

## SPECIAL ARTICLES

# Did René Descartes Have Exploding Head Syndrome?

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René Descartes (1596–1650), “the Father of Modern Philosophy” and advocate of mind-body dualism, had three successive dreams on November 10, 1619 that changed the trajectory of his life and the trajectory of human thought. Descartes’ influential dreams have been of interest to a number of commentators including the famous neurologist and psychoanalyst Sigmund Freud. Descartes’ second dream in particular, in which he heard a loud noise in his head before seeing a bright flash of light upon awakening, has been discussed extensively. Commentators have employed psychoanalytic and medical explanations to account for Descartes’ unusual nocturnal experience. In this tradition, I propose that Descartes’ second dream was not a dream at all; rather, it was an episode of exploding head syndrome; a benign and relatively common parasomnia. I further suggest that Adrien Baillet’s account of Descartes’ experience constitutes the earliest description of exploding head syndrome, predating the account described by Silas Weir Mitchell in 1876 by nearly 200 years.

**Keywords:** René Descartes, exploding head syndrome, Sigmund Freud, history of sleep medicine, Silas Weir Mitchell, parasomnia

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## INTRODUCTION TO RENÉ DESCARTES

The French philosopher René Descartes (1596–1650) is considered to be the “Father of Modern Philosophy.” He was born in La Haye (now Descartes) in Touraine, France on March 31, 1596. His most celebrated philosophical contributions include the formulation of the modern mind-body problem, arguments for the existence of God and reviving the philosophical school of rationalism. In addition to philosophy, Descartes is esteemed for his contributions to mathematics, which include inventing analytical geometry and the Cartesian coordinate system. Descartes (Figure 1) is also considered to have been one of the key figures in the 17th century scientific revolution.

## DESCARTES’ DREAMS

On the night of November 10, 1619, Descartes had three unusually vivid and meaningful dreams. Upon awakening from the third dream, the 23-year-old Descartes interpreted them as confirming his life’s mission: to introduce a new philosophical method to the world.<sup>1</sup> Almost 18 years later, in his intellectual autobiography and first published work: *Discourse on the Method* (1637) (Figure 2), the source of the quotation “I think, therefore I am,” Descartes referred to this night as being uniquely significant for the development of his subsequent philosophical ideas.<sup>2,3</sup>

Descartes recorded his dreams and interpretations of them in a notebook entitled *Olympica*.<sup>3</sup> Although the Latin text is no longer extant, a complete and accurate French paraphrase has been preserved in Adrien Baillet’s biography of Descartes that was published in 1691.<sup>1</sup> Baillet’s account of Descartes’ dreams was subsequently translated into English by the medieval historian John F. Benton in 1979.<sup>4</sup>

Descartes considered the three dreams to have been inspired by God,<sup>1</sup> although several nonsupernatural interpretations of the dreams have also been proposed throughout the years.<sup>5–9</sup> In 1929, the Austrian neurologist and psychoanalyst Sigmund Freud suggested that the dreams were rooted in the subconscious conflicts of the young Descartes, rather than being products of divine revelation.<sup>6</sup> Interestingly, however, in contrast to both Descartes and Freud, a number of more recent commentators have expressed skepticism as to whether one of Descartes’ dreams was really a dream at all.<sup>5,8,9</sup>

## SECOND DREAM OR MEDICAL DISORDER?

Baillet recounts that Descartes laid awake for 2 hours pondering “the blessings and evils of this world” after his first dream on the night of November 10, 1619.<sup>4</sup> Just as Descartes fell asleep again:

“...immediately he had a new dream in which he believed he heard a sharp and shattering noise, which he took for a clap of thunder. The fright it gave him woke him directly, and after opening his eyes he perceived many sparkling lights scattered about the room. The same thing had often happened to him at other times...”<sup>4</sup>

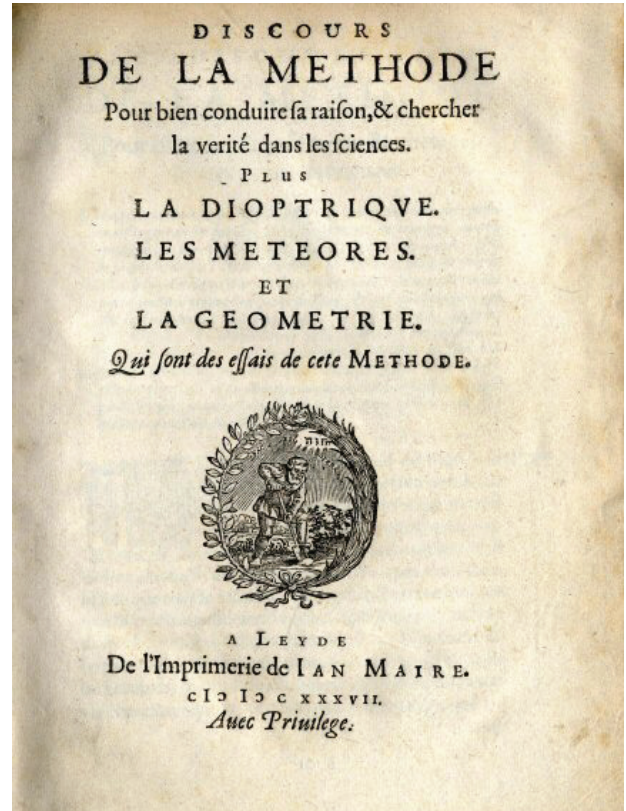
Although recurrent dreams are not especially uncommon, the brief nature and paucity of content in Descartes nocturnal experience bears very little resemblance to a typical dream. Furthermore, the occurrence of light flashes while Descartes’ eyes were open casts doubt as to whether he had truly been asleep. In the past decade it has been suggested that Descartes’ second dream actually represented the manifestation of a medical disorder: specifically, migraine aura,<sup>8</sup> or posttraumatic stress disorder (PTSD).<sup>9</sup>

**Figure 1**—Portrait of René Descartes.



This is believed to be a late copy of a 1649 portrait of Descartes by the Dutch painter Frans Hals. It is currently located in the Louvre Museum in Paris. The original Hals portrait is located in the Statens Museum for Kunst, Copenhagen.

**Figure 2**—Title page of the first edition of René Descartes' Discourse on the Method (1637).



The full name of the work is "Discourse on the Method of Rightly Conducting One's Reason and of Seeking Truth in the Sciences."

In a 2014 paper by Charlier et al., a group of medical anthropologists performed a CT scan of Descartes' skull and found what appeared to have been a giant benign tumor in the right ethmoidal sinus.<sup>8</sup> They speculated that the tumor may have led to an isolated episode of migraine aura characterized by sudden visual and auditory hallucinations on November 10, 1619: a clear reference to Descartes' second dream.<sup>8</sup> Although visual hallucinations such as flashing lights can occur in migraine aura, there is no indication from Baillet's description that Descartes ever experienced a headache.<sup>4</sup> And although it is true that a small minority of patients with chronic migraine can experience an aura without a headache (1% for males),<sup>10</sup> it is extremely uncommon for the aura to be associated with auditory hallucinations.<sup>11</sup> Fewer than 0.17% of patients presenting to a neurologist with any headache disorder report experiencing auditory hallucinations, and in these rare instances, the hallucinations are more likely to take the form of human voices than of loud undifferentiated sounds.<sup>11</sup> A final problem for this theory is that Descartes' recurrent experience seemed to occur exclusively in the twilight period between wakefulness and sleep. Such a pattern would be unusual for migraine attacks.

PTSD was suggested as an explanation for Descartes' second dream in a 2008 scholarly analysis of the dreams.<sup>9</sup> Although frightening and loud noises can occur in PTSD nightmares or flashbacks (eg, a mortar shell exploding), these nightmares will

invariably contain complex dream narratives and rich perceptual content in contrast to the fleeting loud noise experienced by Descartes.<sup>12-14</sup> Additionally, PTSD is not known to be associated with unformed visual hallucinations, leaving Descartes' "sparkling lights" unexplained. However, the main weakness of this theory is that no clear indication can be found in any of Descartes' writings or biographies to suggest that he had experienced a traumatic event sufficiently intense to predispose him to the development of PTSD.<sup>9,15</sup>

### EXPLODING HEAD SYNDROME

Compare Descartes' nocturnal experience to a recent case report of exploding head syndrome (EHS), a benign and relatively common, though highly underreported parasomnia<sup>16,17</sup>:

"A 60-year-old man reported of a sudden sensation of an explosion in the head with a bright flash of light just as he fell asleep [...] it was unexplained and frightening."<sup>18</sup>

Descartes' experience following his first dream meets the International Classification of Sleep Disorders, Third Edition (ICSD-3) diagnostic criteria for EHS: (1) a sudden loud noise in the head at the wake-sleep transition; (2) causing abrupt awakening and sense of fright; and (3) not associated with significant

complaints of pain.<sup>19</sup> Additionally, Descartes' perception of the noise as "thunder" parallels previous descriptions.<sup>20</sup> Up to 27% of individuals with EHS report the noise being accompanied by a flash of light,<sup>16,21</sup> and 90% report having intermittent episodes throughout their lives.<sup>16</sup> Baillet's account indicates that both associated features held true for Descartes.

Diagnosing Descartes with EHS would have been impossible until fairly recently, given that EHS only entered medical classification systems in 2005 with the publication of the International Classification of Sleep Disorders, Second Edition<sup>22</sup>; however, a small number of case reports had been reported in the medical literature prior to 2005.<sup>20,23</sup> The earliest description of EHS has been credited to the American neurologist Silas Weir Mitchell, who in 1876 described a patient with the complaint of a nocturnal sensation of a "pistol shot."<sup>23</sup>

Despite the fact that EHS is thought to affect at least 1 in 10 people,<sup>17,24</sup> the condition remains largely unknown to doctors.<sup>16,21</sup> This may be in part explained by patients' reluctance to report their symptoms, often stemming from the fear of being met with incredulity or disbelief.<sup>16,21</sup> Because EHS has been nearly invisible to the medical community, it has also been greatly underresearched. Little is known for certain about the risk factors for EHS, although high levels of stress appear to precipitate further episodes in those affected.<sup>21,23,25</sup> Recent case reports indicate that EHS is often concomitant with another sleep disorder,<sup>26,27</sup> most notably sleep paralysis,<sup>17</sup> and it may also be more common in undergraduate students.<sup>17</sup> The frequency of episodes is variable. Some have several attacks a night, whereas others have months between episodes.<sup>28</sup> Because EHS is a benign and self-limiting condition,<sup>25,29</sup> patient education and reassurance is usually all that is required.<sup>25,29</sup> Nevertheless, several case reports indicate that treatment with anticonvulsant medications can lead to a reduction in intensity or complete cessation of further episodes.<sup>30,31</sup>

The pathophysiology of EHS is unknown. One theory postulates that EHS is the result of a momentary disinhibition of the brainstem reticular formation, occurring during the transition from wakefulness to sleep.<sup>32</sup> A resulting paroxysm of neuronal activity in auditory and visual regions would explain the sudden perception of a loud noise and flash of light.<sup>32</sup> If so, EHS may represent a sensory variant of hypnic jerks.<sup>31</sup>

## CONCLUSIONS

The French philosopher René Descartes believed that his dreams on November 10, 1619 were of divine origin.<sup>1</sup> In 1929, Sigmund Freud pronounced the three dreams to be outflowings of Descartes' subconscious.<sup>6</sup> More recently, it has been suggested that Descartes' second dream represented the manifestations of migraine aura or PTSD.<sup>8,9</sup> However, neither condition can adequately account for Descartes' unusual and recurrent nocturnal experience as described.

Given that Baillet's description of Descartes' experience meets the ICSD-3 criteria for an EHS diagnosis,<sup>19</sup> and describes specific additional features of the condition, I propose instead that what Descartes considered to be his second dream was in actuality a paradigmatic episode of EHS, thus making

EHS the second retrospectively diagnosed sleep disorder in René Descartes based on descriptions from Baillet's biography, alongside delayed sleep-wake phase disorder.<sup>33</sup> Furthermore, I also suggest that the account recorded by Baillet in 1691 constitutes the earliest description of EHS, predating Silas Weir Mitchell's description in 1876 by almost 200 years.<sup>23</sup>

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## DISCLOSURE STATEMENT

The author reports no conflicts of interest.