

## Review

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# Stendhal Syndrome: A Psychological Response Among Tourists

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## ABSTRACT

Stendhal Syndrome (SS) is a behavioral syndrome characterized by anxiety and affective and thought disturbances in response to art and often to culturally or historically significant places. The purpose of this review is to elucidate the clinical significance of SS and discuss the various approaches implemented towards understanding the condition. Our objective is directed towards promoting further research to understand the etiology of SS as a rare medical condition and to define other potential perspectives in its investigation.

**KEY WORDS:** Stendhal Syndrome (SS); Psychiatric condition; Clinical symptoms; Tourist city syndromes; Neuroaesthetics.

## INTRODUCTION

Stendhal Syndrome (SS) is a rare psychiatric condition characterized by a state of dizziness, panic, paranoia or madness caused by being exposed to artistic or historical artifacts or having witnessed too many of these artworks at the same time.<sup>1</sup> Tourism has been identified as a potential cause of the emotional processes previously reported in the clinical cases of SS. Existing studies report the occurrence of similar emotional responses among tourists after visiting geographically and culturally distinct places as has been clinically manifested in a range of tourist city syndromes, discussed in detail in this paper.<sup>2</sup> The recurrence of symptoms across mild emotional disturbances to psychoses that occur when some people visit certain cities, has drawn the attention of various researchers seeking to investigate SS and related syndromes from the perspective of medical sciences. It is towards this objective that this paper invites for further focus on the study of SS, emphasizing on the relevance of neuroaesthetics as a promising approach to the study, by offering a review of extant research on SS, and by pointing towards new paradigms for examining such phenomenon.

## AN OVERVIEW OF STENDHAL SYNDROME

SS gets its name from an avid French traveler and writer, Marie-Henri Beyle, also known to the world as Stendhal.<sup>3</sup> Stendhal drew from his experiences of travelling across the globe in his literary creations and is quite rightly known for introducing the French with the word “tourist” through his writings. This yen for travelling had led Stendhal to a multitude of emotional experiences, and it is one particular experience of visiting Santa Croce Cathedral, Florence, Italy in 1817 that is of significance here.

Stendhal talks about how the rich culture and history that Italy unfolded to him through art stirred strong emotions in his heart. He experienced a condition which was emotionally overwhelming and evoked in him a feeling of intense ecstasy and euphoria. The debilitating condition was marked by a short episode of palpitation, dizziness, and the lack of physical strength to even walk by himself.<sup>4</sup> The description of Stendhal’s overpowering experience in his book based on the “Travel Disease” or “Art Disease” instilled the confidence in many tourists, who experienced anxiety and agitation during their trip to Italy, to talk about their discomfort candidly.

In 1979, an Italian psychiatrist, Graziella Magherini, the Chief of Psychiatry at the Santa Maria Nuova Hospital, Florence, Italy, examined tourists, mostly brought directly from museums and art galleries, admitted under emergency conditions for sudden episodes of panic attacks and mental instability. The symptoms that were commonly observed among the 106 affected patients were identity crisis, physical and mental exhaustion, dizziness, and hallucination. Magherini's book entitled "*La Sindrome di Stendahl*" identifies these clinical characteristics as a reaction to the deep impression cast by historically significant characters and the rich Italian culture encountered in the patients' travels. In particular, the book also discusses agitated and psychotic responses to paintings or sculptures depicting historical revelations or wars.<sup>3</sup> The intense emotions experienced by a prominent literary figure like Stendhal in response to the rich Italian history and art, led Magherini to associate related clinical symptoms with that of SS.

#### EVIDENCE OF PRE-EXISTING RESEARCH IN STENDHAL SYNDROME

Beyond the obvious and intricate psychological responses to various socio-cultural and religious aspects of travel, there is a potential and need for investigating other physiological conditions culminating in SS. This includes an examination of genetic regulation, molecular and cellular signaling mechanisms, biochemical pathways, and affected neural networks underlying this and other related conditions. Existent research on the syndrome is addressed primarily from the perspectives of neuroaesthetics and neurophysiology.

Recently, a large number of clinically reported cases of SS have been intensively discussed beginning with an instance in 2005, in which Amâncio<sup>5</sup>, a Brazilian neurosurgeon, reported the case of a Russian novelist who showed the symptoms of SS. In 2009, Nicholson<sup>6</sup> wrote about an episode of paranoid-psychosis experienced by a 72-year-old following his visit to Florence. Published in the *British Medical Journal Case Reports*, this case describes the patient's eagerness to visit the Ponte Vecchio Bridge; and having visited the site, of his experience of disorientation and "florid persecutory ideation". Such paranoia even included references to international airlines, bugging of rooms, and other strange and peculiar notions. These symptoms gradually subsided over three weeks of physical rest.

In 2010, Bamforth<sup>4</sup> published evidences of similar symptoms as concluded from the experiences of the two psychologists, Carl Gustav Jung and Sigmund Freud, both of whom had reported symptoms pertaining to SS. In his autobiography, Jung talked about an incident in Pompeii where he was mentally and physically overwhelmed by artwork. Under the spell of such an intense experience, he lost his senses and discontinued his journey to Rome – a destination he never visited, given the deeply moving impressions Europe's imperial structures and art left on him. Freud too, reported a similar encounter with art during his visit to the Acropolis of Athens.<sup>4</sup> The encounter incited in him a feeling of enthusiasm

followed by a sense of depersonalization and alienation. This overpowering mental state was stimulated by Sigmund Freud's lifelong fascination with the ideas of Acropolis and the Greek civilization. Aside from approaching such mental states as clinical manifestations, it has been treated as a state of extreme disillusionment. Given the multiplicity of such reported cases it is worth addressing the role and exclusivity of places of paramount beauty or aesthetic value in stimulating SS among tourists.<sup>7</sup> There has been more recent mention of an investigation of physiological attributes by a research group in Italy, who are measuring clinical parameters such as heart rate, blood pressure, and respiratory rate, relevant to SS among visitors of the historically significant, Palazzo Medici Riccardi in Florence, Italy.<sup>8</sup>

Despite various cases of SS being documented, it is yet to be mentioned in the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders - fifth edition (DSM-5). This could possibly be due to the inability of such clinically reported cases to meet the parameters of dysfunction necessary to qualify as a mental health disorder according to the revised clauses of DSM-5. Of particular importance is the failure to comply with the postulate stating that "the impairment in personality functioning and the individual's personality trait expression are not better understood as normative for the individual's developmental stage or socio-cultural environment."<sup>7</sup>

There have been similar records of extreme emotional responses clinically manifested as behavioural syndromes in tourists visiting places rich in art, history, and culture, which will now be discussed in the form of other tourist syndromes in the following section.

#### OTHER TOURIST CITY SYNDROMES

Tourist city syndromes are an intriguing aspect of study in the sense that it is commonly associated with cities that possess distinct cultural and religious significance, and thus hold a special meaning for the tourists. These cities seem to precipitate characteristic reactions among certain visitors by virtue of their reputations.<sup>2</sup> The following paragraphs provide a brief overview of the lesser known but widely experienced behavioral syndromes similar to SS but named after cities, in terms of tourism and metaphorical associations.

The Venice Syndrome is a behavioral condition associated with Italy, where reportedly 51 men and women from Germany, France, USA, England, and other parts of the world attempted to commit suicide between the years 1988 and 1995.<sup>2</sup> Those who survived following the suicide attempt confessed that their sole purpose of visiting Venice was to kill themselves which, according to the studies conducted by Italian researchers, was often described as the "Symbol of Death".<sup>9</sup>

In a similar way, the experience of being in Rome was found to stimulate Jerusalem Syndrome, which entails a state

of *caput mundi* – a feeling of lightness associated with spiritual awakening.<sup>10</sup> Even though the first medical case of Jerusalem Syndrome was first reported in 1930 by an Israeli psychiatrist, Herman<sup>11</sup>, it was not until 1970 that the clinical records of the syndrome began to be maintained by the Kfer Shaul Mental Health Centre, Jerusalem. The records present a count of approximately 100 medical cases of Jerusalem Syndrome being reported every year and 40 patients being admitted for it on average. Living in the delusion of being an imaginary religious figure, the affected pilgrims compulsively indulged in chanting sermons and Biblical verses and obsessed over cleansing of the soul, marked by continued bathing and cutting of finger and toenails.

Visits to other religious sites such as Mecca and the Vatican have also been known to induce similar psychedelic responses in tourists. One study reports an interesting medical case of a 62-year-old woman who travelled to Egypt from Israel with her husband.<sup>12</sup> The patient expressed anxiety, sleeplessness, restlessness, mood fluctuations, and abnormal behavior during the trip. She preached continuously, did not want to leave the church, offered water to other tourists by calling it wine, licked the floor in her hotel room, cleaned her entourage, hit herself in the stomach, and claimed that she was possessed. Investigation revealed that the patient had previously experienced a similar condition 20 years ago during her visit to the Vatican and on a work trip to Turkey. She was kept under surveillance in the hospital for over a month following which she was discharged with a prescribed dose of psychiatric medicines and an agreement with her husband to not let her visit any other places of worship in the future.<sup>12</sup>

Besides art, history, culture and religion, syndromes are also triggered by the otherness of a destination. The Paris Syndrome is a notable but rarely discussed instance of such cases. It was first reported in the French psychiatric journal, *Nervure*, in 2004, describing a frequently observed psychological anomaly in Japanese tourists on their visit to the City of Lights.<sup>13</sup> The syndrome is symptomatic of extreme agitation that has led patients to hallucinate about their hotel rooms being bugged or to consider themselves historically significant and powerful leaders of France. Possible reasons for the Japanese being susceptible to this condition are the stark contrast between the Parisian lifestyle with their own, unfamiliarity with the place and the language, and expectations from the idealized image of Paris as depicted in movies and pictures. The frequency of tourists affected by this syndrome has necessitated a 24 hour helpline by the Japanese embassy, which ensures immediate medical access to tourists in case of a psychological breakdown. While bedrest is a commonly suggested method for recovery in such cases, leaving the city under medical supervision may be the only option bearing positive results under critical conditions.<sup>14</sup>

Asia has also captivated the attention of various Western tourists who tend to be drawn towards “*dharmic*” philosophy (religions or beliefs from India) and traditions.<sup>15</sup> Holy

places in India, particularly Varanasi, Rishikesh, Auroville, and Dharamsala, are considered significant in spiritual pursuits of meditation, self-discovery, consciousness, self-empowerment, healing, and yoga, evoking revelations about self-identity, personal discovery, empowering, and healing among their followers.<sup>16</sup> The expectations of evolving as an individual and discovering the true meaning of one’s identity has resulted in the development of India Syndrome among the visitors from the Western world.<sup>17</sup> An incident involving the disappearance of an Irish and an Australian tourist during their trip to Rishikesh in their quest for spiritual enlightenment drew the attention of researchers.<sup>18</sup> Consistent with the conventionally discussed Stendhal and Jerusalem Syndrome, in this case, the affected individuals showed signs of delusion, hallucinations, high blood pressure, and increased heart rate under the burden of the social expectation to undergo a transformation as an individual.<sup>19</sup>

Evidence of such behavioral anomalies caused by religious fervors has also been noted in relation to Buddhism. The most unnerving of those is the incident of a Japanese monk setting fire to a religious building that drew pilgrims and worshippers from all over the world. This incident was later adapted into a novel that based its plot in the Kinkaku-ji Temple, a famous temple in Kyoto, Japan. Though no reported cases of mental illness have been found in the pilgrims to that temple, the novel uses the theory of a Kinkaku-ji Syndrome to explain the monk’s psychological stimulus in destroying a temple of religious and cultural significance.<sup>20</sup>

Focusing on another attribute of psychological condition related to travelling brings us to discuss the Airport, or Airport Wandering, Syndrome, in which the affected individuals are found unaware of their identity or any relevant details of their whereabouts. Being lost in the airport without a travel purpose is in itself symptomatic of a pre-existing mental disease.<sup>10,13,21-22</sup> Rare occurrences of similar psychological abnormalities have been reportedly experienced by visitors in art galleries or museums, often indicated in their comments as “Art Headache”, “Cultural Overload”, “Museum Fatigue” and “Cultural Overflow”.<sup>1</sup> Evidence supports similar influences on reading fictional literature and witnessing scenes of immense beauty.<sup>1,23</sup>

The stimulating relationship between the tourist and the destination leaves a deep impact on the observer’s mind. Often, the tourist’s brain is so positively influenced by the experience so as to be stressed by it, thus, culminating in the clinical symptoms of the widely classified tourist city syndromes such as SS and the others described here.<sup>20</sup>

#### POSSIBLE FACTORS AND APPROACHES TOWARDS THE STUDY OF STENDHAL SYNDROME

Travelling is often motivated by the coming into contact with art, history, and culture of a destination, with the expectation that it will lead a tourist to different (and at times richer) feelings

and sensory experiences. This motivation underlies the nature of association between the tourist and the destination. Seneca<sup>24</sup>, the Italian philosopher, once said that a tourist's gaze is akin to a child's wonderment at seeing the unfamiliar. For tourists with psychological difficulties, such wonderment and foreignness of travel can lead to a range of symptoms like longing for possessions, fits of anger, expression of love, and a burdened mind. Other than a history of mental illness, individuals who are psychologically fragile and overtly sensitive or emotional are also susceptible to such symptomatic behavior.

In 1999, Hall and Page<sup>25</sup> elucidated the importance of scholarly research towards investigating the aspect of human motivation in tourism. They draw on Maslow's theories of human needs and motivation to posit that travelling enabled individuals to discover their true selves by exploring the depth of their emotions. A related classification model was developed by Mitchell in 1983 based on a study of nine types of people, such that the higher levels of the model represent the inner-directed tourist who depends on travel as a means to self-reflect and introspect. In the 1980s, McNulty identified that 38% of the tourist population in his study fell under this category. The higher percentage reported in McNulty's study indicates an interest among the tourists which should be considered as a pathological predisposition only in a small percentage of people. Current focus on Maslow's pyramid supports the idea that on reaching the highest level, the pyramid becomes inverted as a mirror extending towards other levels of psychological needs. Thus, the unique experience of a tourist having witnessed a classic tourist attraction cannot be recreated, replaced, or reproduced. Literature, theatre, cinema, and television also perpetuate this tendency by creating a collective imagination for places and experiences, and thereby presupposing tourist syndromes in places other than those typically suspected.<sup>20</sup>

It is on account of the complex emotional strain associated with tourism that researchers have been led to investigate the implicit mechanisms of this phenomenon, which can incite such syndromes in tourists. Though pre-existing studies elucidate in great detail the neurobiological and psychoanalytical approaches towards an understanding of SS, these also pave the way for further research on other potential approaches such as neuroaesthetics, study of neurobiological mechanisms at the level of genes and signaling mechanisms, and analysis of neural associations and networks across different brain areas to enable a complete understanding of SS in biological terms.

### PSYCHOANALYTICAL APPROACH

Magherini devised a psychoanalytical approach to study artistic enjoyment as a complex association of psychological responses, evoked in an observer by artworks. A model equation of this approach is defined by three variables and one constant. The first variable is "the primary aesthetic experience", which is established at the beginning of life and carried forward intrinsically as a mother-child aesthetic experience. The second variable is "the strangeness", which brings back remote

experiences worth remembering under certain circumstances after having observed a certain piece of art. The third variable is "the selected fact" according to which the perception of the art object can largely influence the reaction evoked in the observer. The constant in this equation is the content, the symbolism, and the parameters that shape the artistic value of the art object. This equation represents the distinct responses of different individuals to the same artwork, or a reaction of the same individual to the same artwork at different times of his life.<sup>26</sup> The self-explanatory equation as presented by Dr. Magherini can thereby possibly be applied towards understanding the range of distinct emotional and psychological responses that an artwork or a tourist destination can elicit in the observer when affected by SS.

### NEUROPHYSIOLOGICAL APPROACH

The clinical diagnosis of multiple cases of SS was reported by Magherini for the first time in medical history. Her contribution towards the treatment of patients presenting with a range of emotional responses and behavioral anomalies created awareness and knowledge of the commonly experienced clinical symptoms among those affected by SS. On the basis of her record of treating such patients, she inferred that the disease had an unpredictable and unexpected onset. The symptoms lasted for about 2 to 8 days, triggered thought disturbances in 66%, affective disorders in 29%, and anxiety disorders with panic attacks in 5% of the patients. The characterizing symptoms of the affected also included sweating, physical weakness, tachycardia, chest tightness and a sense of alienation, anxiety, and confusion. Among the less commonly reported symptoms were agitation and the desire to destroy local works of art.<sup>27</sup>

Over 50% of the reported cases of SS indicated a medical history of psychiatric disorders in the patients. Repressed sexual drive, fatigue, inadequate sleep, or the coming to the end of a trip were some of the potential factors which were commonly attributed to its clinical manifestation. Although, some patients were undergoing moments of change or uncertainty, they were mostly psychologically sound before the onset of SS. A comparison of the patients with the unaffected tourists based on demographic and socio-cultural attributes revealed that older mean age and lower educational qualifications were likely predisposing factors. Among the affected tourists were a smaller percentage of managers, businessmen, or professionals compared to healthy tourists, who mostly comprised women on an unplanned trip.<sup>7</sup>

Guerrero et al<sup>7</sup> investigated the incidence of SS and related symptoms in a group of neurologists by conducting a survey during a series of professional workshops held in the cities of Rome, Florence, Padua, and Venice. The survey aimed to collect demographic data by interrogating neurologists about symptoms they had observed in the form of positive responses such as aesthetic pleasure, excitement, euphoria, feeling of omnipotence, or negative responses such as changes in perception, feelings of guilt, insecurity, inadequacy, or unpleasant somatic symptoms, and if their patients suffered from a complete or par-

tial form of the syndrome. Of the 48 questionnaires that were handed out to the participants, the mean age was recorded as 50±9 years and the male/female ratio as 1.7/1. Twenty-five percent of the participants reported observing a partial form of SS without any panic attack or thought disorders, but with substantial response to art mainly including pleasure (83%) and emotion (62%). Crucially, none of the neurologists reported serious symptoms of SS but only a partial form of the condition with implications of milder clinical symptoms.<sup>7</sup>

From the observations, it was noted that SS was more commonly associated with European tourists and rarely with Asians, Italians, and North Americans. Particularly for those living alone, belonging to a classical or religious educational background have a greater tendency to develop SS.<sup>6,28</sup> Nicholson et al<sup>6</sup> attributed the occurrence of SS to cultural overload, which evokes an anomalous autonomic reaction among the tourists.

## NEUROAESTHETICS

Proust, a legendary French novelist and critic of the 20<sup>th</sup> century, has been closely associated with medicine and neurology because his asthma was considered a psychosomatic condition (neurasthenia).<sup>27</sup> It is believed that the author was involved in substance abuse and stimulants, and expressed a morbid fear of having a stroke, language and memory dysfunctions, dizziness, and falls.<sup>29-31</sup> The author's intrinsic fear was reflected in one of his characters who has a fatal stroke on seeing the most beautiful painting in the world, which was the author's personal favorite. There were also instances of the author experiencing symptoms akin to those of SS, such as malaise, dizziness, tachycardia, and transient loss of consciousness upon visiting an exhibition of Dutch paintings at the Jeu De Paume Museum in Paris.<sup>32</sup>

The objective to explore the neurobiological mechanism underlying aesthetic enjoyment – a factor affected by SS – brings to the fore the concept of mirror neurons.<sup>33,34</sup> Studies conducted on primates, in 1996, observed that certain neurons in the frontal premotor cortex were activated in response to the execution of an action as well as the observation of an executed action by another individual.<sup>35</sup> This finding was later also confirmed by research in social behavior positing that empathy causes and defines response to visual interactions with art.<sup>26,36</sup> In support of the physiological basis of empathy, Nietzsche, a 19<sup>th</sup> century German philosopher, claims that “empathy with other souls is not moral, but a physiological susceptibility manifested by suggestion.”<sup>37</sup> Freedberg and Gallese had presented a theory of empathic responses towards artworks, which suggested that observations of art activate mechanisms of stimulation embodying emotions, actions, or bodily sensations. These reactions were considered universal given their basis in neural tissue and a consistent exposure to various historical, social, cultural, and personal factors. However, unlike the psychoanalytical approach, these factors also take into account the perception and perspective towards art.<sup>38</sup>

Questions directed towards understanding art have

been studied extensively with the exception of the functional role of brain as the site of creation, execution, and reception of art. As a result, the neurological aspect of this phenomenon still remains to be explored and examined sufficiently.<sup>39</sup> And it is this gap in human understanding that has led to the founding of neuroaesthetics. It is a concept that segments the brain as visual and artistic. The visual brain serves as an instrument of perception, which explains artistic creation and extends into the artistic brain.<sup>40,41</sup> According to Zeki<sup>42,43</sup>, the underlying assumption in this theory is that the conception and perception of artwork is created in the brain and therefore, aesthetic characteristics are essentially neuroaesthetic. He believed that artists are neurologists who examine the visual brain through the use of various special techniques, and encouraged neurobiologists to take a look at art as a useful field for analysing how the brain functions and thus, demystifying the emotional reaction to beauty in any form.<sup>26,42-44</sup>

In her more recent research, Magherini analyzed SS by focusing on the constancy of the artwork and not on the clinical characteristics of the patients. For this study, she chose a sculpture of David – symbolic of young physical and mental energy supported by heroism, sensuality and intelligence, which has previously been known to trigger various psychological responses among its spectators.<sup>45</sup> A review of the entries in the guest record book of the Academy Gallery in Florence, Italy, during the 500<sup>th</sup> anniversary of the sculpture, was undertaken. This exercise revealed a gamut of responses from the audience: while some were awed by the perfection of the masterpiece, a few pointed at the minute imperfections in the structure. A majority of the visitors expressed positive feelings about the artwork, marveled at its longevity, and were attracted to and even enamored by the statue despite being aware of its inanimate nature. On the other extreme, some of the visitors expressed negative connotations of unpleasant experiences, painful emotions, hostility, competitiveness, and an intense desire to destroy the structure altogether.<sup>26</sup>

In the following years of discussion on SS, related symptoms were reported in a population of subjects and locations with similar characteristics such as Venice or Rome or places like Jerusalem and India – places associated with religion, mythology, mysticism and culture.<sup>26,46</sup> This emphasized the crucial need to understand the causes underlying these disorders in the presence of an artwork or a place of spiritual and aesthetic beauty. In 1952, Kris went on to elaborate how intense emotional responses that are not otherwise expressed easily are highlighted by artistic expressions. The association with art causes an intrinsic and subtle transition in the observer of art, thereby forcing an outburst of suppressed emotions. The intensity of the emotions triggered is enhanced further, depending on the proximity between the observer and the artwork or artifact.<sup>26</sup>

In 2014, Galleta conducted an unconventional and innovative approach to study the appreciation of aesthetic values of artwork through the use of social media based on the intersection of perceptual psychology, neuroaesthetics,

and information technology. Galleta's research indicated the possibility of designing an Aesthetic Algorithm, following the analysis of the neural mechanisms associated with aesthetic appreciation, which could predict the aesthetic preferences of the perceivers and viewers.<sup>47</sup> Based on the principles of Predictive aesthetics, this algorithm can enable the artist to modulate the amount of 'beauty' in a work, to elicit a certain emotional response among its audience.<sup>38</sup> Predictive aesthetics is a planned conditioning that can orient the aesthetic preferences of the audience based on their hedonic needs and stimulation of aesthetic pleasure.<sup>48</sup> The prediction of the artwork's beauty can also enable the artists to operate according to aesthetic precognition, thereby allowing them to influence the audience's preferences by modifying their art. Additionally, this could facilitate the development of aesthetic persuasion through the knowledge of how brain areas can be activated in response to, and appreciation of, beauty. This in turn is likely to induce reactions in perceivers towards visual stimuli such as the use of shapes or colors, support the conditioning of artistic appreciation, and drive the aesthetic preferences of the audience in predetermined ways.

There is a possibility that our admiration and appreciation for art forms is driven by a certain sense of aesthetic determinism and the ability to predict artistic preferences towards a particular artwork. This defines the concept of aesthetic precognition. The perspective of an individual towards a piece of art is driven by the neurophysiological basis of the viewer's interpretation.<sup>49,50</sup> The Processing Fluency Theory of aesthetic pleasure establishes the relation between the object and the perceiver by emphasizing the effects of objective stimulus attributes on perceived beauty. Thus, the impact that specific features of artworks has on the aesthetic sense of the viewers defines their perception of beauty. The compositional feature of an artwork drives the aesthetic judgment of an individual, not as a subjective, inborn, or acquired experience, but as a process of adaptation of the observer's brain to such stimulating hedonic experiences.<sup>47</sup> Such experiences can also be derived from witnessing different forms of art such as monuments, buildings, and museums which are culturally or historically significant, thereby presenting new directions in the investigation of SS.

The creative inspiration of the artist may be affected and conditioned by the knowledge of brain activation mechanisms of aesthetic pleasure, rendering the artist as a creator of conscious and premediated aesthetics available for subjective interpretation by each individual. Thus, the concept of aesthetic precognition could be a potential measure for gratifying the tastes of the public, in anticipation of the aesthetic preference of the viewers. The researchers believed that the development of an aesthetic algorithm could associate a psychological theory of aesthetic behavior with neurophysiological functions of the human brain and subjective cognitive processes.<sup>47</sup> Thus, neuroaesthetics presents a strong unifying perspective encompassing the neurobiological, psychoanalytical, and behavioral approach towards understanding the etiology of SS in response to diverse forms of art.

## CONCLUSION

The objective of this review was to highlight the clinical significance of behavioral conditions such as SS and other related syndromes possibly caused by similar psychosocial factors. Our purpose has been directed towards presenting a review of existent research on SS and to outline the space for the multi-paradigmatic examination of this behavioral phenomenon. Prior studies primarily explored the principles of psychoanalysis and neurobiology; however, the focus of our study was to elucidate the importance of other potentially promising approaches such as neuroaesthetics which can facilitate a better understanding of this rare psychological condition.

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