

# (Onward!) Essay Reviewing Principles

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An essay is a clear and compelling piece of writing about topics important to the software community.

An essay can be an exploration of the topic and its impact, or a story about the circumstances of its creation; it can present a personal view of what is, explore a terrain, or lead the reader in an act of discovery; it can be a philosophical digression or a deep analysis. It can describe a personal journey, perhaps the one the author took to reach an understanding of the topic. For Onward!, the subject area—software, programming, and programming languages—is interpreted broadly and can include the relationship of software to human endeavors, or its philosophical, sociological, psychological, historical, or anthropological underpinnings.

## Read once for sense

It's important to get a sense of what the essay is before you judge it. The essay might be an argument, a personal journey toward understanding, a proposed way of seeing a part of the world around computing, a technical retrospective, a way to explain a difficult concept, or something I haven't thought of yet. With a standard technical paper, we understand—before we even start to read—what we are likely to see with only the details of the subject matter in question. An essay is typically not trying to advance scientific or engineering knowledge at the technical level, but—if it aims at something like that—at the philosophical or at some kind of meta level.

I've used the phrase “an essay . . . is trying,” and it's not an accident. The author of an essay has some idea of what he or she is trying to say, but in a real sense the essay has the final word on what that is. This might seem odd, but it is a common observation in the writing community. Some examples:

*I write entirely to find out what I'm thinking, what I'm looking at, what I see and what it means. What I want and what I fear.*

—Joan Didion, *Why I Write*

*You may wonder where plot is in all this. The answer . . . is nowhere . . . . I believe plotting and the spontaneity of real creation aren't compatible . . . . I want you to understand that my basic belief about the making of stories is that they pretty much make themselves. The job of the writer is to give them a place to grow.*

—Stephen King, *On Writing*

*But during my very early writing, certainly before I'd published, I began to learn characters will come alive if you back the fuck off. It was exciting, and even a little terrifying. If you allow them to do what they're going to do, think and feel what they're going to think and feel, things start to happen on their own. It's a beautiful and exciting alchemy. And all these years later, that's the thrill I write to get: to feel things start to happen on their own.*

*So I've learned over the years to free-fall into what's happening. What happens then is, you start writing something you don't even really want to write about. Things start to happen under your pencil that you don't want to happen, or don't understand. But that's when the work starts to have a beating heart.*

—Andre Dubus III, *By Heart*

*I have grown to understand narrative as a form of contemplation, a complex and seemingly incongruous way of thinking. I come to know my stories by writing my way into them. I focus on the characters without trying to attach significance to their actions. I do not look for symbols. For as long as I can, I remain purposefully blind to the machinery of the story and only partially cognizant of the world my story creates. I work from a kind of half-knowledge. In the drafts that follow, I listen to what has made it to the page. Invariably, things have arrived that I did not invite, and they are often the most interesting things in the story. By refusing to fully know the world, I hope to discover unusual formations in the landscape, and strange desires in the characters. By declining to analyze the story, I hope to keep it open to surprise. Each new draft revises the world but does not explain or define it. I work through many drafts, progressively abandoning the familiar. What I can see is always dwarfed by what I cannot know. What the characters come to understand never surpasses that which they cannot grasp. The world remains half-known.*

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*There can be no discovery in a world where everything is known. A crucial part of the writing endeavor is to practice remaining in the dark.*

—Robert Boswell, *The Half-Known World . . .*

*I am writing this essay because I am puzzled.*

—Richard P. Gabriel, “in the control room of the banquet”

I believe this phenomenon is what makes writing essays hard for computer scientists. Computer scientists are used to a genre that is totally known, and they know how to fill in the blank parts of the template. This is not to say that writing technical papers is simple or mindless—only that in such writing the nature of the piece is not struggling to run away.

## Read again for value

Once you know what the essay is trying to be you are in a position to start making judgments. Sometimes you need to let the essay sit in your head for a while before you judge. Here are the questions I tend to address:

- Did I come away knowing something new or with a new way of looking at things?
- Is it likely that others in the community would also come away with similar thoughts?
- Is this a piece that the community would be better off having than not?

In close proximity to these questions are questions of voice, confidence, and trust:

- Did I feel in the presence of a trustworthy guide?
- Was the voice appropriate to the material; did it help get the points across?
- Did the guide make me feel safe and confident in the journey?
- Did it feel like a journey?

## Does it matter who the author is?

I am neither a detractor nor a proponent of blind reviews where the author's identity is hidden. In scientific and technical publications, some believe that an unknown researcher is at a disadvantage—that only the ideas matter. In an essay the question is not as clear. Would it make sense to take an essay on typesetting more seriously if it were written by Don Knuth? Perhaps. What about an essay on why monads are a bad idea written by Philip Wadler?

For Onward! Essays we might give the authors the choice of whether they are identified.

## Creative Nonfiction techniques

It doesn't happen often but some accepted Onward! essays have used techniques from creative nonfiction. Creative nonfiction is a genre that uses techniques from fiction—from stories, from novels—to further the goals of the nonfiction. The first well-known instance of this was the nonfiction novel “In Cold Blood,” by Truman Capote, which traced the murders of the Clutter family in Holcomb, Kansas, in 1959, along with the subsequent investigation, trial, and executions of the killers. (It also happens to be the book that made me want to become a writer.)

Some examples of essays using creative nonfiction techniques are Tomas Petricek's “Miscomputation in software: Learning to live with errors” and David West's “The Cuban Software Revolution: 2016–2025.” Petricek's essay appeared in the first Art, Science, and Engineering of Programming conference in 2017, and its topic was the treatment of software errors. It was largely in the form of a dramatic dialogue between a teacher and a number of students who were proponents of different views of errors and how to handle them, as well as comments on what error handling teaches us about programming paradigms. This form was also used by the philosopher Imre Lakatos in “Proofs and Refutations,” which argues for, roughly speaking, the fallibility of mathematics. It is a Socratic dialog like the ones Plato used. And Petricek uses the technique to frame the different points of view in a nontainted way—by using apparently sincere proponents of the ideas.

David West uses a fictional setting and the format of a dialog or play to frame his argument, which is that there is a style or approach to writing software that is better than what is used in commercial-centric development methodologies. The framing includes the backdrop of Cuba in the near future, which has (miraculously) become a dominant software machine in Central and South America for having adopted the methodology West describes, and the reason for Cuba is its isolation from the rest of the world and the resulting need to make old and inferior technology work. Thus the setting forms an important metaphor for the ideas presented. Also, Cuba itself is a character which is portrayed as more relaxed and human than, for example, Silicon Valley. It is worth showing the first couple of paragraphs to show the depth of use of fictional techniques:

*Writer: It was dark and cool inside the Bodequita.*

*The darkness, because not a single ray from the blinding Caribbean sun made it past the heavy curtain separating the bar from the entry vestibule and the street.*

*The coolness, ephemeral and mostly illusory—vestiges of early morning cold emanating from the walls and floor curled in response to the lazy twirling of the fans on the ceiling. Faint breezes, cool only in contrast to the broiling temperature outside, caressed my face and arms.*

—David West, *The Cuban Software Revolution: 2016–2025*

This essay was presented at Onward! 2015—performed as a play.

If such techniques serve the essay by framing the ideas well or by providing metaphorical support for them, I believe they should be accepted—but only if done well, in service of the ideas, and if not distracting.

## Is it an essay?

This is a central question to answer while judging a submission. This also is where reviewers have significant difficulties. Here are some potentially problematic areas:

**Wrong!:** Essay = “A scientific investigation, . . .

. . . to be judged according to the standards in our field.” This might seem over-obvious, but it is a quote from an essay reviewer made during a PC comment period in 2018. Because we are so used to reviewing-as-usual, we might be tempted to subconsciously lapse into this mode.

**Wrong!:** Good Essay = Lousy OOPSLA / Onward! Paper

Some in the past have held that a good essay is just a lousy OOPSLA or Onward! Paper, lousy for having poor validation or being like a research proposal. This seems to be a less prevalent view these days, but it’s one to watch out for.

**Wrong!:** A Good Essay is a high-school theme

An essay may or may not have a conclusion, but it must provide some insight either directly or indirectly stated. The key characteristic of a successful essay is that it shows a keen mind coming to grips with a tough or intriguing problem in such a way that, as Virginia Woolf wrote, “it explains much and tells much.” [from the preface of “Memoirs of a Working Woman’s Guild”]

An essay does not need to state and march devotedly toward an explicit conclusion. The following is from Robert Atwan’s foreword to “The Best American Essays 1998”:

*Years ago, when I was instructing college freshmen in the humble craft of writing essays—or “themes,” as we called them—I noticed that many students had already been taught how to manufacture the Perfect Theme. It began with an introductory paragraph that contained a “thesis statement” and often cited someone named Webster; it then pursued its expository path through three paragraphs that “developed the main idea” until it finally reached a “concluding” paragraph that diligently summarized all three previous paragraphs. The conclusion usually began, “Thus we see that . . .” If the theme told a personal story, it usually concluded with the narrative cliché, “Suddenly I realized that . . .” Epiphanies abounded.*

*What was especially maddening about the typical five-paragraph theme had less to do with its tedious structure than with its implicit message that writing should be the end product of thought and not the enactment of its process. My students seemed unaware that writing could be an act of discovery, an opportunity to say something they had never before thought of saying. The worst themes were largely the products of premature conclusions, of unearned assurances, of minds made up. As Robert Frost once put it, for many people thinking merely means voting. Why go through the trouble of writing papers on an issue when all that’s required is an opinion poll? So perhaps it did make more sense to call these productions themes and not essays, since what was being written had almost no connection with the original sense of “essaying”—trying out ideas and attitudes, writing out of a condition of uncertainty, of not-knowing. “Sleep lingers all our lifetime about our eyes,” says Emerson, “as night hovers all day in the boughs of the fir-tree.”*

*The five-paragraph theme was also a charade. It not only paraded relentlessly to its conclusion, it began with its conclusion. It was all about its conclusion. Its structure permitted no change of direction, no reconsideration, no wrestling with ideas. It was—and still is—the perfect vehicle for the sort of reader who likes to ask: “And your point is . . .”*

—Robert Atwan

Note that this quote refers to the derivation of the English word “essay,” which derives from the French infinitive “essayer,” “to try” or “to attempt.”

**Wrong!:** An essay is a paper that advances an argument

This is a special case of the high-school theme problem. An essay may advance an argument, but it is not required. An argument typically requires a conclusion, but conclusions are not required for an essay. The reader must end up believing something worthwhile came out of the experience of reading the essay, even if it cannot be summarized tersely in a crisp statement. Here is how Petricek summarized his essay at its end:

*In this paper, we discussed a wide range of ideas about programming through the perspective of program errors or miscomputations. This point of view provides a new way of defining programming paradigms and thinking about software more generally.*

—Tomas Petricek

To be clear: arguments and conclusions are fine; simply not required in an essay.

## Writing that brings tears to your eyes

I happen to believe in beautiful writing, and for me, an essay must have beautiful writing. This is my bias. In the past I have pushed for John Gardner's idea of the vivid and continuous dream from fiction to be adapted to nonfiction and technical writing:

*In the writing state—the state of inspiration—the fictive dream springs up fully alive: the writer forgets the words he has written on the page and sees, instead, his characters moving around their rooms, hunting through cupboards, glancing irritably through their mail, setting mousetraps, loading pistols. The dream is as alive and compelling as one's dreams at night, and when the writer writes down on paper what he has imagined, the words, however inadequate, do not distract his mind from the fictive dream but provide him with a fix on it, so that when the dream flags he can reread what he's written and find the dream starting up again. This and nothing else is the desperately sought and tragically fragile writer's process: in his imagination, he sees made-up people doing things—sees them clearly—and in the act of wondering what they will do next he sees what they will do next, and all this he writes down in the best, most accurate words he can find, understanding even as he writes that he may have to find better words later, and that a change in the words may mean a sharpening or deepening of the vision, the fictive dream or vision becoming more and more lucid, until reality, by comparison, seems cold, tedious, and dead.*

—John Gardner, *On Becoming a Novelist*

Here is my take on it from decades back:

*Whether you are writing fiction or non-fiction, good and careful writing has two important qualities: it must be vivid and it must be continuous. I have borrowed these terms from John Gardner, who wrote of them in the context of fiction writing, but I think they are appropriate in non-fiction writing as well.*

*In a vivid piece of writing the mental images that the writer presents are clear and unambiguous; what the writer writes about should appear in our 'mental dream' exactly as if we ourselves were thinking the thoughts he is describing. When the writing produces this clear image we can absorb what he writes with little effort.*

*In a continuous piece of writing there are no gaps or jumps from one topic to another. The image that is produced by the writing does not skip around. In non-fiction, especially in technical writing, the problems and questions we have about the subject are answered as soon as we formulate them in our minds. That is, as we read a piece of technical writing we are constantly imagining the details of the subject matter. Sometimes our image is confused because we are not sure how some newly presented detail fits in, or we are uncertain of the best consistent interpretation. At this point the writer is obligated to jump in and settle the matter or provide a clarification. This way we do not have to stop and think, or go back to re-read a passage or some passages.*

*Insofar as our image must be vivid, it must also be continuous. If our image is discontinuous it cannot be vivid—it is blurred or muddy at the point of discontinuity. Similarly, if our image is not vivid it must be discontinuous—we are apt to stop and wonder about the source of blurriness, and at that point our image stops being continuous.*

—Richard P. Gabriel, *Deliberate Writing*

However, writing that is beautiful might not serve the essay well. In those cases, the writing should serve the essay and not drive it.

## Trivialities

Although the practice has become more sophisticated or, shall we say, suave over the years, a common practice in computer science research papers is to put the punchline at the start of the paper and to describe early on all the results and where they will be presented in the paper—a sort of roadmap. Articles talking about how to write research papers emphasize this practice and some talk about why it makes sense. And it does make sense for purely technical / scientific papers, but it doesn't necessarily make sense for essays. The punchline comes where the punchline needs to be.

One common view is that an essay should move forward like a predator toward its conclusion—this view comes from the five-paragraph theme misconception. Some points need to sink in before they are deeply understood, and sometimes a number of supporting arguments or thoughts need to come together before a point can be properly made and understood. An episodic approach can help here.

Episodic writing proceeds by telling a little bit of the story, then switching for a while to another aspect of the overall story. Imagine a story in which two remarkable characters come together for an epic confrontation after each has had a series of important and difficult challenges. One way to tell this story is to tell the entire story of one character from start to confrontation, then tell the entire story of the other character from start to confrontation, and finally to tell the story of the confrontation. If the two stories are long, the first one might be forgotten by the final confrontation; and sometimes an episode from one character's story is best told at the same time an episode from the other character's story is told.

There are many such nonlinear structures in narrative: an envelope in which the start of the story is similar to the end of the story (“I met her on a beach on a cloudy day . . . . Later, years after she left me and started her dental floss farm in Montana, I went to that beach on a cloudy day”). Another structure is a flash forward where the final surprising scene is previewed at the start of the story. It wasn’t written that way, but Moby Dick could have started like this:

*On the second day, a sail drew near, nearer, and picked me up at last. It was the devious-cruising Rachel, that in her retracing search after her missing children, only found another orphan.*



*Call me Ishmael. Some years ago—never mind how long precisely—having little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world . . . .*

When reviewing an essay, determine whether the structure supports the material. Did the structure make things easy to grasp? Did it help propel you forward? Did you feel as though in the presence of a worthy guide?

Similarly, essays don’t need descriptive section headings or summaries of the material at the start of sections unless such things are important to the essay. This sounds like I am talking about not bothering to be helpful and supportive to the reader, but I am trying to suggest ways to achieve the continuous dream, which I believe is as important or more important than such trivial signposts.

On the other hand, over-supplying section headings and summaries can be about undercutting the material or being an unreliable narrator: irony, sarcasm, etc. A good essayist might be able to take advantage of techniques like this. Such techniques—common in contemporary writing—are dangerous for the sorts of essays that are likely to work best for our community, but the use of these techniques should not lead to an automatic rejection.

Length: Reviewers can ordinarily read short essays to the end, but longer ones can pose problems. You should read only as far as interest in the essay continues, and your review can talk about why you stopped reading where you did. If you couldn’t finish the essay, there are likely lots of readers in our community who won’t be able to finish either. This is important information.



Perhaps the best advice can be found in a now-forgotten, originally provocative advertising slogan from the 1960s:

*Want them to be more of a reader? Try being more of a writer.*  
—paraphrase from a perfume commercial from the 1960s