-0064>
48. Turco, R. (2002). The Object and the Dream: Mark Rothko. *Journal of the American Academy of Psychoanalysis*, 30(1), 17–34. <https://doi.org/10.1521/jaap.30.1.17.21984>
49. Van Tilburg, W. A. P. & Igou, E. R. (2014). From Van Gogh to Lady Gaga: Artist eccentricity increases perceived artistic skill and art appreciation. *European Journal of Social Psychology*, 44(2), 93–103. <https://doi.org/10.1002/ejsp.1999>
50. Viederman, M. (1994). Edvard Munch: A Life in Art. *Journal of the American Academy of Psychoanalysis*, 22(1), 73–110. <https://doi.org/10.1521/jaap.1.1994.22.1.73>
51. Wý, T. J. P. & Saadabadi, A. (2020). Schizoaffective Disorder. In *StatPearls*. <http://www.ncbi.nlm.nih.gov/pubmed/31082056>
52. Yip, P. S. F., Fu, K. W., Yang, K. C. T., Ip, B. Y. T., Chan, C. L. W., Chen, E. Y. H., ... Hawton, K. (2006). The effects of a celebrity suicide on suicide rates in Hong Kong. *Journal of Affective Disorders*, 93(1–3), 245–252. <https://doi.org/10.1016/j.jad.2006.03.015>

## SAŽETAK

Cilj je ovog rada istaknuti dvosmjeran odnos između neuroznanosti i umjetnosti u životu i vremenu najistaknutijeg kipara moderne grčke povijesti Yannoulisa Chalepasa. Analizirani su biografski izvori i svjedočanstva o njegovu životu i djelu. U radu se raspravlja o pronalascima vezanim uz neuropsihijatrijske bolesti s kojima se borio tijekom svoga života i njihovu utjecaju na njegovu umjetnost. Život i umjetnost Yannoulisa Chalepasa trihotomizirani su u kategorije karizmatičnoga premorbidnog razdoblja (1851. – 1877.), produljenog, srednjovjekovnog, morbidnog razdoblja (1878. – 1917.) i transfigurativnog, postmorbidnog razdoblja (1918. – 1938.). Kombinacija medicinskih dokaza sugerira da je Yannoulis Chalepas patio od shizofrenije. To se odražavalo u njegovoj umjetnosti u dva različita razdoblja umjetničke produktivnosti i stilskog stvaralaštva. Dvosmjeran odnos između neuroznanosti i umjetnosti u povijesti čovječanstva prikazan je i u ostavštini Yannoulisa Chalepasa. Granica umjetničke genijalnosti s aberantnim ponašanjem, pogrešne predodžbe o neurokognitivnim poremećajima sa psihozom uz njihovu pridruženu društvenu stigmatu, učinak umjetničkog izražavanja

*u manifestaciji psihijatrijske bolesti, kao i njegova iscjeljujuća i često transformativna moć koncepti su koji još uvijek jednako muče znanstvenike i umjetnike širom svijeta.*

**Ključne riječi:** *umjetnost, Chalepas, neurologija, neuroznanost, psihijatrija, shizofrenija*

