ON WRITING

M. E. Kabay, PhD, CISSP-ISSMP[1]

http://www.mekabay.com/methodology/writing.pdf

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[1] Professor of Computer Information Systems, School of Business and Management; Norwich University, Northfield, Vermont. E-mail: mailto:mekabay@gmail.com . For more information about the author see http://www.mekabay.com/cv/index.htm .

Preface

The Master of Science in Information Assurance (MSIA)[2] is an online graduate program taught over 18 months in six 11-week seminars that require students to study assigned readings, participate in online discussions, and write one short (~1,000 word) essay a week based on research in their own place of employment or on their chosen industry . At the end of the seminar, students also submit a more extensive term paper (for their employer) or white paper (appropriate for their industry). I have answered questions from students and faculty about the amount and style of writing in our program and have now compiled some of the resulting essays (originally posted on the MSIA Graduate Portal and in mailings to the students) into this document.

I hope that undergraduate and high-school students – and indeed anyone interested in expository writing – will also find the ideas interesting, stimulating and useful. However, these ideas (with the exception of standard rules of grammatical correctness) do not generally apply to creative writing, so English Majors may want to use the document as the subject of their own expository essay explaining the profound differences between writing for art and writing for technical purposes.

For a checklist of common errors of grammar and usage, see "Frequently Corrected Errors" http://www.mekabay.com/methodology/fce.pdf .

Plainfield, Vermont
18 May 2018

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2   http://www.graduate.norwich.edu/infoassurance/

CONTENTS

1   Organizing Your Thoughts

S ometimes we find that students write their essays without planning; it's obvious from the submission that they have not thought about simple questions such as

- What's this all about (setting a context for the essay or section)?
- What do I want to say and what evidence should I provide to back up my assertions?
- What's the best way to present my ideas?
- Which kinds of information should be included and in what sequence?

From the disorganized state of some essays, it seems likely that the authors never created an outline reflecting their thoughtful analysis and imposing structure on their thoughts.

Good structure in your writing helps you communicate effectively. For example, creating section headings that reflect an orderly presentation of your ideas even before you start writing helps you focus on each aspect of the message you are trying to communicate. Section headings also help the reader by providing signposts that immediately focus attention on the issue at hand in each part of the paper.

Evidence you can present to buttress your assertions includes some of the following:

- Class readings
- Data and observations from your own experience (with specifics)
- Interviews with staff at your organization
- Interviews with other experts
- Research results from other sources.

Another tool that many writers find helpful is the thematic outline. Although you may use index cards to write down topics and references so that you can physically shuffle them into useful order, working with an electronic document or a spreadsheet is much easier. For a systematic approach to creating thematic outlines, see my paper and narrated lectures on Computer-Aided Thematic Analysis™.[3]

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[3]   Kabay, M. E. (2006). Computer-Aided Thematic Analysis™: Useful Technique for Analyzing Non-Quantitative Data. http://www.mekabay.com/methodology/CATA.pdf and see narrated slides in several formats available from http://www.mekabay.com/methodology/index.htm

2   Writing Top-Down

My experience as a writer has taught me to write top-down, just as I program.

I try to write so that I have a readable work at every stage; each stage is thus a refinement of the previous draft.

Typically I'll lay out the outline of the work using auto-numbered section headings. These provide the framework for the essay and can always be rearranged later if necessary. The OUTLINE function of WORD lets us move entire sections of text very easily.

When writing the first draft, I don't correct spelling and grammar mistakes; my feeling is that such interruptions for corrections distract me from continuing the creative, integrative flow of articulation of ideas.

Adding references can be one of the later stages; I just leave stubs in place. I use < URL > for inline references such as those I use in Network World articles; for other articles I insert a footnote with some comment such as "find article on colorful porcupine hand-puppets as religious objects" to remind me of what I need. Then when I've completed some reasonable draft I can locate materials, change the text with new ideas and so on.

The advantage of this entire approach is that if I'm interrupted or delayed, I still have something to present to my publisher / boss / committee when the deadline arrives.

3 Invisible Writing

One of the great pleasures of being a professor is watching a student bloom. I have had the privilege of helping a brilliant young student from his first days at Norwich, when he entered advanced courses as a freshman. He continued to learn and mature during his time at the University and graduated as the valedictorian in his year.

This student worked with me on research projects that he eventually published. We went over his final report together; and during the course of our discussion, I explained to him why I place such emphasis on clear writing. Why is the art of written communication so important to me? Why should anyone care about minutiae such as precise punctuation or the use of just the right word. Is it an affectation? Do people like me take hidden pride in knowing mysterious details of a high standard of writing? Is it snobbery? Are we secretly laughing at other people and seeing ourselves as morally or otherwise superior?

That's not how I feel. I like good writing in the same way that I like good movie. That is to say, I like writing, like movies, to be invisible.

Well OK – I am speaking metaphorically. *Of course* the writing is visible just as the movie is visible. But in a deeper sense, good writing disappears from a reader's awareness much as a good movie disappears from a viewer's awareness. The communications medium disappears from consciousness to the degree that the message is compelling and that the medium is used effectively.

For readers or viewers who lack technical training, a good text and a good movie both reach deep into their minds to communicate the author's or filmmaker's intentions. Good communication removes itself from the target's awareness; the creator of the message reaches seamlessly into the mind of the co-creator of their shared reality.

In contrast, poor writing and bad filmmaking jar the reader and viewer out of that ideal connection of mind to mind. The misplaced comma, the clumsy pan shot – these errors break the flow of communication and force the reader or viewer back into awareness of the medium itself.

Clumsy writing leads the reader into dead ends; we try to understand what the author meant, realize that we're on the wrong track, and stop. Every stop, every hesitation, every interruption in this smooth flow of meaning from mind to mind is an opportunity lost.

The art of the editor is to become aware of interruptions. I have been editing professionally since 1970, when I started editing my professors' and fellow graduate students' articles. It surprises people sometimes to realize that I don't read word for word when I'm editing; I read just as I do normally. The trick is to be sensitive to the momentary glitch caused by poor writing and then to go back to find out where it is. A good editor can then articulate precisely what is wrong in the text and propose improvements or corrections.

Not everyone has been trained in the mechanics of language. In the United States, we have come through an entire generation during which teachers believed that there was something wrong with analyzing the structure of written communication. As a result, millions of people have no idea how to parse a sentence or even what parsing means. I remember my first days in the laboratory of my research director at Dartmouth College in September 1972, when he asked, "Is it 'me going to the store' or 'my going to the store?'" Without turning around from the lab glassware I was washing, I answered, "The gerundial always takes the possessive." There was a silence and I looked up after a moment to find everyone in the lab staring at me blankly.

For those who can't tell a gerund from a participle, my colleague Elizabeth Templeton has pointed out that reading one's own text aloud can help identify errors that slip by ordinary proofreading. Even a non-editor can spot clumsy phrases by the way they make anyone stumble. Make a practice of reading your own text to yourself aloud and most important, pay attention to the places where you hesitate.

Now go get some invisible ink for your next essay.

4 On Communicating Precisely

I was listening to National Public Radio news several years ago and muttered something under my breath as the reporter spoke.

"What did you say?" asked my dear wife Deborah.

"I said that the reporter ought to know better than to say, 'The reason for the decline in suicide attacks are the better surveillance by the army.'"

She understood me at once. I was referring to what we both call the *American disease*; i.e., according the number of a verb with that of the *proximate* noun instead of with the number of the *subject*.

Does that sound like gibberish to you? Or if you understand what I've written, does it seem like pedantic persiflage to you? I hope not, because there's a sound reason for the irritation.

First, an explanation for the grammar-impaired: the *number* of a noun and verb can be singular or plural. The *subject* determines the number of the verb. The *proximate* noun is the noun nearest the verb. In the sentence that irritated me, the subject of the sentence is *reason* and the verb should be *is*: "reason…is." The speaker was misled by the nearer (proximate) noun *attacks* and thus said, "attacks are."

Who cares?

Anyone who uses words professionally should care. There's no more excuse for a professional to blunder like that than for a concert pianist to hit the wrong notes in the middle of a recital. Mistakes happen, but consistent sloppiness is unprofessional. More important, solecisms interrupt the smooth flow of communication by diverting the listener or reader into the wrong avenue of thought. Even if it is only momentary, every such diversion is an irritant that reduces concentration, interferes with the development and consolidation of ideas, and breaks the bond between minds that is the highest achievement of good speaking and writing.

Does attention to precision simply imply pig-headed resistance to change? Should new speech and writing forms be rejected – or accepted – simply because they're new? For example, is the persistent repetition of *like* as a substitute for most verbs simply a generational shift that must be accepted or is it a loss of skill that must be resisted? The latter, I think. Consider the gormless usage, "I was, like, Oh wow, and he was like, yeah, really." It's so imprecise it's comical, but it's also sad. Why *not* enjoy the distinctions among "I said / announced / proclaimed / whispered / cried / shouted / exclaimed / muttered / admitted?" I feel that changes that increase the power of language to express subtle distinctions are good; those that decrease the ability to express nuance are not.

Granted, colloquial speech is naturally less precise than scholarly discourse, but the habits carry over into our work. I know professionals who write, "Send the reply to Bob and I" and don't even notice the error. The problem is that their inability or refusal to write "Bob and me" as the object of the preposition *to* interrupts the flow of thought with a moment of confusion as the reader backtracks,

recognizes that "and I" is not the start of a new clause (e.g., "Send the reply to Bob and I will get it from him") but a sloppy version of a simple phrase. Yes, the delay lasts only a fraction of a second, but that sloppiness is *unprofessional.*

The person who speaks and writes precisely in a professional context is not being pedantic: she is being respectful of her interlocutors. She's being a professional by thinking clearly about exactly what she means and then expressing herself as exactly as language will allow.

I wish people would spend as much time and effort on their choice of words as they do on their choice of clothes and cars. Clothes and cars communicate very little of value about people; words can open a universe of thought.

For yourself even if not for others, say what you mean.

5   Why We Cite Sources[4]

S tudents sometimes express or simply evince bewilderment at the emphasis academics place on citations in essays. Why all the fuss? Why should anyone go to the trouble of providing a source for quotations, facts, and ideas?

The habit of providing references is deeply rooted in the psyche of the academic. At heart, everyone in academia is concerned with ideas. Researchers help discover and articulate ideas; teachers help others learn ideas. When we cite the source for information, we are doing much more than complying with an arbitrary rule that some students perceive as just another hurdle put in their way to trip them up. We are contributing to a long tradition of shared intellectual exploration.

By providing an attribution and a reference ("As So-and-So suggested, blah-blah-blah [footnote]") we are giving our readers the privilege of exploring our sources for themselves. They don't have to rely solely on our filtered version of what So-and-So said – they can judge the meaning of So-and-So's writing on their own. Our readers can go beyond our interpretation and contribute new ideas based on their own responses to our sources. Instead of hoarding our knowledge or sequestering our sources, we are making a wonderful gift to the world: a list of the places we found useful in our own quest for understanding.

Intellectual life is not about grabbing credit for ideas. The best of us give away our ideas freely, glad to stimulate someone else into thinking up something even better than we conceived. But the history of an idea, the interwoven threads of thought from which it was created, is sometimes as important as the thought itself. By documenting that path with references and citations, we enable

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4   Written in collaboration with Prof Stephen Cobb, CISSP

any observer to understand not only the idea, but its genesis. And should the idea prove faulty or inadequate, others may back track along that path and use some of the work we have done to reach, perhaps, a different, more robust conclusion.

Nothing is lost by citing sources and much is gained. Indeed, one way to 'sell' students on proper referencing is to point out that it adds to their work. A well-referenced paper demonstrates that the student has consulted numerous sources. By citing authorities in the field and either agreeing or disagreeing with them, students participate in, and become part of, their field of study.

Not that citing sources is an optional embellishment; it is an academic requirement. Failure to cite sources is, at its worst, plagiarism: academic dishonesty. Although much has been written in recent years about the ease with which Internet-equipped students can perpetrate plagiarism, and the ease with which Internet-savvy professors can detect the more obvious offenders, very little attention has been paid to the effect that this act of dishonesty has on the parties involved.

The student who is discovered often feels a deep sense of shame, and a powerful sense of failure, of foolishness and self-loathing for committing such an indefensible act. The act of plagiarism also takes its toll on the professor who is the target of the deception. Any sense of accomplishment at having discerned the deception quickly evaporates as the instructor realizes that the student will need to be confronted. Then the faculty members start to feel resentment that this extremely unpleasant task has been forced upon them by the student, with whom they sometimes become quite angry. After all, students who try to pass off someone else's work as their own are displaying an inherent lack of respect for their instructors, both as teachers and as people. Instructors start to ask themselves some unpleasant questions. Did the students think faculty were too stupid to notice? And what about their previous work? Did that contain plagiarism that was missed? Unfortunately, the unpleasant emotions do not end after confronting the student. If the students react with shame and remorse, instructors are likely to find themselves wondering how the students are going to cope with this episode in their life, hoping that they don't do anything foolish.

Avoiding the problem in the first place is clearly the preferred approach for everyone. Professors must let students know what is expected in terms of citing sources. Sadly, we can no longer assume that everyone who has gone through high school or even who has already obtained a college degree knows how to cite sources or even why they should. The sooner everyone confronts this issue openly, the better, for everyone's sake.

Stephen Cobb adds:

For examples of essays with citations, I would give folks anything by Montaigne, the father of the art itself, such as this: http://eserver.org/philosophy/montaigne-essays.txt and in the security genre, perhaps this, by Cliff Stoll http://cs.gmu.edu/cne/modules/acmpkp/security/texts/HACKER.PDF

6 Reference Materials

So what role should quotations and paraphrases play in your writing?

Some students, in a misguided effort to attempt to appear scholarly, end up with a collage of quoted materials with little or no organization and even less original thought. Please don't do that: referencing other people's ideas is fine (and necessary) but the basic purpose of an essay in the MSIA program is to help you *integrate knowledge into your own worldview* by forcing you to *think* about what you are reading in references and hearing from people you interview. It is your job to *articulate your understanding* of the information and the ideas *in your own words* as much as possible. That's not merely paraphrasing what you are looking at in a text or putting quotation marks around someone else's words.

One of the ways you can force yourself to write what you think is to write the first draft of your work entirely without even looking at your reference materials. Only after you complete a coherent, well-organized draft should you go to your sources to insert specific quotations and paraphrases for particular purposes. As I have written elsewhere, every word, every phrase, every sentence, and every paragraph must be essential: if it makes no difference to the meaning, leave it out. Using the same approach, don't stick quotations into your text without knowing exactly why *that specific extract* from someone else's writing is *absolutely essential* for you to communicate your ideas effectively. If the presence of the quotation makes no difference, leave it out.

There is no absolute limit to the total amount of quotation permitted in an MSIA essay. For example, sometimes weekly reports can have quite a lot of quotation, especially if you are interviewing colleagues or other experts as part of your research. As a rule of thumb, though, if the total word count exceeds, say, 20% of your total text, you might want to re-examine your use of quotation to be sure that you are using this tool effectively rather than abusing the privilege.

We have had some unfortunate cases where 60% of a student's essay was directly quoted, with attribution, from other work. In such cases, the professor usually assigned 100% to the original writer and set the maximum grade at 40% for the student before beginning deductions for any other errors. Evidently, with a minimum of 80% required for a non-zero grade, the exercise inevitably resulted in a zero grade on the weekly essay and a disaster on a term paper.
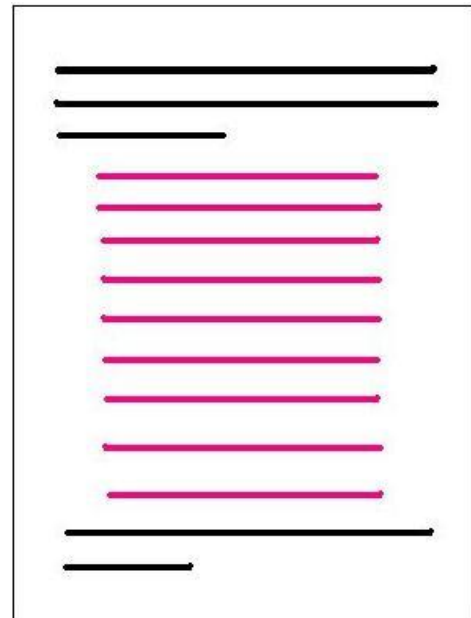
7   On Having Your Papers Edited

An instructor and I were discussing the case of a student who presented a thorny problem: noticeably erratic writing style. From paper to paper, the writing varied considerably – sometimes quite good, sometimes awful. The question arose of whether the work was all by the student or whether we were seeing the results of external help.

Should you, as a student, be relying on external help in writing and editing your papers? Well, it depends how much help you're getting and how much you're learning from that help.

Clearly, presenting other people's writing as your own without acknowledgement is plagiarism. It's plagiarism whether the materials are from published materials, from unpublished term papers, or from writing done on your behalf by an employee, a friend or a relative. Plagiarism even extends to presenting other people's *ideas* without mentioning the source; thus, one writes, "As so-and-so suggested [footnote]… " rather than simply reporting so-and-so's ideas as if they are one's own.
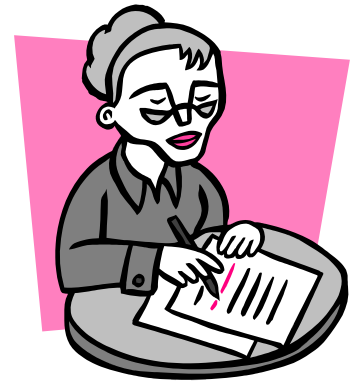
But what about editing? Is it OK to give your draft essay to a friend, your husband or wife (definitely a friend!), a fellow student or a colleague for corrections and ideas?

Yes, definitely, if you are thinking about their suggestions and integrating their ideas and corrections into your knowledge and your work. No, definitely not, if you are merely allowing someone else to improve your work for you and then passively transmitting their efforts to your instructor without further involvement.

The first process is an honest, realistic engagement in the creative process. You are challenged by your editor; you think about the corrections and learn from them. You extend the suggestions with additional research and you articulate the ideas yourself, thus making those ideas your own.

The latter is plagiarism by another name. The only proper way to present such a work would be to put the other person's name on as second – or maybe even first – author to indicate their level of contribution. Leaving out their name is dishonest.

By the way, it is customary in academic work to include an acknowledgements section to thank people who have reviewed one's drafts. It's a nice touch and in no way detracts from your own authorship and sense of responsibility or credit for what you are presenting.

8 Integrating Feedback from Your Instructors

Most students find that their professors are aware of the issues discussed in this compilation: organization, clarity, simplicity, grammar, content, references and editing. Most students have received feedback that addresses organization and analysis. That feedback is designed to identify writing process skills that need to be sharpened up to help you communicate about security issues more effectively in your professional career. Upper-level executives expect our graduates to write effectively and we are determined to help you achieve high standards in your written communications.

Instructor feedback usually includes specific suggestions for improvements you must make to write at the level expected of graduate students. We take our academic standards seriously. In particular, I remind you that if you repeat the same unprofessional writing patterns you have been warned about, you are likely to receive lower grades. You may even receive a zero grade on your written assignment – a situation painful for you and for your instructor.

I want to emphasize the critical importance of acting on the corrections and advice provided by your professors when they grade your essays and exams. Pay attention to and *implement* the recommendations for improvement of your writing – which include both advice on structuring your writing and suggestions on details of the mechanics – and you will be making the best use of your time, efforts and money in the MSIA program.

APPLY SUGGESTIONS FOR IMPROVEMENT

WRITE NEXT PAPER

GET RESPONSES FROM INSTRUCTOR
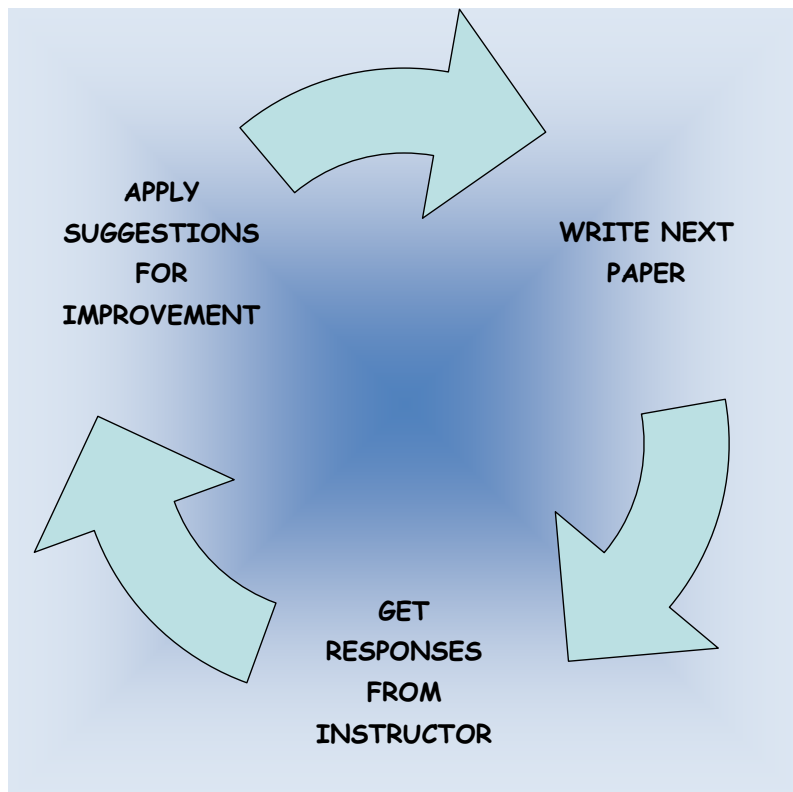
9   Egoless Work

Candidates for the information assurance (IA) master's program I direct (the Norwich MSIA) must submit an essay responding to detailed questions for the admissions committee. My colleague Prof Peter Stephenson, PhD, CISM, CISSP, FICAF (the Associate Program Director of the MSIA) and I read these essays closely and base much of our decision on the quality of the thinking and of the writing presented by our candidates. We also learn a lot from our applicants' stories.

In particular, I was struck recently by a comment an applicant included in her discussion of her perfectionistic tendencies (all details are obscured to protect confidentiality). "Sally" wrote,

> Sometimes I get really frustrated when my ideas for protecting the network are rejected. For instance, I recently recommended to the CIO that we install a resource management software package to monitor critical elements of our production system (we have over 25,000 users who depend on it for their daily work) but he just said he didn't think we'd get it into our budget this fiscal year. I was so mad I felt like completely giving up on any improvements to network management. I realize that my perfectionism sometimes makes me stop arguing without defending my ideas and I'll be working on that aspect of my personality as we work through the weekly essays and the practical recommendations of the term papers.

I think that this student (she was accepted, by the way) will have to learn to separate her sense of self from the ideas or proposals she makes. All of us naturally feel ego-involvement in our ideas; however, perceiving rejection of an idea as a rejection of oneself in some global sense is not healthy for us or for our organizations. For many years, I have been practicing and teaching *egoless work* as enunciated many years ago by Prof Gerald (Jerry) Weinberg, one of the most influential thinkers and writers about the human dimension of software engineering and technical management.[5]

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[5] Jerry Weinberg bio http://tinyurl.com/d8bbg

In a *MSIA Director's Corner* article[6] I wrote for my graduate students, I included this passage:

> I learned about egoless work before some of our MSIA students were born: it was in the mid-1970s that I first read Gerald Weinberg's classic text, *The Psychology of Computer Programming*.[7] Weinberg pointed out how easy it is for programmers to identify their work as an extension of themselves. The danger is that criticism of the program becomes emotionally distressing to such programmers; faced with failure of their code, some programmers will search desperately for excuses – user failure, bad operators, bad operating systems, and so on. Excessive ego-identification with their own code can prevent programmers from identifying errors in their own code; Weinberg writes, "A programmer who truly sees his program as an extension of his own ego is not going to be trying to find all the errors in that program. On the contrary, he is going to be trying to prove that the program is correct – even if this means the oversight of errors which are monstrous to another eye."

I summarized the key issue by telling my students that when someone corrects our work, it's grounds for gratitude and appreciation, not resentment. If someone disagrees with a proposal, it's an opportunity for exploration of why we disagree (Different assumptions? Different goals? Different rules of logic? Errors on one side or both?) rather than an attack on our personal worth as human beings or as professionals.

The other side of this attitude is that being wrong in a proposal is not a big deal: it's just grounds for improvement of process or of product. Either way, if we respond positively to arguments, criticism of ideas and discussions of alternatives, all of us gain. When appropriate, "You're right – let's do it your way" is the response of a mature person who isn't defining herself narrowly and doesn't ego-identify with her own ideas.

To be clear here, this discussion in no way reduces the goal of doing a job right nor the legitimate pride one can feel in one's accomplishments. The nice thing is that egoless work often extends such motivation and pride to a wider group, all of whom can contribute to success and feel pride in everyone's accomplishments.

So the next time you find yourself getting hot under the collar when someone fails to approve a proposal, relax. It doesn't mean they're rejecting *you*.

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[6]   Kabay, M. E. (2005). Pooling Student Intelligence for Publication: Egoless Work and Productivity. MSIA Graduate Portal *Director's Corner* for October 32, 2005. http://tinyurl.com/a9am8

[7]   Weinberg, G. M. (1971). *The Psychology of Computer Programming*. Van Nostrand Reinhold (ISBN 0-442-29264-3). Xv + 288. Index. Still in print: Silver Anniversary Edition (1998) available on AMAZON via link. http://tinyurl.com/9dk8f . See pp. 52-60 in particular.

10 Critical Thinking and Disintermediation[8]

One of the battlespaces of information warfare is the cognitive domain: knowledge, perception, attitudes and mood. For example, military campaigns have long used propaganda and misinformation to influence both the military decisions of the enemy and to discourage soldiers and civilians. In the Second World War, for example, the Nazis used radio broadcasts into Britain to spread false information about t he progress of the war; conversely, the Allies broadcast to the peoples of the Axis powers to blame the governments, but not the population, for the war, thus attempting to drive a wedge between civilians and their regimes. In more recent years, there was a scandal in the USA in October 1986 about a reputed disinformation campaign during the Reagan administration in which government officials were accused of misleading the press to convey false information to Libyan dictator Qaddafi about an imminent attack. And of course currently there's a major division in the USA between those who argue that the administration deliberately misled the American people into a pre-emptive attack on Iraq versus those who suggest that the decision was based on incorrect information (or, for that matter, was correct despite the failure to find corroborative evidence of weapons of mass destruction).

Disintermediation in general is defined as "removal of intermediaries: the elimination of intermediaries such as wholesalers or retailers in business transactions between producers and consumers."[9] In the context of cyberspace, Webopedia adds, "The term is a popular buzzword used to describe many Internet -based businesses that use the World Wide Web to sell products directly to customers rather than going through traditional retail channels. By eliminating the middlemen, companies can sell their products cheaper and faster. Many people believe that the Internet will revolutionize the way products are bought and sold, and disintermediation is the driving force behind this revolution."[10]

Disintermediation in the distribution of news is the phenomenon of reducing gate-keepers in the flow of information from provider to user. For example, Matt Drudge is free to spread unsubstantiated rumors to a huge audience without having to bother with the fact-checking that is customary in responsible news media such as reputable newspapers or magazines and some television or radio programs.

Critical thinking is the ability to analyze information skeptically rather than gullibly. For example, people who open unexpected attachments in e-mail from friends are failing to distinguish among different targets of trust:

- Trust in the authenticity of the FROM line of an e-mail message (which may not, in fact, correctly identify the source);

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[8]   *Unlike the other sections of this paper, the original versfollowing text was written for the* Network World Security Strategies Newsletter http://www.networkworld.com/newsletters/sec/. *It is more formal than the previous sections and deals with a higher-level concern in writing – the quality of ideas rather than their expression.*

[9]   *Microsoft® Encarta® 2009*

[10]   Webopedia http://www.webopedia.com/TERM/D/disintermediation.html

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- Trust in the technical competence of the sender to evaluate the quality of the attachment (which may not, in fact, correlate with how loveable and friendly Aunt Gladys is);

- Trust in the authenticity of the labeling of the attachment (which may not, in fact, really be a document at all but may be an executable);

- Trust in the description and safety of an attachment (which may not, in fact, be a screen saver with frogs).

Now couple disintermediation with a lack of critical thinking. Consider the likely effects of a concerted campaign to, say, spread a number of rumors about major publicly traded companies. We know that *pump 'n' dump* schemes have successfully manipulated stock values to the benefit of criminals; why not expect terrorists to apply the same techniques to manipulating the entire stock market? If people are willing to believe and act upon stock tips e-mailed to them by total strangers using spam (even though tiny print clearly states that the junk mailer has been paid to distribute the information), why wouldn't uncritical thinkers cheerfully act on advice (i.e., misinformation) spread by enemies of the nation?

Similarly, the phenomenon of flash crowds worries me: training people to assemble on command in large numbers at, say, shoe stores, piano showrooms or restaurants for no good reason other than the fun of being part of a huge crowd is a perfect setup for creating an army of willing, mindless drones who will congregate on command at the site of a terrorist attack or at places where their presence will interfere with response to criminal or terrorist activities. Want to rob a bank in peace and quiet? Set up a conflict between two instant crowds to draw the police to an instant riot.

I think that all of us in the IT, network and security fields are used to critical thinking. We have to be to keep up with the flood of technical information and to distinguish marketing exaggerations from realistic information. We are used to writing and reading product comparisons, strategy evaluations and management recommendations as part of our work. Let's use our skills to foster critical thinking throughout the educational system. Let's work as volunteers on school boards, in the classroom and in social organizations to introduce critical thinking to children and adults who haven't learned how to distinguish reality from propaganda. We should push for curriculum changes to accompany lessons on how to use the Internet with lessons on how to weigh the information found through e-mail and on the Web.

Let's make sure that we're not patsies for an information warfare attack rooted in disintermediated propaganda.

For Further Reading about Disintermediation and Critical Thinking

Agre, P. (1998). Phil Agre talks more about disintermediation. http://www.xent.com/FoRK-archive/august98/0321.html

Bosworth, S. (2009). Information Warfare. Chapter 14 from *Computer Security Handbook,* 5th Edition*,* Bosworth, S., M. E. Kabay & E Whyne, eds. Wiley (New York). ISBN 0-471-71652-9. 2040 pp. Index.

Campen, A. D., D. H. Dearth, & R. T. Goodden, eds. (1996). *Cyberwar: Security, Strategy, and Conflict in the Information Age.* AFCEA International Press (Fairfax, VA). ISBN 0-916-15926-4. vii + 296.

Cheesebikini (2003). Upcoming Flash Mobs. http://www.cheesebikini.com/archives/2003_06.html

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11 Resources for Improving Your Writing

Y ou must write clear, simple technical English in all phases of professional life. Editors crack down on verbose, confusing, pretentious, bureaucratic prose and teachers, managers and clients penalize bad writing. All students and especially those who have trouble writing plain English should study such resources as

- Rodriguez, D. & M. G. Tuman (1999). *Writing Essentials, Second Edition.* Norton (ISBN 0-393-97336). viii + 204. Index.

- Strunk, W., E. B. White & R. Angell (2000). *The Elements of Style, 4th Edition.* Allyn & Bacon, ISBN 0-205-30902-X. 105 pp.

- Zinsser, W. K. (2001). *On Writing Well: The Classic Guide to Writing Nonfiction, 25th Anniversary Edition.* HarperResource, ISBN 0-060-00664-1. 320 pp.
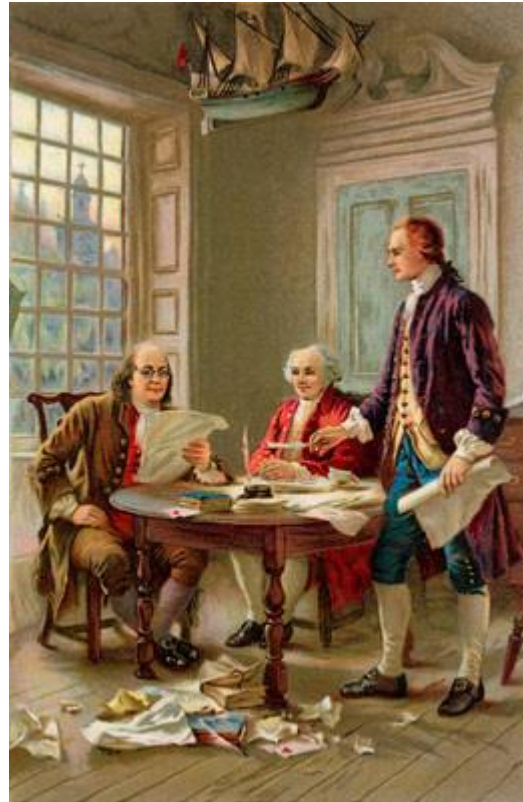
Three recommended references for English usage and form are

- Burchfield, R. W. (2000), ed. *The New Fowler's Modern English Usage, 3rd edition.* Oxford University Press, ISBN 0-19-86023-4. 873 pp.

- Grossman, J. (1993), ed. *The Chicago Manual of Style, 14th ed.* University of Chicago Press, ISBN 0-226-10389-7. 921 pp.

- Truss, L. (2003). *Eats, Shoots & Leaves: The Zero Tolerance Approach to Punctuation.* Gotham Books (ISBN 1-592-40087-6). 240 pp.

In addition, the following online resources will be useful:

- Brians, P. (2016). *Common Errors in English Usage.* https://brians.wsu.edu/common-errors/

- *A Summary of Strunk's Rules.* http://whatis.techtarget.com/definition/0,289893,sid9_gci213060,00.html

- The original (1918) edition of Strunk's *The Elements of Style.* http://www.bartleby.com/141/index.html

- General Writing Concerns from the Online Writing Lab (OWL) at Purdue University http://owl.english.purdue.edu/handouts/general/

- Mootz, Natalie (2018). "Write Better Blog Posts: How to Write Posts People Actually Read." https://blogging.com/blog/how-to-write-good-blog-post/ [11]

- For those wanting thorough training or review in the details of English grammar analysis and writing, the **Capital Community College Foundation** provides the *Guide to Grammar & Writing.* This extraordinary resource has detailed instruction about word-, sentence-, paragraph-, and essay-level details of good writing and includes extensive examples and online review quizzes. http://www.ccc.commnet.edu/grammar/

- Finally, for additional links to many online guides for good writing, see the list from the Harvey Cushing / John Hay Whitney Medical Library at Yale University: http://info.med.yale.edu/library/ref/writing.html

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[11] With thanks to Keira Brennan of the **improved.org** group.

12 Strunk & White's Rules from *The Elements of Style*

ere is a list of the seven elementary rules of English usage and 11 elementary principles of composition from William Strunk, Jr.'s classic work, *The Elements of Style*. In addition, we list the "reminders" for writers added by E. B. White in his edition of *Strunk*. The complete text of the original Strunk edition is available on the Web at http://www.bartleby.com/141/index.html .
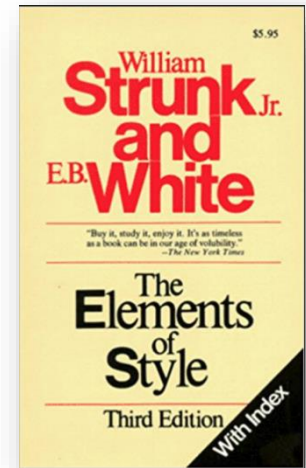
12.1 Strunk's Seven Elementary Rules of English Usage

1. Form the possessive singular of nouns by adding *'s*.

2. In a series of three or more terms with a single conjunction, use a comma after each term except the last.

3. Enclose parenthetic expressions between commas.

4. Place a comma before a conjunction introducing an independent clause.

5. Do not join independent clauses by a comma.

6. Do not break sentences in two.

7. A participial phrase at the beginning of a sentence must refer to the grammatical subject.

12.2 Strunk's 11 Elementary Principles of Composition

1. Choose a suitable design and hold to it.

2. Make the paragraph the unit of composition.

3. Use the active voice.

4. Put statements in positive form.

5. Use definite, specific, concrete language.

6. Omit needless words.

7. Avoid a succession of loose sentences.

8. Express coordinate ideas in similar form.

9. Keep related words together.

10. In summaries, keep to one tense.

11. Place the emphatic words of a sentence at the end.

12.3 White's List of 21 Reminders to Writers

1. Place yourself in the background.

2. Write in a way that comes naturally.

3. Work from a suitable design.

4. Write with nouns and verbs.

5. Revise and rewrite.

6. Do not overwrite.

7. Do not overstate.

8. Avoid the use of qualifiers.

9. Do not affect a breezy manner.

10. Use orthodox spelling.

11. Do not explain too much.

12. Do not construct awkward adverbs.

13. Make sure the reader knows who is speaking.

14. Avoid fancy words.

15. Do not use dialect unless your ear is good.

16. Be clear.

17. Do not inject opinion.

18. Use figures of speech sparingly.

19. Do not take shortcuts at the cost of clarity.

20. Avoid foreign languages.

21. Prefer the standard to the offbeat.

NOW GO AND STUDY

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