

# Writing papers: literary and scientific

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This paper aims to summarize why I write, how to find a motif, and how to polish and finish a manuscript. For William Carlos Williams, practicing medicine and writing poetry were two parts of a single whole, not each of the other. The two complemented each other. Medicine stimulated Williams to become a poet, while poetry was also the driving force behind his role as a doctor. Alexander Pope, the 18th century English poet, wrote a poem entitled “The Epistle to Dr. Arbuthnot” that was dedicated to a friend who was both a poet and a physician. In this poem, we receive an answer to the questions of “Why do you write? Why do you publish?” Pope writes, “Happy my studies, when by these approv’d! / Happier their author, when by these below’d! / From these the world will judge of men and books.” When I write, I first reflect on whether I only want to write something for its own sake, like “a dog chasing its own tail,” instead of making a more worthwhile contribution. When my colleagues ask me, “Why do you write essays as well as scientific papers?” I usually answer, “Writing is a process of healing for me—I cannot bear myself unless I write.” When the time comes to sit down and put pen to paper, I remind myself of the saying, *festina lente* (in German, *Ohne Hast, aber ohne Rast*, corresponding to the English proverb “more haste, less speed”). If I am utterly exhausted when I finish writing, then I know that I have had my vision.

**Keywords:** Writing; Literature; Essay

## INTRODUCTION

In 2016 I visited the National Portrait Gallery and had the opportunity to view an exhibition, entitled “Celebrating Charlotte Brontë: 1816–1855,” where I saw a portrait painted in color by the Brontë sisters’ brother Branwell that portrayed all three sisters. I saw that painting again at the National Museum of Korea in 2021. The three sisters all died before they reached the age of 40: Charlotte at the age of 38 in 1855, Emily at the age of 30 in 1848, and Anne at the age of 29 in 1849. Despite their short lives and the fact that they had no children, the literary DNA of the Brontë sisters continues to be replicated through their ongoing

inspiration for countless readers.

Just like the Brontë sisters, an exemplary trio of great authors, our lives as physicians and surgeons will also come to an end. How, then, can we replicate our academic DNA as researchers and surgeons? I believe that scientific papers are the route through which our knowledge can become immortal [1].

This point leads to another question: how can we write a paper that will last for the ages? An immortal paper is one whose readers love and remember it over time. For surgeons to remember and love a paper, it must be useful—that is, it must assist in real-world patient care, in settings like the clinic, ward, or operating room. This is the purpose of the academic literature in the field

of surgery: to help patients.

I think there are commonalities between literary authors and medical doctors who write scientific papers. This paper aims to summarize why we write, how we find a motif, and how to polish and finish a manuscript.

## WHY WRITE?

Royalty and nobility flocked to the funeral of Sir Isaac Newton, over which Alexander Pope (1688–1744), Newton’s friend and colleague, presided. Pope delivered an inspiring injury and then sprinkled dirt on Newton’s grave. In 1734, Pope wrote a poem entitled “The Epistle to Dr. John Arbuthnot,” which he dedicated to a friend of his who was both a poet and a physician. This poem memorialized their friendship, and it was published 1 year later—in the year of Arbuthnot’s (1667–1735) death [2]. In this poem, we find the answer to questions that I frequently receive from my pupils and friends: “Why do you write? Why do you publish?”

Happy my studies, when by these approv’d!  
Happier their author, when by these belov’d!  
From these the world will judge of men and books,  
Not from the Burnets, Oldmixons, and Cookes [3].

William Carlos Williams (1883–1963) was a Puerto Rican-American physician, author, and poet. He worked as a pediatrician and a general physician by day but was also a painter and a successful poet—avocations that he practiced at night. People asked him, “How do you have time to write while practicing medicine? You must be superhuman, with at least two sources of energy.” He replied, “The two are two parts of one, not each of the other. The two complement each other. When one part wears me out, the other part makes me rest.” For Williams, medicine stimulated him to become a poet, while poetry was also the driving force behind his role as a doctor, as exemplified by his confession stating, “I cannot practice medicine without poetry” [4].

The human brain is like molten bronze that must be poured into a mold. When a person receives inspiration, he or she should write down or draw those ideas before they vanish. This is why Dr. Williams seized his ideas in a single moment [5].

*Jean-Christophe* is a famous novel written by Romain Rolland that Gilbert Cannan translated into English. The novel presents the life of Jean-Christophe Krafft, a genius composer from Germany who is a fictionalized portrayal of Beethoven. Early in Jean-Christophe’s life, he was strongly influenced by his uncle,

Gottfried. After composing a piece, Jean-Christophe shared it with his uncle. Gottfried quietly listened to the composition and then asked Jean-Christophe why he felt the need to add to the world’s extant store of music.

“Why make them? There are enough [songs] for everything. [. . .]”  
“To be a great man!” [. . .]  
“You want to be a great man?”  
“Yes,” [. . .]  
“What for?” [. . .]  
“To make beautiful songs!” [. . .]  
“You want to make beautiful songs, so as to be a great man; and you want to be a great man, so as to make beautiful songs. You are like a dog chasing its own tail” [6].

Seized by the desire to demonstrate to his uncle what an artist he was, Jean-Christophe showed Gottfried his compositions.

[. . .] Why did you write them?”  
“I don’t know, [. . .] I wanted to write something pretty.”  
“There you are! You wrote for the sake of writing. You wrote because you wanted to be a great musician, and to be admired. You have been proud [. . .] Music must be modest and sincere—or else, what is it? Impious, a blasphemy of the Lord, who has given us song to tell the honest truth” [6].

Later, Gottfried states, “It is well enough written, but it says nothing. [. . .] You see, my boy, everything that you write in the house is not music. Music in a house is like sunshine in a room. Music is to be found outside where you breathe God’s dear fresh air” [6].

When writing literary or scientific papers, I reflect on whether I only want to write something of interest to myself for its own sake, like the young Jean-Christophe, instead of making a more worthwhile contribution. Similar to the role that Uncle Gottfried played for young Jean-Christophe, we as academics need “mentor-reviewers” capable of pointing out when we resemble “a dog chasing its own tail” (writing for its own sake) and enlightening authors with less experience by helping them focus on the information that they truly hope to convey to readers [7].

Another example of an author-physician is Anton Chekhov (1860–1904), who wrote in a letter to a friend that “I feel more confident and more satisfied with myself when I reflect that I have two professions and not one; my lawful wife and my mistress. When I get tired of one I spend the night with the other. Though it is irregular, it is less boring this way, and besides, nei-

ther of them loses anything through my infidelity.” He added, “Medicine is my lawful wife, literature is my mistress” [8]. Chekhov practiced as a medical doctor during the majority of his literary career.

In the surgical field, surgeons and researchers develop numerous novel ideas and technical procedures. Research on its own does not strengthen science; instead, the field is only advanced through research articles that are published in scientific journals and read by members of the scientific community. Scientists have several reasons to write papers: they may be inspired to share their knowledge or skills with a wider audience, or they may need to publish in order to be promoted by the university administration. The phrase “publish or perish” aptly describes the pressure that academic researchers face to publish work constantly in order to advance or even maintain one’s career.

My colleagues sometimes ask me, “Why do you write essays as well as scientific papers?” I usually answer, “Writing is a process of healing for me—I cannot bear myself unless I write.”

## FINDING A MOTIF

Improvising a motif is the single largest challenge in writing. If I cannot write the first line of a piece, I have a ritual to fix the situation. I go to the kitchen and open the refrigerator, or I leave the house, walk along the street, or sit to reflect on a park bench. Nonetheless, sometimes an idea simply does not come to mind [9].

There are some historical examples of how authors found motifs for their writing. Herman Melville (1819–1891), who later became famous as the author of *Moby-Dick*, knocked on the door of old Thomas Nickerson’s (1805–1883) house. Melville paid him a sum of money and then wrote down what Nickerson told him based on his memories. Nickerson told him a story about a whaling ship from Massachusetts (the *Essex*) that sank after being attacked by a sperm whale in the Pacific Ocean in 1820. Most of the crew then died from starvation, and only eight crew members survived. As their conversation approached its end, Nickerson asked Melville whether he would write down everything that Nickerson told him. They agreed that Melville would write a novel “inspired” by these facts, which became *Moby-Dick*. In *Moby-Dick*, the sole survivor of a whaling ship presents the story of his captain’s obsession to hunt the white whale that caused him to walk with a crutch. *Moby-Dick* arose from the combining of Nickerson’s experience as a whaler and Melville’s narrative skills [9].

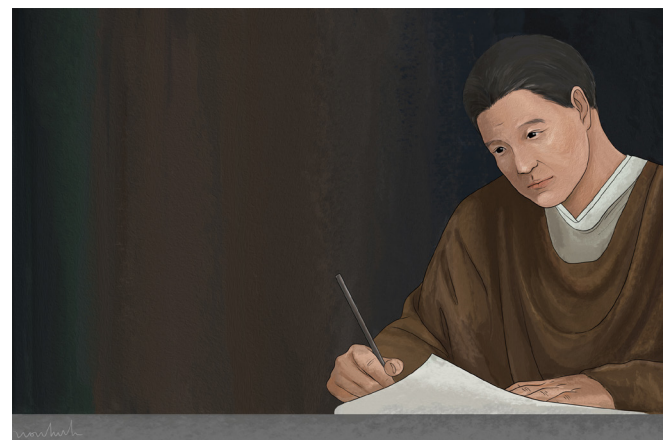
The evangelist Luke provides another instructive example. Following the Great Fire of Rome in 64 AD, Emperor Nero

launched persecutions of Christians. Paul, as their most prominent leader, was arrested, subjected to trial, and sentenced to death. As Paul awaited execution in his prison cell, Luke took the risky step of visiting Paul. Together with Paul, Luke composed a written narrative of their conversions and missionary travels, and this composition eventually became the “Acts of the Apostles” in the Bible (Fig. 1) [10]. This narrative encouraged Christians who faced possible martyrdom. If Luke had not recorded these conversations in written form or if his followers had not copied the text, the New Testament would contain only 26 books, not 27, and we would not know about the apostles’ activities and ministry following Christ’s resurrection [10].

The most important source of a motif is the author’s own experience in the field. Recently, I joined the Medical Support Team of the Korean Medical Association for coronavirus disease 2019, where I served for 24 days. I worked at the quarantine center, where I sampled specimens from the nose and throat and made decisions for the admission of mild cases. During that period, I wrote four essays that would not have been possible without field experience.

## CREATIVITY AND IMAGINATION

Through creativity, something novel and valuable is formed. Literary figures and surgeons both require creativity. In the late 1800s and early 1900s, the scientists Hermann von Helmholtz (1896) and Henri Poincaré analyzed creative processes, and their work was followed that of the theorist Graham Wallas. In his monograph entitled *Art of Thought* (1926), Wallas described a five-stage model of the process underlying creative insights: (1)



**Fig. 1.** St. Luke writing down the conversations of St. Paul, which became the “Acts of the Apostles.” Drawn by Hye Won Hu, MFA. Adapted from Hwang [10] with permission from Wolters Kluwer Health, Inc.

preparation (preparatory work focusing an individual’s mind on a problem and exploring the dimensions of the problem); (2) incubation (internalization of the problem into the unconscious mind, during which process nothing appears to be taking place to an external observer); (3) intimation (the creative person experiences a “feeling” that a solution is on the way, although this could be considered a sub-stage); (4) illumination or insight (a creative idea bursts forth from preconscious processing into conscious awareness); and (5) verification (conscious verification, elaboration, and application of the idea) (Fig. 2) [11,12]. Most types of art (e.g., writing, visual art, or music) may follow this four-stage or five-stage creative process [12].

Writing also requires imagination, which refers to the ability to form mental concepts, sensations, and images without direct perception through hearing, sight, or other senses. Denis Diderot (1713–1784), an Enlightenment philosopher who edited the *Encyclopédie* (1772), believed that imagination is vital to “adorn and crown” the truth, which reason and philosophy reveal. The power of imagination is a commonality shared by literary figures, including poets, and surgeons. Poets write and recite poems to express their imagination, whereas surgeons do so by changing the living bodies of patients through operations, which is a more difficult task [13].

**STARTING AND FINISHING WRITING**

I find the most challenging step of writing a new paper to be the beginning of the introduction and the initial part of the discussion. I sometimes feel as if I am facing a wall with no door. In these moments, I think of a painting entitled “Saint Matthew and the Angel,” which Caravaggio painted in 1602 (Fig. 3) [14]. In this composition, Saint Matthew holds a pen and an angel moves his hand to write the Gospel. Of course, it would be exceedingly auspicious if I were visited by an angel who would grant me a flash of inspiration or guide my hand as I write the part of a draft where I felt blocked! These considerations lead me to wish that I were a genius with creative brilliance [14].

Research takes place in a similar sequence (study, approval, and then writing) to that of love (study, approval, and then love) [1]. We must have a sense of curiosity and seek out earlier work. If we cannot find the answer to our question from the papers published by other researchers, then we can start our work. Papers must contribute something novel (in German, *etwas neues*).

Naturally, the first author to publish a certain finding deserves credit. Therefore, we must make haste (in Latin, *festina*) when writing a manuscript and submitting it to a journal. While pre-



**Fig. 2.** Creative process of the artist or literary writer. Adapted from Hwang [12] with permission from Wolters Kluwer Health, Inc.





**Fig. 3.** “Saint Matthew and the Angel” by Caravaggio (1602). Adapted from Hwang [14] with permission from Wolters Kluwer Health, Inc.

paring a manuscript that I plan to submit, I remember an epigram beloved by Augustus, the Roman emperor: *festina lente* (make haste slowly; more haste, less speed). Augustus disapproved of rash decision-making among his officials, prompting him to encourage them with this phrase. The anchor-dolphin symbol in Erasmus’s book derives from a Roman coin; in this symbol, the anchor symbolizes the slow pace of deliberation and the dolphin represents the rapidity of skillful performance (Fig. 4) [15]. The German authors Goethe and Schiller repurposed this epigraph: “*Ohne Hast, aber ohne Rast*” (“without haste, but without rest”) (*Zahme Xenien*, sect. 2, no. 6, l. 281) [15,16].

Rushing the process of writing and submitting leads to mistakes, and the long-term results may be poorer than expected. In Buddhist terms, it is best to write in a state of flow, characterized by full engagement and the absence of a sense of time passing (freedom from all thought and ideas). When I sit down at my desk to write, I always remind myself, “*festina lente*.”

A difficult step in writing is finishing—placing the final touch. If inspiration fails to strike me for finishing the last part of a paper, I remember the end of *To the Lighthouse*, a well-known nov-



**Fig. 4.** Dolphin-anchor symbol, on a Roman coin from 80 AD. Adapted from Hwang [15] with permission from Wolters Kluwer Health, Inc.

el written by Virginia Woolf (1882–1941).

The novel closes with the following paragraph: “Quickly, as if she were recalled by something over there, she turned to her canvas. There it was—her picture. Yes, with all its greens and blues, its lines running up and across, its attempt at something. It would be hung in the attics, she thought; it would be destroyed. But what did that matter? She asked herself, taking up her brush again. She looked at the steps; they were empty; she looked at her canvas; it was blurred. With a sudden intensity, as if she saw it clear for a second, she drew a line there, in the center. It was done; it was finished. Yes, she thought, laying down her brush in extreme fatigue, I have had my vision” [17].

When I am sitting at the keyboard and looking at the screen, which appears blurry due to eye strain after I have stared at it for a long time, I try to focus my eyes on the finale of the manuscript. If I finally finish it in a state of extreme fatigue, then I can say, “I have had my vision” [18].

## NOTES

### Ethical statements

Not applicable.

### Conflicts of interest

The author has no conflict of interest to declare.

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