

Was Leonardo da Vinci Dyslexic?

Salvatore Mangione, MD^a Rolando Del Maestro, MD, PhD, FRCS(C), FACS, DABNS^b

^a Department of Medicine, History of Medicine Series, Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, Pa;

^b Department of Neuro-Oncology, Neurosurgical Simulation Research and Training Centre, Department of the Social Studies of Medicine, Montreal Neurological Institute and Hospital, McGill University, Montreal, Que, Canada.

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2019 marks the 500th anniversary of the death of Leonardo da Vinci, a man so talented in arts and science as to be arguably the most creative person who ever lived. His biographer, Giorgio Vasari, called him, “Largita da Dio”¹ (a gift from God), and half a millennium later we still ponder what made him so unique. The recent observation that Leonardo might have suffered from intermittent exotropia² sheds some light on his artistic genius, because ocular misalignment is often linked to talent in the visual arts, but also raises the possibility of dyslexia, because this too can result from misalignment.³

Difficulty with the written word was first suggested by Sartori in 1987,⁴ based on Leonardo’s peculiar orthography, too bizarre and error-ridden to be caused by his mirror writing, Tuscan dialect, or the inconsistency of Renaissance Italian.⁴ Sartori proposed *surface dysgraphia*, a developmental disorder associated with dyslexia and characterized by incorrect spellings that create *homophonic nonwords*—such as writing *rane* for *rain*. Almost half of Leonardo’s misspellings (consonant doubling; blending/splitting of words; letter substitutions/additions/deletions) are, in fact, homophonic nonwords (Table).

Leonardo’s poor writing has traditionally been attributed to his limited schooling, in turn explained by his being illegitimate. Yet, other illegitimate children, such as Renaissance genius Leon Battista Alberti, were often well educated. Vasari¹ writes that Leonardo would have made “great proficiency in the rudiment of letters” if only he had been less distracted by drawing, yet the real issue might have been dyslexia. Eventually, Leonardo’s poor school performance may have convinced his father to apprentice him to an artist rather than persisting with formal education. This was an unusual career choice for the first-born son of a wealthy Florentine notary, because artists were considered mere craftsmen at the lowest rung of society. Leonardo resented this connotation, and throughout his life never missed a chance to boast of the primacy of images over words, often blasting his academic critics as “fools” for accusing him of being a “omo senza lettere” (an unlettered man). Later he tried to teach himself Latin, but in vain. He would even fill a notebook, *The Codex Trivulzianus*, with a plethora of Latin words in a futile attempt to learn the language.⁵

Dyslexia may have channeled Leonardo’s focus into visual thinking,⁶ and thus provided the undercurrent of his creativity.⁷ It might also account for Leonardo’s brilliant intelligence and peculiar mirror writing.⁸ It may even explain why his notebooks were richer in pictures than words, a jumble of ideas that Leonardo intended to publish but never could. Ironically, they earned him scorn from academia, such as this barb by Baldassarre Castiglione: “One of the world’s foremost painters disdains the art where he truly excels and instead has set himself to study science. In that area, he has such strange and newfangled ideas that despite all his painting talents he can’t even depict them.”⁹

Ultimately, dyslexia and its social/emotional repercussions may help us understand Leonardo’s feeling of being an outsider, including his famous comment: “Salvatico e’ quello che si salva” (only the loner saves himself.)

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Requests for reprints should be addressed to Salvatore Mangione, MD, Department of Medicine, Sidney Kimmel Medical College at Thomas Jefferson University, 1001 Locust Street – Suite 309C, Philadelphia, PA 19107.

E-mail address: Salvatore.mangione@jefferson.edu

Table Example of Leonardos Misspellings in Forster III 30a. Brizio, p.115 MacCurdy, *Fables**

Excerpts from *Fables*, showing the original Italian by Leonardos, its correct Italian counterpart, and the English translation. Leonardos misspellings are italicized, while those that represent homophonic nonwords are bolded. The latter are incorrect spellings that remain phonologically plausible, such as two words blended into one or one word split into two, thus creating *nonwords* that are nonetheless phonologically similar to the target words or *homophonic*. The plethora of homophonic nonwords in Leonardos writings suggests surface dysgraphia, a disorder often associated with dyslexia.

Leonardos Italian	Correct Italian	English Translation
<p>Il <i>focbbo cō</i> <i>stēde</i> <i>Jacq</i> posta nel <i>lauegio djcēdo chollacqua</i> no merita n star sopra il <i>fo co</i> re <i>dellj elemēti eco</i> si v per forza dj <i>bolore</i> <i>chaciare lacqua della ve</i> <i>gio</i> n <i>Ōde</i> quella n per <i>fartj</i> onore <i>dubidjēja djsciē</i> de in basso e <i>anjega</i> il foco</p>	<p>Il fuoco contende lacqua posta nella pentola dicendo che lacqua non merita (di) star sopra il fuoco, il re degli elementi; e così vuole, per forza del (suo) bollire, scacciare lacqua dalla pentola. Onde quella per fargli onore dubbidenza, discende in basso e annega il fuoco.</p>	<p>The fire reproves the water placed in the cauldron, saying that the water does not deserve to stand above the fire, the king of the elements; and so it wishes by the violence with which it boils to drive away the water from the cauldron; this, therefore, in order to show it honour by obeying it, descends below and drowns the fire.</p>

(Modified from Pedretti C. *The Literary Works of Leonardo da Vinci*. A Commentary to Jean Paul Richters Edition, Volume 2. Berkeley and Los Angeles, CA: University of California Press; 1977)

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