2 Scientific style

If any man wish to write in a clear style, let him be first clear in his thoughts.

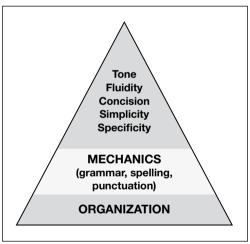
Johann Wolfgang von Goethe

2.1. Principles

Principles and rules are intended to provide a thinking man with a frame of reference.

Carl von Clausewitz

The main goal of scientific writing is to inform: a) to communicate your results and conclusions to others working in your field, b) to record what you have done, so others can check your work and evaluate your results and conclusions, and c) to educate those who are getting started in your field or working in related fields. This last point is important; it is not enough for other



The pyramid of scientific style

experts in your specific area of interest to understand your text. Well-written scientific texts present complex information in a way that enables relatively knowledgeable readers to understand it as easily as possible. Efficient organization and impeccable mechanics are fundamental to this task, but a series of other principles must also be applied to ensure clarity and comprehension.

The following exercise aims to get you thinking about scientific style. It can be quite challenging, so be sure to give yourself plenty of time. On the other hand, if you have severe difficulties with one of the sentences, do not hesitate to move on to the next one.

Exercise 5

Each of the following sentences violates at least one principle of scientific style (related to the text written *in bold italics*). Examine each sentence and use your imagination to decide how it could be improved. Then try to define the principle illustrated in each group of five sentences. If you find this second part of the task too challenging, you can look at the list of principles on page 15 and do it as a matching exercise.

I.

Example: A number of patients had significant headaches. Twenty patients had headaches \geq 7 on the visual analogue scale.

- 1) We exposed 20 animals to high levels of chloromethane.
- 2) Cardiac output was drastically compromised.
- 3) With the administration of amiodarone, the frequency and length of runs of tachycardia decreased.
- 4) An *elderly patient* presented with *abnormal heart sounds*.

11.

Example: The ambulance team must *have the capability* to provide basic emergency care interventions. *The ambulance team must be able...*

- 1) The vast majority of patients had suffered traffic accidents.
- 2) The incidence of type II diabetes is increasing in the pediatric population.
- 3) We studied 16 male and 14 female patients with congestive heart failure.
- 4) Monitorization of the patients' vital signs was carried out by the nursing team.

III.

Example: A protocol for weaning patients from mechanical ventilation is *absolutely essential*. A protocol for weaning patients from mechanical ventilation is essential.

- 1) CT was performed and revealed the presence of massive subarachnoid hemorrhage.
- 2) Bilirubin causes the urine to become a dark brown color.
- 3) The purpose of a Rapid Response Team is to support *the* hospital personnel *outside of* the ICU and *the* ED.
- 4) Two distinct studies are currently underway to explore this phenomenon.

IV.

Example: Meningiomas are more common in women and are multiple in up to 40% of cases. *This* is more usual in patients with neurofibromatosis 2. *Meningiomas are more common in women and are multiple in up to 40% of cases. Multiple meningiomas are more usual in patients with neurofibromatosis 2.*

- Cognitive impairment is common in ICU patients. These neuropsychological deficits can persist long after discharge. Neurocognitive deficits can affect patient's ability to perform tasks of daily living. This decreased quality of life...
- 2) At our *center*, *haemopexin* levels are often *utilised* to diagnose *hemolytic anaemia*.
- 3) When heart rate increases, there is usually an increase cardiac output, too.
- 4) She spoke at the *critical patient rights protection regulations consensus conference*.

V.

Example: *It is well known that* trauma patients can develop post-traumatic stress syndrome. *Trauma patients can develop post-traumatic stress syndrome.*

- 1) These results *clearly demonstrate* an *unambiguous improvement* over existing treatment options.
- 2) Our results *could suggest* that this treatment *might possibly have some* benefit in the treatment of a *select group* of patients.
- 3) When a *urologist* interprets the PSA, *he* takes many factors into consideration.
- 4) A 20-year-old *male Gypsy* presented with a knife wound.

VI.

Example: The ionogram showed renal dysfunction. The serum electrolytes showed renal dysfunction.

- 1) In *general medicine* you inject acts faster than medicine you swallow.
- 2) Nearly half of our patients had cardiopathies.
- 3) Abused infants often corroborate their caretakers' lies.
- 4) Looking through the microscope, islands of trophoblastic cells were surrounded by extensive necrosis.

Note that the principles in the following list are interrelated and can overlap.

Principles of Scientific Style

- a) Keep writing as simple as possible—avoid unnecessary complexity.
- b) Ensure that the ideas flow smoothly—eliminate obstacles to comprehension.
- c) Maintain the right attitude—be forthright and humble, show respect for others.
- d) Be concise-make every word count.
- e) Be specific—don't make readers guess important details.
- f) Be accurate—use the correct terms and mechanics (spelling, grammar, and punctuation).

Exercise 6

Identify the problem and suggest an approach to fixing it.

EXAMPLE: Our innovative approach revolutionizes the treatment of... This is a problem of attitude (arrogance). Better to begin Our approach improves the treatment of...

- 1) Fludrocortisone is absorbed rapidly from the GI tract with a peak plasma concentration within 1.5 hours.
- 2) Vasopressors are indicated following the initiation of cardiopulmonary resuscitation.
- 3) The trigeminal nerve is the largest of the cranial nerves. CN5 provides the tactile, proprioceptive, and nociceptive afference of the face and mouth. The fifth cranial nerve activates the muscles of mastication, the tensor tympani, tensor veli palatini, mylohyoid, and anterior belly of the digastric.

Continue

4)	Anesthetists must complete a four-year residency program after medical school.
5)	This is the first study to show beyond the shadow of doubt that
6)	A nurse will be responsible for taking your temperature and blood pressure. She should always inform you of her findings.
7)	Multiple organ failure was associated with death in all cases.
8)	We aimed to study the appearance of pseudoangiomatous stromal hyperplasia (PASH) on mammography (MG), computed tomography (CT), magnetic resonance imaging (MRI), and ultrasonography (US) and to detail the differential diagnosis with angiosarcoma (AS) At MG and US, AS was impossible to distinguish from PASH.
9)	Complete surgical resection of the lesion was done.

10) Her gallbladder was resected by a surgeon.