

Socrates and Temporal Lobe Epilepsy: A Pathographic Diagnosis 2,400 Years Later

*†Osamu Muramoto and †Walter G. Englert

*Department of Neurology, Kaiser Permanente Northwest Division and Northwest Permanente Medical Group; and †Department of Classics, Reed College, Portland, Oregon, U.S.A.

Summary: *Purpose:* Some enigmatic remarks and behaviors of Socrates have been a subject of debate among scholars. We investigated the possibility of underlying epilepsy in Socrates by analyzing pathographic evidence in ancient literature from the viewpoint of the current understanding of seizure semiology.

Methods: We performed a case study from a literature survey.

Results: In 399 BCE, Socrates was tried and executed in Athens on the charge of “impiety.” His charges included the “introduction of new deities” and “not believing in the gods of the state,” because he publicly claimed that he was periodically and personally receiving a “divine sign,” or *daimonion*, that directed him in various actions. We found textual evidence that his *daimonion* was probably a simple partial seizure (SPS) of temporal lobe origin. It was a brief voice that usually prohibited Socrates from initiating certain actions. It started when he

was a child, and it visited Socrates unpredictably. Moreover, we found at least two descriptions of Socrates’ unique behavior that are consistent with complex partial seizures (CPSs). The fact that Socrates had been experiencing both SPSs and CPSs periodically since childhood makes the diagnosis of temporal lobe epilepsy (TLE) likely.

Conclusions: We hypothesize that Socrates had a mild case of TLE without secondary generalization. This is the first report in 2,400 years to present a pathographic diagnosis of TLE in Socrates based on specific diagnostic features in the ancient textual evidence. Our study demonstrates that the knowledge of modern epileptology could help understand certain behaviors of historic figures. **Key Words:** Temporal lobe epilepsy—Partial seizure—Socrates—Philosophy—Religion.

Socrates has been listed occasionally as one of many “famous epileptics”(1,2), but no evidence has been presented from the ancient sources to substantiate the claim. We analyzed pathographic evidence in ancient literature in light of the current understanding of seizure semiology.

METHODS

Socrates left no written documents. Some of his younger contemporaries, including Plato and Xenophon, are the main sources of information about the historic Socrates. We surveyed the dialogues of Plato and Xenophon’s four socratic writings for descriptions of Socrates’ behaviors and remarks that may suggest his unique neurologic and psychiatric condition. We analyzed those descriptions in English translations (3) and in the original Greek texts, paying close attention to meaning and usage. The numbers and letters attached to the fol-

lowing quotes from Plato represent Stephanus numbers, which are commonly used among classical scholars.

Case history

Since childhood, Socrates experienced recurrent visits of voices that he variously called “divine sign,” “spiritual sign,” “my prophetic power,” or, in Greek, the “*daimonion*.” He describes this experience:

This began when I was a child. It is a voice, and whenever it speaks it turns me away from something I am about to do
...(*Apology* 31d)

Whereas the “*daimonion*” addressed Socrates unexpectedly about trivial matters, it did not give him advice when he was facing serious decisions and might have expected some assistance. Socrates gives his reasons, based on the failure of his divine sign to appear, for now concluding that death is not an evil:

At all previous times, my familiar prophetic power, my spiritual manifestation, frequently opposed me, even in small matters, when I was about to do something wrong, but now that, as you can see for yourselves, I was faced with what one might think, and what is generally thought to be, the worst of evils, my divine sign has not opposed me, either when I left

Accepted October 15, 2005.

Address correspondence and reprint requests to Dr. O. Muramoto at Department of Neurology, Kaiser Permanente, Interstate Office East, 3550 N. Interstate Avenue, Portland, OR 97227, U.S.A. E-mail: muramoto@reed.edu

home at dawn, or when I came into court, or at any time that I was about to say something during my speech. Yet in other talks it often held me back in the middle of my speaking, but now it has opposed no word or deed of mine. (*Apology* 40a-b)

Elsewhere, he describes an example of a trivial appearance of the voice and how it affected his actions.

I was sitting by myself in the undressing room just where you saw me and was already thinking of leaving. But when I got up, my customary divine sign put in an appearance. So I sat down again, and in a moment the two of them, Euthydemus and Dionysodorus, came in . . . (*Euthydemus* 272e-273a)

In the *Phaedrus*, after Socrates delivers his first speech on love, he promises Phaedrus that he will not give any more speeches on the topic. Socrates is about to cross the river near where they are speaking and take his leave, when, all of a sudden, he receives the *daimonion*.

My friend, just as I was about to cross the river, the familiar divine sign came to me which, whenever it occurs, holds me back from something I am about to do. I thought I heard a voice coming from this very spot, forbidding me to leave until I made atonement for some offense against the gods. (*Phaedrus* 242b-c)

Socrates then renounces the first speech entirely as an “offense” and “false story.” This leads to the second speech, which is the antithesis of the first speech. However, Socrates seems to become confused and amnesic about this sudden conversion. After the two speeches, Socrates instructs Phaedrus about rhetoric, discussing two classes of words, more concrete words such as “iron” or “silver,” whose meanings people agree about, and more abstract words such as “just” or “good,” about which people differ.

SOCRATES: Well, now, what shall we say about love? Does it belong to the class where people differ or to that where they don’t? PHAEDRUS: Oh, surely the class where they differ. Otherwise, do you think you could have spoken of it as you did a few minutes ago, first saying that it is harmful both to lover and beloved and then immediately afterward that it is the greatest good? SOCRATES: Very well put. But now tell me this – I can’t remember at all because I was completely possessed by the gods. Did I define love at the beginning of my speech? PHAEDRUS: Oh, absolutely, by Zeus, you most certainly did. (*Phaedrus* 263c-d)

Although those episodic voices are mostly subjective experiences, objective descriptions of unusual behaviors are also reported by his friends. In the beginning of Plato’s *Symposium*, Socrates is walking to Agathon’s house for a dinner party (symposium). On his way, Socrates meets one of his close friends, Aristodemus, and urges him to join the party even though he was not invited. As they walk to Agathon’s house, Socrates lags behind, as if lost in thought. When Aristodemus arrives at Agathon’s home, Agathon greets him at the door and asks where Socrates is. Aristodemus looks around, and Socrates has vanished. Agathon sends a slave to search for Socrates, who returns and gives the following report:

“Socrates is here, but he’s gone off to the neighbor’s porch. He’s standing there and won’t come in even though I called him several times.” “How strange,” Agathon replied. “Go back and bring him in. Don’t leave him there.” But Aristodemus stopped him. “No, no,” he said. “Leave him alone. It’s one of his habits: every now and then he just goes off like that and stands motionless, where he happens to be. I’m sure he’ll come in very soon, so don’t disturb him; let him be.” (*Symposium* 175a-b)

Agathon then ordered the slaves to start the dinner.

TABLE 1. Semiology of Socrates’ temporal lobe epilepsy

Seizures	Textual Source	Semiological Description
Simple partial seizure	<ul style="list-style-type: none"> * Childhood onset, repetitive and recurrent * Voice commanding to stop Socrates’ action * Voice indicating Socrates’ duty * Irrelevant to the importance of context * Unexpected and abrupt occurrence * Brief duration * Felt unique to Socrates or rare to others 	<p><i>Apology</i> 31d, <i>Theages</i> 128d <i>Apology</i> 31d, <i>Theages</i> 128d <i>Apology</i> (<i>Xenophon</i>) 12 <i>Apology</i> 31d, 40a-c <i>Phaedrus</i> 242b-c, <i>Euthydemus</i> 272e-273a <i>Euthydemus</i> 272e-273a <i>Republic</i> 6 496c <i>Phaedrus</i> 242b-c, <i>Euthydemus</i> 272e-273a</p>
Complex partial seizure	<ul style="list-style-type: none"> * Habitual and sporadic occurrence * Socrates goes off and stands motionless * Unresponsiveness * Predictable and spontaneous recovery 	<p><i>Symposium</i> 174e-175c</p>
Amnesic confusion	<ul style="list-style-type: none"> * No memory of speech Socrates just delivered * He felt “completely possessed by the gods” * Occurrence close to an episode of SPS 	<p><i>Phaedrus</i> 263c-d</p>
Complex partial status	<ul style="list-style-type: none"> * Standing outside all day, no eating or sleeping * Appeared to try to solve a problem * Disconnected and unresponsive to environment * Onlookers were mystified 	<p><i>Symposium</i> 220c-e</p>

So, they went ahead and started eating, but there was still no sign of Socrates. Agathon wanted to send for him many times, but Aristodemus wouldn't let him. And, in fact, Socrates came in shortly afterward, as he always did – they were hardly halfway through their meal. (*Symposium* 175c)

One more description of a similar prolonged unresponsiveness is found in the *Symposium*. Alcibiades, one of Socrates' friends and admirers, talks about his experience with Socrates when they were on military campaign together years before.

One day, at dawn, he[Socrates] started thinking about some problem or other; he just stood outside, trying to figure it out. He couldn't resolve it, but he wouldn't give up. He simply stood there, glued to the same spot. By midday, many soldiers had seen him, and, quite mystified, they told everyone that Socrates had been standing there all day, thinking about something. He was still there when evening came, and after dinner some Ionians moved their bedding outside, where it was cooler and more comfortable[. . .], but mainly in order to watch if Socrates was going to stay out there all night. And so he did; he stood on the very same spot until dawn! (*Symposium* 220c-d)

DISCUSSION

Since childhood and throughout his adult life, Socrates experienced brief, recurrent, and stereotyped voices that were often triggered by certain actions such as speaking, standing up, and walking. Voices came irrespective of Socrates' expectation and the importance of the matter at hand. In *Phaedrus*, the visit of the voice was followed by a confused and amnesic period in which Socrates was unable to recall the speech he just delivered. We hypothesize that the voice is probably a simple partial seizure (SPS) of temporal lobe origin, possibly in the left lateral temporal lobe. The accompanying amnesic period might be a brief complex partial seizure (CPS) after an SPS. We could not find Socrates describing any specific words spoken by the voice. This suggests that the content of his SPS was rather vague. We speculate that the main reason Socrates may have interpreted the voice as directing him to change his course of action was that the episode was often associated with the initiation of certain actions, or possibly precipitated by exercise, movement, or speaking, rather than that the voice itself had any specific content.

He also had episodes of prolonged unresponsiveness such as the one he experienced after he walked briskly to the party in the *Symposium*. His friend testified that this was just "one of his habits," indicating this was also a recurrent symptom. The *Symposium* also states that a similar episode happened years before in the military camp. We hypothesize that these episodes were probably CPSs, and the prolonged episode could have been a complex partial status.

The presence of both SPSs and CPSs in Socrates suggests he probably had temporal lobe epilepsy (TLE).

The table summarizes our findings and interpretation. We could not find any indication that Socrates had a secondarily generalized seizure, nor could we find evidence of chronic progressive cognitive decline. We therefore suspect that Socrates' TLE was mild, stable, and relatively benign.

In the 2,400 years since Socrates' death, few comments have been made on epilepsy and Socrates. According to Temkin's history of epilepsy (1), the 17th century French physician Jean Taxil quoted Aristotle as mentioning Socrates as an epileptic among many others, including Empedocles and Plato (4). Taxil's thesis was that all "demoniacs" were epileptic, and he used the word "epileptic" very loosely. Taxil apparently misinterpreted a passage from the Aristotelian *Problems* (5), which listed those philosophers as "melancholic." Temkin concluded, ". . . there is no reason to assume that Empedocles, Socrates, and Plato suffered from epilepsy." Our study offers evidence for reconsidering this conclusion regarding Socrates. In modern epilepsy literature, Lennox (2) quoted *Symposium* 174d-175c in his textbook of epilepsy, commenting, "Was this temporal epilepsy or was Socrates only 'lost in thought'?" Lennox, however, stopped short of investigating this possibility and did not analyze all of the textual evidence.

The main reason that Socrates' TLE has never been recognized is that the notion of epilepsy has been associated almost exclusively with the "falling sickness," or generalized convulsive epilepsy. Hippocrates, a contemporary of Socrates, wrote a treatise on epilepsy titled *The Sacred Disease* (6), but he never considered the existence of a nonconvulsive form. TLE was recognized only toward the end of 19th century. Patients with mild cases of TLE, including Socrates, who only have sporadic SPSs and CPSs, and who seldom or never have a secondarily generalized seizure, were recognized only after EEG became available as a routine diagnostic tool in the late 20th century. Our study demonstrates that the knowledge of modern epileptology can help achieve a deeper understanding of history and the humanities.

REFERENCES

1. Temkin O. *The Falling Sickness; A History of Epilepsy from the Greeks to the Beginnings of Modern Neurology*. 2nd ed. Baltimore: Johns Hopkins University Press, 1971.
2. Lennox WG. *Epilepsy and Related Disorders*. Boston: Little, Brown, 1960.
3. Cooper JM, ed. *Plato: Complete Works*. Indianapolis: Hackett Publishing, 1997.
4. Taxil J. *Treatise on Epilepsy, a Malady Commonly Called, in the Provence Region, Infantile Gout*. [in French]. Lyon: Robert Renaud, 1602.
5. Aristotle. Book XXX Problems connected with thought, intelligence and wisdom. In: *Aristotle: Problems*. Cambridge: Harvard University Press, 1970.
6. Hippocrates. *The Sacred Disease*. Cambridge: Harvard University Press, 1923.