

CHOOSING THE RIGHT WORD

Whenever we come upon one of those intensely right words in a book or a newspaper the resulting effect is physical as well as spiritual, and electrically prompt.

Mark Twain

EVEN THOUGH SEVERAL WORDS may be synonymous, they all have different shades of meaning. Authors should carefully choose the word that best conveys the intended message. Technical writers sometimes fail to distinguish shades of meaning, or they brush aside careful word choices in the haste to set down their scientific concepts. If a word is uncommon, double check its spelling and meaning or risk passing a flawed message to the reader.

The following words and phrases are stumbling blocks for many Survey authors:

A, an

“An” should precede “h” words only if the “h” is silent: an heir, an herb, an honor, or an hour, but a historic event. In contemporary American usage almost all beginning h’s are pronounced.

About, approximately, on the order of

“About” is nearly always better than “approximately,” but “approximately” is preferable if fairly accurate figures are being given. “On the order of” should be used only with an established order of intensity, magnitude, or velocity. It should not be substituted for “about.”

Absent, lacking

“Absent” means simply not present or missing (“absent without leave”), but “lacking” implies need or requirement. “Data are lacking” could mean that they are unavailable but seems to say we want more. Absence is a factual condition or observational statement, as in the following examples:

Sandstone beds are *lacking* [absent] from the lowermost section.

Samples containing evidence of secondary mineralization are *lacking* [unavailable, not found].

The lack of an item, as opposed to its mere absence, reflects more human than natural factors; the scientist is concerned with the existence of facts, which should dictate the choice of words. If no evidence exists, then say so directly.

Accuracy, precision

A measurement can be precise without being accurate. Precision relates to values reported in very small increments; accuracy reflects the correctness of those values. A stratigraphic measurement to the nearest tenth of a meter is very precise but is not necessarily accurate. In statistics, “accuracy” is the agreement of a measured or computed value with the absolute or true value; “precision” is the degree of coincidence of repeated measurements of a single quantity. (See also section on “Significant Figures,” p. 119.)

Align, alignment

“Align” and “alignment” should refer to things being in a line; “The stakes were precisely aligned.” The author who said the minerals are aligned N. 30° E. meant that their long axes are oriented in that direction, not that they are one behind another. The alternative spelling “aline” is no longer used in Government reports.

All of

The word “of” in the phrase “all of” is generally superfluous. As a popular idiom “all of” emphasizes totality, as “How many of the rocks did you see?” “I saw all of them.” The best usage omits the “of” as needless, preferring “I saw them all.” I saw all (not, all of) the specimens. Include “of,” however, with pronouns, as “all of it,” “of whom,” “of which,” “of them.”

The foregoing judgment is based on the assumption that the word “of” is a partitive in phrases like “some of,” “many of,” “one of”—that is, a term implying partition or denoting a part—whereas in “all of,” no expression of partition is intended. “The whole of” has been criticized on the same grounds.

You may say “the whole staff accompanied the Chief Hydrologist” or (for emphasis) “the whole of the staff,” but it would be better to say “the entire staff” or “all members of the staff,” not “all of the members of the staff.” “Take it all” is better than “Take all of it.”

But “of” after “all” should not be mechanically cut out. In the phrase “Many *but not all* of these fragments are rounded” the italicized words may be superfluous, but whether or not they are cut out, the “of” should stand.

Although, whereas

“Although” means “regardless of the fact that,” and “whereas” suggests “but at the same time” or “while on the contrary.” A clear contrast between two statements is implicit in “whereas” but is not implicit in “although.” (“Jack was short and fat, whereas Jill was tall and skinny.” “Although gypsum is soft, talc is even softer.”)

Altitude, elevation

Both terms may refer to height above sea level, but “elevation” may also mean uplift in a geologic sense. To avoid ambiguity, use “altitude” in geologic reports to indicate height above sea level and use “elevation” to mean uplift. Because “elevation,” however, is widely used by engineers and topographers to mean altitude, Survey reports directed to such readers may follow that usage. Consistency is essential; do not use “altitude” and “elevation” interchangeably within a report, and do not use “elevation” for “uplift” if you also use it to mean “altitude.”

And (or)

The legalistic “and (or)” is not erroneous but is frowned upon by grammarians and should be avoided. The slash (and/or) serves the same purpose no better. “Or” or “and” alone may suffice to make the meaning clear; “or both” may be added.

In some places the succession of shale beds is interrupted by lenses of sand or gravel.

The sequence may include limestone or sandstone, or both.

Apparent, evident, obvious

“Obvious” means so easily perceived or seen that it cannot be missed. “Evident” denotes the existence of visible signs, all pointing to one conclusion. “Apparent” goes one step beyond “evident” and implies visible signs and some reasoning, as in “The absurdity of their contention is apparent to one who knows the effects produced by the same causes in the past.”

Appears, seems

“Appears” in its primary sense means to come into view, as in “As one travels westward the mountain appears over the horizon.” “Appears” also means to give an impression and therefore approximates “seems,” as in “It seems (appears) clear that the rock was originally a sandstone.” “Seems” may suggest something in opposition to fact, however, as in “The rock seems to be gray, but in good light it is seen to be buff.” If you wish to maintain a distinction between “appears” and “seems,” you should follow the first definition above.

Area, region, section

“Area” and “region” are common geographic descriptors. Use “region” for larger geographic units and “area” for smaller ones. Usage should be consistent; the “region” of one paragraph should not become the “area” of another. “Section” is best reserved for land sections, cross sections, and thin sections.

As, since, because

“As” and “since” are sometimes used as conjunctions interchangeably with “because,” but the result can be ambiguous if the reader takes the meaning to be “after,” “when,” or “at the time that.” In the following examples, “as” and “since” are ambiguous:

The levees were sandbagged *since* [because] all the creeks were in flood.

Since [when, or because] you left the door ajar, the house filled up with flies.

Since [because] the Snow Storm Mine ceased production and the Lost Packer Mine shipped only a few cars of matte, the increase during the year was due to * * *.

As [because] the hillside was logged off, avalanching increased.

“Because” is the most specific conjunction used to express cause or reason—it indicates unequivocal causal relationship. “Since” is sometimes used in place of “because,” but its principal connotation of time confuses the usage, particularly in introductory clauses: “*Since*” [Because] a tidal wave was forecast, people fled to higher ground.”

As much as, up to

“As much as” is better than “up to” for describing an upper limit. “Up to” implies a position in space and logically should be coupled with a preceding “from.” (See also “Range.”)

As well as, and

“As well as” is used in a parenthetical sense to give slightly less emphasis to what follows it compared with what precedes it; if no such subordination is intended, “and” should be used instead. The parenthetical construction does not affect the number (singular or plural) of the verb, so awkward phrasing can result: “Quartz, as well as microcline and oligoclase, is a major constituent” doesn’t sound as good as “Quartz, microcline, and oligoclase are major constituents.”

Assume, presume, postulate

In the sense of suppose, “presume,” which is similar to “assume,” expresses what the presumer believes until it is proved wrong, and the presumption should be based on experience, theory, or logic. “Assume” perhaps should mean to take for granted, and with less reason for doing so than to take that which is presumed; it emphasizes the arbitrary acceptance of something as true. “Postulate,” in the sense of suppose, means to assume, especially as a basis for argument. Webster says, “One can assume * * * at any point in a course of reasoning, but one postulates something or lays down a proposition as a postulate only as the groundwork for a single argument, or for a chain of reasoning, or for a system of thought.” In considering “postulate,” scientific writers might ponder whether they actually mean that word or, perhaps, “infer” or “conjecture.”

Assure, ensure, insure

“Assure” means to encourage. “Ensure” means to make certain. “Insure” should be used when referring to underwriting a loss.

Audience, readership

“Audience” is used widely as a synonym of “readership,” but its derivation is from the Latin verb “to hear.” Although “audience” has come to mean one’s public or readership, it is better reserved for august gatherings in lecture halls or meetings with the Director.

Balance, remainder, rest

“Balance” is properly used to denote the difference between two amounts when their comparison is in one’s mind. Without this idea of comparison, “rest” or “remainder” is the better word. “Rest” is preferred to “remainder” when there is no implication of subtraction, depletion, or deduction. If such an implication does exist, as in “Two faults trend northeast, but the rest trend east,” either word is correct, though “remainder” is a bit stilted. “Remainder” seems preferable in describing laboratory analyses even when that which remains is not thought of in terms of amount, weight, or the like, but “rest” has the virtue of being shorter.

Based on, on the basis of

Carefully distinguish the participial phrase “based on” from the prepositional phrase “on the basis of.” “Based on” modifies the noun in the main clause of the sentence; “on the basis of” modifies the verb.

Based on [On the basis of] measurements made on photographs, Brown estimates * * *. (Brown is not based on photogrammetric measurements, the estimates are.)

Brown’s estimates were based on measurements made on photographs.

Even when grammatically correct, a “basis” phrase may be less desirable than a concrete phrase.

The rocks on the basis of [If classified by] size of grain [the rocks] may be divided into sandstones and conglomerates. (Also, “grain size” would be better than “size of grain.”)

The conclusions stated seem to be warranted *on the basis of* [by] the data presented.

Beside, besides

In some senses these are interchangeable. “Beside” means by the side of. “Besides” means in addition to or other than. Some writers prefer “in addition to” over “besides” where an adding to or union with something is meant; “besides” may not be as clear here, because it may be taken to mean “other than” in the sense of except.

Between, among

Strictly speaking, “between” requires two objects; “among,” more than two. However, current usage permits use of “between” with more than two objects when each item is considered in relation to each of the others.

Both, different

“Both” and “different” are useful words, but they are not needed in these sentences:

Both branch chief and project leader will depart in opposite directions.

They are *both* alike.

The Survey occupies more than 30 *different* buildings.

The motorship brings mail and freight to the *different* towns in the region.

Samantha Harper and Bill Macy have married and *both* are honeymooning in Hawaii.

Calculate, compute, determine, estimate

“Calculate” and “compute” are used to describe mathematical determinations. “Calculate” hints at sophisticated mathematical operations; “compute” suggests straightforward arithmetic. “Determine” means to find out exactly. “Estimate” may involve calculations or computations, but it also implies use of judgment and a result that is not necessarily exact.

Can, could; may, might

“Can” suggests the ability to do something. “May” expresses permission (“Mother, mother, may I go”) or possibility (“These rocks may have been folded more than once”). “Could” and “might,” respectively, are the past tenses of these two verbs, but all four words are also treated as subjunctive verbs that can convey ideas in present or future time. “Can” and “may” have positive connotations, whereas “could” and “might” imply that the ability or permission required to do something is unlikely:

This outcrop can be studied. (Studying it is feasible)

This outcrop could be studied. (If certain criteria were met)

This outcrop may be studied. (You have permission to do so)

This outcrop might be studied. (Chances are less likely that it will be studied or that permission will be granted)

Case, instance

Authors should guard against these words. *In most cases they* [of them] are superfluous, and *in some instances they* are misleading; they commonly add needless words.

Case, instance—Continued

The author who wrote, “Specimens in some cases exhibit veins of calcite” meant simply “some specimens,” not museum pieces. Catch the double meaning here: “Splendent prisms of hornblende were displayed in only one case; in every other case the rocks were propylitic.” See also “Display, exhibit.”

Other improper or superfluous usages:

In some *cases* [places] the lowlands contain lakes, the most conspicuous *instance* being Crystal Lake.

In a few instances [Locally], as at Chimney Pond *

One such case formed a cinder cone. (How could a case form a cinder cone?)

In several cases the casing has been pulled.

In case of a malfunction of the pump * * *. (If the pump fails)

Centered around, at, in, on, upon

Because “center” refers to a central point or focus, “centered around” is illogical and should not be used. “Centered at, in, on,” or “upon” are all acceptable alternatives.

Character, conditions, purposes

In many sentences these words take up space without adding anything to the meaning. If the extraneous words are eliminated, the expression is more forceful, as in the following examples. Delete the words in italic: “The surface is *of a* very uneven *character*.” “With proper drainage *conditions*, the land could be made more suitable for farming *purposes*.”

Characteristic, distinctive, typical

“Characteristic” distinguishes that which identifies some particular thing. “Distinctive” emphasizes that which sets something apart. “Typical” expresses the qualities of a representative example.

Collide, collision (see p. 151)

Commonly, generally, typically, usually

“Commonly” refers to something that is frequent or ordinarily so. “Generally” refers to something that is extensive but not universal. “Typically” refers to something that applies to most members of a class. “Usually” has a temporal connotation for something that is customary or regular but not universal; it should not be confused with “generally.”

Comparative(ly), relative(ly)

Some writers use “comparative(ly)” and “relative(ly)” to hedge otherwise-positive statements and thereby diminish the effectiveness of their writing (“Discharge was *comparatively* rapid.” “The eruptions were *relatively* small.”). Neither term is properly used without a comparison: “Compared with the great eruption of 1815, these eruptions were relatively small.”

Compass directions

Terms of compass direction, such as “west,” “western,” “westerly,” and “westward,” should not be used indiscriminately. The adjectives “west” and “western” may both be used, but each should be used consistently. Indefinite or general terms of broad application may end in “ern,” as “in the western part of the district”; terms of definite designation need not, as “west bank, west side.”

“West” is an adverb also, as in the sentence “The fault strikes west” (or “westward”). Use “west” to indicate approximate direction, meaning anywhere between west-northwest and west-southwest. Exact direction is better expressed by saying “due west” or by giving the deviation in degrees, as “N. 75° W.” Puzzles in direction appear in many reports:

About 13 kilometers north and a little west of Weatherford.

About 160 kilometers south of west of this * * *.

In a ravine 2.5 kilometers west and a short distance north of Hanover.

If a place cannot be reached by a diagonal (few places can), say “Drive 10 miles north and then 2 miles east.”

The adjective “westerly” is used properly in such phrases as “westerly dip, direction, trend.” Its use as an adverb is less desirable; STA suggests “westward”:

The fault extends indefinitely *westerly* [westward].

The stream here turns *westerly* [westward]. (Not “westwardly” or “to the westward.”)

The “westerly wind” means the wind that blows from the west.

“Westward” also is both an adjective and an adverb. It is used properly in the unit modifiers “westward dipping, trending, flowing” (but west-dipping might be better). “Westward” is used as an adverb in “extends westward.” The adverb “westward” means toward the west or in a general westerly direction. In the sentence “Clay is abundant in this formation at Newton and westward,” the latter part would be better if written “at and west of Newton.”

Compose, comprise, consist, constitute, include

Authors often stumble over these terms. “Comprise,” besides being a bit stuffy, is so widely misused that you might better avoid it entirely. A safe guideline for authors: Excise “comprise” should it arise.

The whole “comprises” the parts; for example, “The formation *comprises* [consists of] limestone and shale.” The parts “compose” or “constitute” the whole, as in “Limestone and shale compose [constitute] the formation.” Never write “is comprised of”; the passive form “is composed of” can be substituted for “comprises” or “consists of,” but the result is a weaker sentence: “The formation *is composed of* [consists of] limestone

Compose, comprise, consist, constitute, include—Continued

and shale. In contrast to all these terms, “include” indicates an incomplete listing of constituents: “The formation includes limestone and shale” implies that other constituents not mentioned are included also.

Conclude, deduce, imply, infer

“Conclude” means to reach a decision or an agreement as a logical result of interpreting evidence. “Deduce” means to derive an inference from a principle. “Infer” is similar to “deduce” but is not so strong a statement. The difference between “infer” and “imply” rests on the writer-reader relationship: The reader infers or concludes something from an implied statement by the writer. To imply something is to state it indirectly, to hint, or to suggest. “Imply” and “infer” should not be used interchangeably.

Conduct

“Conduct” is a good verb for leading an orchestra but is stilted for a field trip or a research project and, moreover, is often superfluous: “Exploration and development should be *conducted in an orderly and careful fashion.*” “Jones *conducted research on* [researched] the evolution of the Desmoinesian Foraminifera.”

Conspicuous, prominent

In the sense of being immediately noticeable, “conspicuous” and “prominent” are synonyms. The root meaning of “prominent,” however, is to jut out or project above a level or beyond a surface, and when that meaning is intended, a clear distinction between these two terms should be observed. Rock colors and bedding planes may be conspicuous; a volcanic cone may be both conspicuous and prominent.

Continual, continuous

“Continual” relates only to time and applies to something that goes on incessantly or that recurs unceasingly. “Continuous” refers to uninterrupted action in time or unbroken extent in space.

Crop out, outcrop

Use “crop(s) out” as a verb; use “outcrop” as a noun. “Outcrop” used as a verb is easily misread: “The rock outcrops at three places in the study area * * * ” is an example that brings the reader up short, wondering what comes next.

Crossbedded, cross-laminated, cross-stratified

The AGI Glossary and Webster’s Third International Dictionary hyphenate all these words, but the Survey and the GPO Style Manual write “crossbedded” as one word. “Cross-laminated” vs. “crosslaminated” is writer’s choice, but “crosslaminated” looks a bit awkward. “Cross-stratified” should always be hyphenated to avoid tripling the s’s.

Data, facts, information

The term “data” generally refers to organized information used to answer questions or reach conclusions. Data are often used to verify “facts.” “Information” is knowledge gained in any way, whether through study, experience, or hearsay; its connotation is more general than “data,” though the terms are sometimes used interchangeably. “Data” is the plural of “datum” and should not be used in a singular sense in Survey reports. “Datums,” however, is correct for bench marks and time markers.

Deplete, enrich

“Deplete” means “decrease the supply of” or “deprive of something essential to existence”; “enrich” means “add to or improve by addition.” Thus, one can have “an enriched [depleted] granite” or “a granite enriched [depleted] in calcium.” The converse is not possible; calcium cannot be depleted in granite. The phrasing may be further simplified by using a unit modifier: Ca-poor, quartz-rich granite.

Despite, in spite of, notwithstanding

All three terms indicate opposition of varying intensity to contrary forms or circumstances. “Notwithstanding” suggests the weakest opposition, “despite” is stronger, and “in spite of” is strongest.

Determined to be

“Determined to be” appears in many manuscripts, but watch out for this pitfall (see p. 142, 143): “Determined to be” can be either (1) intransitive or (2) transitive passive voice, as in the following:

(1) King was determined to be successful.

(2) The Uinta Mountain Group was determined to be Precambrian.

Develop, development

“Develop” in many manuscripts is intended to mean acquire, deposit, exploit, form, grow, mine, occur, work, or various other verbs that fail to gel in the minds of their writers. Here are a few uses and misuses:

In this district ore bodies of considerable *importance* [value?] have been *developed* [formed? worked?].

Here the vein is *developed in greater thickness* [thicker].

The *large development* [great thickness] of Triassic sediments in this region * * *.

It is possible that its development was in Tertiary time. (Write, “It may have formed in Tertiary time.”)

There is much lateral variation in the *development* [thickness? character? composition?] of even the most persistent strata.

Salt pseudomorphs are *more prominently developed* [more abundant? more conspicuous? more nearly perfect?] on the south slope of the mountains.

In its typical development [Typically] the formation is a series of dark clay shales.

Neither the limestone nor the sandstone is *developed with sufficient uniformity* [sufficiently uniform] to be traced *for considerable distance* [very far].

In some places the quartz *is developed in* [forms] anhedral grains.

Here the century plants attain their *greatest development* [largest size?].

These plants are here *present in less abundance and in more stunted development* [smaller and less abundant].

In the mining industry “develop” and “development” have explicit meaning. To develop a mining property is to open up the ore bodies. The work done for these purposes is development or

Develop, development—Continued

development work. “Developed” and “development” are used properly in the following sentences:

It is the only deposit that has been developed.

The development of the deposit will soon *be undertaken* [start].

Even in the above examples, however, the sentences would gain clarity by a more informative choice of words.

In water-well construction “develop” and “development” have a particular meaning also, although more explicit words might add clarity. To develop a well is to remove fine-grained material from the walls of a drill hole to improve yield. In ground-water parlance, “develop” and “development” refer to exploitation of ground water:

Large supplies of ground water are developed in this area.

The ground-water development in this area is intensive.

Display, exhibit

Save both words for museums, art shows, and department store windows. “Display” and “exhibit” appear interchangeably in many papers whose authors fail to search out more meaningful, less trite words. “Webster’s Third New International Dictionary,” equates display with “an unfolding, stretching out, spreading out, or otherwise showing in full detail or to best advantage (displaying the new fabrics to the buyers).” “Exhibit” applies to putting forward prominently, openly, or conspicuously to attract rather than merely permit attention and inspection (“He exhibited with peculiar pride two cream-colored mules”—Willa Cather). Other meanings include “show off” and “show with ostentation.”

Now try to visualize a fault exhibiting very little drag, a rock exhibiting poorly developed fracture cleavage, or a thin section displaying eutaxitic texture. If you can believe some authors, quartzite may even exhibit vague cross stratification or dim outlines of hopper crystals.

Distinctive (see “Characteristic”)

Dominant, predominant; dominate, predominate

“Dominant” and “predominant” both mean that which exercises principal control, but “predominant” can also mean having greatest influence or authority at a given time. The verb forms, “dominate” and “predominate,” are synonymous, so the shorter form is better.

Doubled-up auxiliary verbs

Mark Twain, in his book “A Tramp Abroad,” wrote:

Harris said that if the best writer in the world once got the slovenly habit of “doubling up his have’s” he could never get rid of it—that is to say, if a man gets the habit of saying “I should have liked to have known more about it,” instead of saying “I should have liked to know more about it,” his disease is incurable.

Doubled-up auxiliary verbs—Con.

Doubled-up “have,” “has,” and other auxiliary verbs are seen in rough drafts of some manuscripts, as in the following sentences:

This gravel *has the appearance of having* [apparently has] been deposited by moving water and *has a strong resemblance to* [strongly resembles] the Gila conglomerate.

The known geologic history of the region *may be said to have been begun* [began] in Silurian time.

On the other hand, “to be” is often omitted where it should be used, as in these sentences:

Cap Glacier is reported [to be] a thin névé field.

The submarine topography appears [to be] chiefly the result of glacial erosion.

“Have” and “has” should be used as principal verbs only with thoughtful discrimination. “Has” should be used in place of “contains” in the sentence “This water contains a higher mineral content,” but “have” and “has” are used undesirably in the following sentences:

The deep erosion gives evidence that the rocks *have a* [are of] considerable age.

The alluvial soil *has* [contains] much sand and gravel.

The rocks *have a flesh color* [are flesh colored].

The sample had *had no exposure* [not been exposed] to the air.

Dramatic

“Dramatic” means theatrically representing human character or behavior. Its attribution to striking natural phenomena such as earthquakes, volcanic eruptions, or fault offsets is an anthropomorphism. Such events or features would be better described as “great” or “significant,” or they should be described by some other appropriate scientific term.

Drainage basin, drainage divide, watershed

“Watershed” once meant just the divide separating one drainage basin from another. Now it also means catchment area or drainage basin, even though such usage can be ambiguous. “Drainage basin” is a better term to indicate the area drained. “Drainage divide” refers to the boundary between one drainage area and another. “Drainage” should not be used as shorthand for “drainage basin.”

Due to, owing to

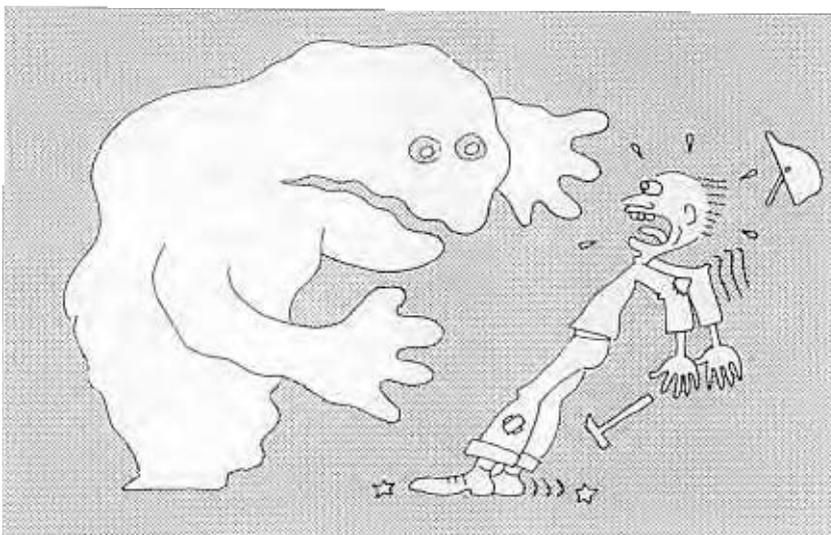
STA recommends that authors adhere to the traditional use of “due to” only as a predicate adjective following a linking verb: “The uplift was [due to] *owing to* movement in the underlying plate.” Many modern writers inelegantly use “due to” as an adverbial modifier by simply dropping “owing to” from their vocabularies: “Landsliding was instantaneous *due to* [, owing to] liquefaction of saturated silt.” “*Due to* [Owing to] the rugged terrain, the fault trace was very crooked.” (Better yet, “Because of the rugged terrain, * * *” or “On account of * * *.”) “Because of” is clearly better than “due to the fact that” or “owing to the fact that.” Although the adverbial use of “due to” is common, it is deplored by most grammarians.

Employ, use, utilize

“Employ” and “use” are generally interchangeable, except that “employ” is stuffier. “Utilize” and “employ” are equally pompous, but “utilize” implies a practical or profitable use. “Employ” also means “to hire,” so its use in a different sense may cause momentary misunderstanding in the mind of the reader: “We employed a block and tackle to remove the specimens.”

Encounter

“Encounter” means to meet unexpectedly; to come face to face; to oppose, confront, or contest—a meeting with hostile forces. “Encounter” is a favorite verb of writers who prefer a longer, more impressive-sounding word than “meet” or “find.” It has little place in technical literature except for dramatic effect, which doesn’t belong there either. Better alternatives are “meet” and “find.”



“Kaye first encountered xonotlite deep in the workings of the Puerto Rican mine.”

Essential, essentially

“Essential” means part of the nature or essence of something—a basic or indispensable property. It should not substitute for “almost,” “chiefly,” “in effect,” “mainly,” “most of,” “principally,” or “virtually”: “The formation is *essentially* [mostly] limestone” or “Most of the formation is limestone.” To describe a mineral as “essential” is correct if you mean that the mineral is invariably part of a particular rock.

Evidence, evidenced

“Evidence” is overused by some scientists-cum-mystery writers. The writer who said, “No fossil evidence was found,” meant “No fossils were found.” Another writer who said, “In this limestone pebbles were in evidence,” should have said, “This limestone contained pebbles” (and would thereby have strengthened the sentence with a straightforward transitive verb).

“Evidenced,” the past tense of a verb best avoided, is not as meaningful as “shown,” “indicated,” or “proved.”

Exhibit (see “Display”)

Expressions of indefinite time and place (see also "While" and "Time words, * * *")

Careful writers reserve adverbial words and phrases such as "at times," "often," "sometimes," "when," and "while" for expressions relating to time.

Change this

These phenocrysts are often deeply corroded.

To this

Many of these phenocrysts are deeply corroded.

Following

"Following" is used appropriately as an adjective in the sense of "succeeding": "The analyses are given in the following table." "They left the following day." The participle "following" should be avoided, however, in the sense of "after": "*Following* [after] the earthquake, a series of smaller shocks rattled the Bay Area." "O'Brien left the ship following his dinner." "Kellerman went West following a prolonged illness."

Former, latter

"Former" and "latter" are so often misused that many careful writers decline to use them at all. Do not use them if the reader will have to look back to find what they mean. "Former" and "latter" cannot be used, of course, for more than two antecedents, as in "The granite consists of quartz, orthoclase, and biotite, the former constituting two-thirds of the rock." Some writers use these words without reason, as in the following sentences:

The quartz veins lie near bodies of muscovite-biotite granite, *the latter being* [which is] probably the youngest rock in the region.

The mines and the smelter were operated until the first of November, the *latter* [smelter] treating an average of 360 tons daily. (In this construction, "latter" seems to refer to "November.")

Most such deposits contain calcite, and where they carry copper-iron sulfides, the latter will oxidize to carbonates, silicates, and oxides. (Write, "Most such deposits contain calcite, and any copper-iron sulfides they carry will oxidize * * *.")

Some meanings can only be guessed or inferred from the context:

The concentration of the sulfide ion is so greatly affected by change of acidity that *the latter* [this change] is the principal factor determining the precipitation of sulfides.

One of the purposes of the reconnaissance was to examine certain prospects containing ores of uranium and vanadium, and it is to *the latter* [these ores] that this report is confined. (The context shows that "the latter" means the ores of both uranium and vanadium, not just vanadium, and not "certain prospects.")

The house and chimney swing with different periods under the impulse imparted by the ground, and the *latter* [chimney] is broken off, usually at the roof line. (As written, "latter" refers to "ground.")

"Former" and "latter" have no proper antecedents in the following sentences:

I have seen all the phenomena herein described but have minutely studied only small parts of them. It would be impossible for any one person to do the latter unless it were made a life task.

Former, latter—Continued

In color the chrysocolla ranges from reddish brown to brownish black; in a few places it is light blue. The *latter* [blue chrysocolla] has a vitreous luster and is crystallized, but the *former is* [brown varieties are] dull and in most places amorphous. (“In color” is superfluous in the first sentence.)

Found to be, known to be, seen to be

The word “found” intrudes without reason in “These rocks are *found* exposed at many places” and “The principal lakes *found* in this region * * *.” In the sentence “These lands *are known to* contain valuable deposits,” the words in italic may be easily spared. “Known to be,” “found to be,” and “seen to be” are generally superfluous, as in the sentences “The St. Peter sandstone is *known to be* jointed in places”; “In this region the deposits are *found to be* more arenaceous.” On the other hand, these phrases may be improperly omitted where they are required to complete the sense of a statement, as “Under the microscope the grains of sand are [seen to be] coated with iron.” “The rich ore, when examined closely, *contains* [is seen to contain] fine-grained drusy quartz.” “Under the lens, the tuff *has* [is seen to have] a eutaxitic texture.” (The texture is eutaxitic whether you see it or not, but it is seen to be eutaxitic under the lens.)

Grow

“Grow” should not be used to indicate changed conditions not involving growth: “The rocks *grow* [are] larger toward the apex of the fan.” “Downstream they *grow* [become] progressively smaller.” (Some rocks may grow larger, as by accretion, but none grow smaller.)

Horizon

The term “horizon” denotes mere position, and its use for “bed” or “stratum” is improper. A horizon has no thickness, being merely a stratigraphic level or plane. In the following sentences “horizon” is used improperly:

This *horizon* [interval] is about 1 meter thick.

Several thin *horizons* [beds] stand out from the rest.

The total thickness of the *horizon that carries the conglomerate* [conglomeratic beds] is 6 meters.

By virtue of conventional usage, however, “horizon” is applied in soil terminology to soil zones having thickness: “A, B, or C horizon” refers to a specific soil zone.

“-ic” and “-ical”

The preference today is the shorter ending (hydrologic, hydrographic) but no strong justification supports such choice. Except for conventional expressions (Geologic Division, Geological Survey), consistency within a report should govern usage. “Historic,” however, signifies momentous or ominous (“On this historic occasion”); “historical” means within the human cultural record and thus more accurately describes such natural events as earthquakes and volcanic eruptions, most of which were prehistoric.

Important, interesting	Some Survey writers overuse these words. “Important” should not be used for “large,” “abundant,” “conspicuous,” “valuable,” or any other term of indefinite meaning. What is interesting to one investigator may be uninteresting to another. For clarity, you should point out <i>why</i> something is interesting or important; then the need for either word may disappear, as follows: <p style="margin-left: 40px;">The <i>most important</i> [best? easiest? most traveled?] route across the quadrangle</p> <p style="margin-left: 40px;">The most <i>important</i> [productive] aquifer</p> <p style="margin-left: 40px;">The most <i>interesting</i> [complex?] microfold</p>
Inaugurate	Used every fourth year on or about January 20. For Survey projects and programs, “begin” and “start” are better.
Initiate	Used appropriately in some technical reports, perhaps, but generally is better applied to occult ceremonies in secret societies.
In question	Some authors write “in question” about matters that are not in question at all. Instead of “the landslide in question,” write “the landslide just mentioned” or “this landslide.”
In situ	“In situ” has wide usage in some technical fields and has specific connotations in terms such as in situ density, in situ temperature, and in situ theory, but for most purposes, “in place” is more meaningful and less stilted.
Intermittent, occasional, sporadic	“Intermittent” means starting and stopping at intervals. “Occasional” implies a randomness to something happening from time to time. “Sporadic” has a similar sense of randomness, but it also can refer to location (sporadic outcrops).
Interval	Use “interval” in its usual sense of time or space—a span of time between the recurrence of things or a space between objects. Do not write “glacial interval” for “glacial period.” “Interval” is also used to mean the thickness between horizons, as in “The rocks in this interval are sandstone and shale.” It should be applied to the thickness, not to the rocks themselves. A well log or a measured section may include a covered, concealed, or missing interval.
It	We couldn’t do without this very useful pronoun, but beware of grammatical pitfalls. As an impersonal pronoun, “it” often acts as an expletive that lacks an antecedent and takes the place of the subject: “It is snowing.” It may also take the place of and disagree in number with the true subject: “ <i>It was</i> the ammonoids <i>that</i> dominated in the Cretaceous, but <i>it was</i> the nautiloids <i>that</i> survived into the Tertiary.” (For a simpler construction, delete the words in italic.) When using “it” as a personal pronoun, take care to assure its proper antecedence, and avoid using “it” in two senses that might be confusing in the same sentence:

It—Continued

It has not been possible to identify it with any of the described forms, and it seems to be so distinct that it is probable that additional examples could be recognized. (The first and fourth “its” are expletives; the second and third are personal pronouns.)

If the contaminated ground water reaches the town water supply, it may spread pollution throughout the community. (Here the intended antecedent of “it” was “contaminated ground water” but could as easily have been “town water supply.”)

It is apparent, clear, evident, or obvious that

These phrases are somewhat patronizing and tend to antagonize the reader. What seems obvious to the writer, moreover, may be obscure to the reader. If something is obvious or apparent, perhaps it need not be said.

Its, it’s

“Its” is the possessive of “it.” “It’s” is the contraction of “it is.”

Keyboard, keyboarding

“Keyboard” and “keyboarding” fill a need beyond the words “type” and “typing” in regard to the use of computers for word processing, computer typesetting, computer graphics, and desktop publishing. Type a letter, yes, but keyboard the data for the digitizer. Keyboarding is more than mere typing.

Kind, type

“Kind” is the better word in reference to a general group or category. “Type” is better in reference to a specific group or category.

Last year, this year

Avoid these vague references. By the time your report is published, “last year” may be several years past. Be specific; cite the appropriate date.

Latter (see “Former”)

Lie, lay

“Lie,” meaning to recline or be situated, is an intransitive verb, which therefore takes no direct object: “Now I shall lie down to sleep.” Its forms are lie, lying, lay, and lain: “The sandstone lies on the shale.” “They lay undisturbed for thousands of years.” “They had lain there for centuries.”

The transitive verb “lay,” meaning to put, place, or prepare, requires a direct object: “Now I lay *me* down to sleep.” “Lay that pistol down.” The forms of “lay” are lay, laying, and laid. “Lie” and “lay” are confusing because of their similarities and seeming contradictions. The past tense of “lie” is the same as the present tense of “lay”: “Last night as I lay on my pillow”; “Lay (place) your head upon the pillow.” “She then laid her eggs in the carefully prepared nest where they lay until hatched by the warm sun.”

Limited

“Limited” should be used in the sense of “confined” but should not be used in the sense of “few,” “meager,” “scanty,” “short,” “slight,” or “small.”

Rainfall in this arid region is therefore *limited* [scanty].

Their interest in the fauna was *limited* [slight].

Limited—Continued

He had *limited* [few] interests other than ammonites.

Now available for a *limited* [short] time only.

But its use is proper in the following constructions:

His interest in the fauna was limited to the ammonites.

Sandbags piled along the railway limited the floodwaters to the eastern part of town.

Located, situated

“Located” and “situated” are generally superfluous, as in the following sentences:

One of the domes is *located* in sec. 31; the other is *located* in secs. 3 and 4.

South of the axis of the principal anticline *there is situated* a small syncline.

The outcrops are *situated* on the shore *and in* close *proximity* to deep water.

The largest of these outliers is *situated* 2 miles *to the* southeastward of the canyon.

This field is *located* 5 kilometers north of Bristol.

“Locate,” however, is properly used in setting well sites, surveying section corners, and recovering books missing from the library.

Majority, most

“Majority” means the greater part of something, but some of its connotations relate to populations of people, election results, reaching legal age, and the rank of major. “Most,” which is shorter and has no such connotations, is better for indicating greater degree, number, quantity, or size. Write “most of the grains,” not “the majority of the grains.”

Many, several, various, numerous

“Many” means an indefinite large number; more than a few. “Numerous” and “many” are close synonyms, but “many” is better because it is shorter. “Several” means more than two or three but fewer than many. “Various” is often misused for “many” or “several” in sentences such as “Various attempts were made to recover the gold,” and “Native arsenic was found at various places.” “Various” is better used in the sense of unlike or different: “Native arsenic is found in various settings.” (See also “Various, different.”)

Mineralization

Any of the many processes by which minerals form. Its use as a synonym for “deposit” is prevalent but ungrammatical (“tion” is the process, not the product). “They then drifted on the hanging wall in hope of finding richer *mineralization* [ore].”

More or less

“More or less” is overworked by many Survey authors, is less direct than “about,” “almost,” or “nearly,” and is occasionally erroneous, as in the following impossibilities:

more or less vertical

more or less less unique

more or less intact

more or less inert

more or less surrounded

Myself, herself, himself

Omar Khayyám to the contrary (“Myself when young did eagerly frequent * * *”), using the reflexive pronoun is poor form when the ordinary pronouns “I” or “me” will do:

The area was visited by William Jones and *myself* [me] in July.

Jones and *myself* [I] visited the area in July.

After a few perfunctory remarks the chairman introduced *myself* [me] to the audience.

Number of

“A number of” usually connotes “several” or “not many,” but it literally is ambiguous. Use “a few” or “several.” If you know the actual number, use it, even with “about” to indicate uncertainty.

Occur

“Occur” is the refuge of writers who lack the time or imagination to think of a more appropriate verb. Note the following limp sentences:

Trees *occur* [grow, flourish] on the north-facing slopes.

Waterfowl *occur* [gather] here in great numbers.

The mines *occur* [are] in Breathitt County.

A well-exposed occurrence of dolomite sheared by faulting occurs [is well exposed, crops out] near Boulder Creek.

Dikes with variable morphologies occur in the study area. (Change to: Dikes in the study area have varied morphologies.)

Exposures of the most richly fossiliferous Lower Ordovician strata in the United States occur [are exposed] about 80 km west of Delta, Utah. (Better yet, substitute the active verb “crop out.”)

Occurrence

“Occurrence” is best used, if at all, to mean something that takes place, such as an event, happening, or incident (for example, “mode of occurrence”). “Occurrence” has been used inaccurately in many geologic reports to connote a mineral deposit itself, especially a deposit of indefinite but low concentration or value, as opposed to an exploitable resource. (See section on “Mineral Reserves, Resources, Resource Potential, and Certainty,” p. 95).

Over, under, more than, less than

“Over” and “under” are used in some phrases where “more than” and “less than” or “fewer than” would be better. The use of “over” in the sense of “more than” and of “under” in the sense of “less than” or “fewer than” is not grammatically erroneous, but “over” and “under” should not be used where they might be confusing, as in some of the following sentences:

The dolomite dips eastward under over 6 meters of muscovite-biotite schist.

Even under the best condition it was not profitable to mine coal under 2 feet thick or over 200 miles from market. (Here, “under” has also been used in two different senses in one sentence.)

The burning has advanced along the coal bed for *over* [a distance of more than] 300 meters *and under* [beneath] 300 meters of overlying material.

Over, under, more than, less than—
Continued

The ore generally lies *under* [beneath] more than 6 meters, and in some places *over* [more than] 30 meters, of sand and clay overburden. (Better yet, write: The ore generally lies beneath more than 6 meters of sand and clay, and in some places more than 30 meters.)

“Upward of” is also used undesirably for “more than,” as in “The project will cost upward of a million dollars.” “Better than” in the same sense has a barbarous double meaning.

“Over” or “above” may be misleading in such sentences as “Oxidation extends to depths *above* [of more than] 640 meters.” (A better rewrite would be: “Oxidation extends deeper than 640 meters.”)

Part, portion, partly, and partially

“Portion” suggests an assigned or allotted part: “Take your portion and go.” If that implication is not intended, the preference is for “part.” Choose the shorter, simpler word. Some writers use “partially” when “partly” would be better, although “partly” and “partially” are not strict synonyms. “Partly” is better in reference to part of a whole, as in “The valley is partly filled with alluvium.” “Partially” is better when the meaning is “to a certain degree or measure,” as in “The Leadville Limestone was partially metamorphosed” or “This outcrop has been partially weathered.” Many readers may not detect the subtlety. “Partial” and “partially” also may imply partiality or bias.

Percent, percentage (proportion)

Survey style forbids use of “percent” except with a numeral, as “4 percent copper.” By this usage, “a large percent” is incorrect; the correct phrase would be “a large percentage.” “Percentage” is synonymous with “proportion”; it should not be used when no proportion is being expressed:

The greater *percentage* [part] of the soil of the area is of glacial origin.

“Percent” is preferred to “percentage” for table headings. If other terms, such as “meters” and “centimeters,” are abbreviated in a table, “percent” may be abbreviated as “pct”; it is not abbreviated in text. The symbol “%” may also be used in tables, but in small type it is not as easily read as “pct.”

Precision (see “Accuracy, precision”)

Present, presence

“Present” and “presence” are favorites of many writers but are generally superfluous, as in the following sentences:

The undulating strata mark one of the many local unconformities *present* in the arkose.

Here cacti are *present in greater abundance* [more abundant] than on the plateau.

In most of its facies quartz is the most abundant mineral *present*.

The metallic minerals *present* in the ores * * *.

Blocks of sandstone are *present* scattered over the surface.

Present, presence—Continued

In this area there are several irregularities *present*. (This area has several irregularities.)

Some of the zinc *present* in the ores is saved.

The presence of open channels that extend downward to caverns may be seen at several places.

The presence of the other sulfides of copper were not noted in the district. (Wrong subject but right verb).

Prominent (see “Conspicuous”)

Quite, rather, somewhat

These vague descriptors are best avoided in technical writing.

Range (see also “Vary”)

Loose comparisons can be made to well-known objects (“melon-size boulders”; “larger than a bread box”), but specific ranges require expressed limits. When “range” is used, the prepositions “from” and “to” must also be used, and for literacy the adverbial phrases “in thickness,” “in length,” “in width,” and so on must be used instead of the adjectives “thick,” “long,” or “wide.” “The dikes range in thickness from 0.5 to 5 m.” Contrast that with “The dike is 5 m thick.” The use of “range” requires two limits—don’t say, “ranges up to * * *.” If only the upper limit is stated, alternative phrasing should be used, such as “is as much as” or “reach a maximum of.”

“Vary,” rather than “range,” should be used for changes or fluctuations such as those related to flow, stream width, tidal levels, turbidity, or salinity: “The water level in the well varies yearly and seasonally; during the spring the level normally ranges from 10 to 15 m below ground surface.”

Take care in the use of “zero,” as zero is significant when it is stated in a measurement. A reader who is told that “Two coal beds are separated by 0 to 10 cm of bone” may wonder how much separation is made by 0 cm of bone. However, in the sentence, “The Livesay Shale ranges from 0 to 7 m in thickness,” it is clear that the formation is locally nonexistent.

Rare, scanty, scarce, sparse

“Rare” denotes something very uncommon or few in total number: “rare old coins”; “rare and endangered species”; “rarely euhedral.”

“Scanty” implies bare sufficiency or an inadequate quantity: “scanty rainfall.”

“Scarce” applies to ordinary things locally not abundant: “Outcrops are scarce in the deeply weathered saprolite.”

“Sparse” means spread thinly: “sparse crystals of pyroxene”; “sparse gray hairs on a shiny balding pate.”

Sample, sample No., sample number

Drop the “No.” or “number.” “Sample 00,” “specimen 00,” or “drillhole 00” is the preferred usage in text, tables, and figures. “Sample No.” is an acceptable column head in a table, however.

Several (see “Many, several, various, numerous”)

Secure

“Secure” is appropriate usage for activities related to battening hatches, bolting doors, or guaranteeing the blessings of liberty to ourselves and our posterity but is stilted for getting concert tickets, seats at the ball game, or specimens for analysis. (“Did you secure the specimens?” “Yes, I locked them in the vault.”)

Significant (see also “Important, interesting”)

Many Survey writers misuse this word, which means “important, having a meaning;” it does not mean “large.” “Significant amounts of calcium are present in the rocks” should be rewritten as “Calcium content of the rocks is high.”

Since (see “As, since, because”)

So, so that

“So” by itself is a coordinating conjunction used to join clauses of equal rank: “The laboratory results were inconclusive, so I requested more tests.” When used as a subordinating conjunction (as when introducing a clause that gives the reason for an action), “so” should be followed by “that”: “We have described our results in detail so that the basis for our interpretation will be clear.”

Structure, structural feature

In geology, the term “structure” is properly applied to the spatial relationships of rocks. “Structure” should not be used synonymously for “structural feature” nor for such features as “fold,” “fault,” “anticline,” “syncline,” “pipe,” “neck,” or “batholith.” Note the following indiscretions:

The producing *structures* [folds] are two closed anticlines.

Surprisingly, the *structure* [anticline] has been found [to be] barren of oil and gas in the Tensleep and Phosphoria Formations.

There has been considerable speculation as to the type of fold that exists on this structure. [The structure of this fold has been the subject of considerable speculation.]

Superfluous prepositions—at, from, of, on, to, with

The use of a verb plus a preposition to express an idea that may be conveyed by some other verb alone may lead to the undesirable doubling of prepositions:

This can be *dispensed with* [spared] with advantage.

The conditions *met with* [observed, faced] in the field.

A large production is not to be *looked for* [expected] from these deposits.

Placer mining has been *carried on* [done] on this stream. (Or better yet: Placer deposits have been mined from this stream.)

In “a thickness of from 2 to 4 meters” the “from” should be omitted. So also, in “The water rises to within 3 meters of the surface,” the “to” is superfluous. Prepositions are doubled or tripled badly in the following sentences:

Each of the veins has been drifted on for from 15 to 20 meters. (Drifts have been run 15–20 meters on each vein).

**Superfluous prepositions—at, from,
of, on, to, with—Continued**

This well was *brought in* [completed] in 1986.

This is equivalent to coal of *at least* \$50 [or more] a ton.

A newscast stating that “The march will reach the State line in *from between* 12–15 hours” used three prepositions where one would have sufficed.

“Of” is superfluous after “permit,” as in the phrase “too poorly preserved to permit *of* identification.”

“Of” is multiplied needlessly in many phrases, as in “An estimate of the cost of *the operation of* [operating] the filter.” In most such phrases a noun ending in “tion” and the “of” following it should be replaced by a gerund, ending in “ing.” Many phrases in which “of” is repeated can be rewritten with advantage. “Following the discovery of the character of this deposit” means “After the character of this deposit was discovered.”

Terrain, terrane

“Terrain” refers to a topographic or geographic landscape configuration—for example, a “hilly terrain,” a “wooded terrain.” “Terrane” refers to a lithologic or geologic areal expanse—for example, a “metamorphic terrane,” a “basaltic terrane.” If in doubt about either usage, find an appropriate substitute, as neither term is indispensable.

That, which (see p. 143)

There are, it is

Expletives such as “There are,” “There were,” and “It is” are effective in some constructions, but more commonly they (1) subordinate the real subject, (2) add needless words, and (3) diminish the strength of the sentence. Merely deleting the expletive and inserting the weak verb “is” or “exists” is not apt to improve the sentence. In the following examples, active verbs have been substituted to strengthen the constructions.

There has been some faulting subsequent to the deposition of the ore. (Recast as, “Some faulting followed the deposition of the ore.”)

It is the belief of the project geologist [believes] that the alignment is landslide.

There are many other primary minerals containing phosphorus.

There were in that same country prospectors *abiding* [lived] in the hills.

There is a probability that some of the veins may have had their gold content increased by enrichment. (Recast as, “The gold content of some veins may have been enriched.”)

There are valuable deposits in this area. (Recast as “This area contains valuable deposits” not “Valuable deposits exist in this area.”)

An initial “There is” or “There are” may undesirably detach a sentence from the preceding one, as in the following example:

The Niagara is mainly a light-gray dolomite. *There are* [It contains] both thick and thin beds and, at certain horizons, *there is* considerable chert.

There are, it is—Continued

Some appropriate usages:

It is raining!

There is still hope.

It is, sir, as I have said, a small college, and yet there are those who love it

Once upon a time there were three bears.

Thick, thickness

The phrase “in thickness” and not the adjective “thick” must be used after “ranges.” Write, “The bed ranges from 12 to 15 meters in thickness,” “The bed ranges in thickness from 12 to 15 meters,” or “The bed is 12 to 15 meters thick.”

This, these, those

The demonstrative pronouns “this,” “these,” and “those” should not be used alone if (1) their antecedents are in doubt, (2) no antecedents have been expressed, or (3) the reader must back up—even momentarily—to find their antecedents. Lacking other clues, the reader will tend to link a pronoun to the nearest available noun, as follows:

Twenty-nine master’s theses dealing with various aspects of the geology were produced by students. These are on file [the theses, not the students] at the university library.

The rocks contain numerous drusy cavities. In these, minerals of later age have been deposited. (Repeat “cavities” after “these” and add a comma.)

Time words, place, and state of being

If words (mostly adverbs) that strictly speaking denote time are used to denote place or state, the bewildered reader is forced to reread the construction to get the author’s meaning:

The pebbles are usually gray, but sometimes they are pink.

While the fault was buried by alluvium we were able to locate it by trenching.

These phenocrysts are often corroded.

Usually these rocks are right-side up.

Time words	Intended to mean	Time words	Intended to mean
Always-----	Everywhere	Sometimes --	In places, some of
Frequently, often ----	Commonly, many of	Usually -----	Commonly, most of
Now and then -----	Here and there	When -----	Where
Occasionally -----	Locally	While -----	Although, whereas
Since-----	Inasmuch as		

More examples and how to fix them:

[Many of] These fissures *often* intersect.

[Some of] These crystals are *sometimes* a centimeter or more in diameter.

[Some of] The volcanoes are *sometimes* practically extinct.

The complexity of the folding is *sometimes* very marked [at some places]. (Better: Locally, the folding is very complex.)

Pyrite is less common than marcasite, although it does occur *at times* [at some places]. (The second clause is redundant and should be omitted.)

Time words, place, and state of being—Continued

These rocks are *nearly always* red [at most places].

[Many of] These terraces are *frequently* covered with gravel.

[Few of] These pebbles *almost never* have striated faces.

The moraine is *seldom* less than a kilometer wide [in few places].

“When” is often misused for “where,” as in the following sentences:

When [Where] the thickness is greatest it is 75 meters.

The ore was richest *when* [where] it was most altered.

Toward, towards

Identical meanings, but “toward” is more common in American usage. Use either, but be consistent.

Typical

“Typical” should mean just what it says: that which typifies. Don’t illustrate the best outcrop in the quadrangle, for example, and caption it “Typical exposure of the Gunflint Shale” if the Gunflint typically forms a covered slope.

Undertake

Appropriate in funeral arrangements but stilted in technical writing.

Unique

“Unique” means one of a kind; it is absolute, not relative. Don’t say “less, more, more or less, or most unique.”

Value

“Value” in its abstract sense means the worth or desirability of something. In “Lead and zinc values are nearly equal, and their total exceeds the value of gold,” the reader is uncertain as to whether “values” refers to the percentage of the metals or to dollar value. To say “About 50 meters below level 6 the ore carried high values in silver and gold, some lead, and 10 to 25 percent excess silica” is ambiguous. In mathematics and statistics, “value” means any particular quantitative determination, as the different values of a variable.

Various, different (see also “Many, several, various, numerous”)

“Various,” meaning “different” or “diverse,” is misused for “many” or “several” in the following sentences:

Gold has been found on the beach and *various* [several] attempts have been made to recover it. (Unless various methods were used.)

Native arsenic was found at *various* [several] places.

“The rocks are of various colors” is correct, but “The rocks are variously colored” would be better (so as to eliminate the awkward “are of”).

“Different” is sometimes used carelessly, as in “I telephoned him different times” when the writer meant only “I telephoned him several times.” “Different” is sometimes used inappropriately, as in the following sentences:

The ore is associated with *different* [several] mineral groupings.

Different [Several] phyla are represented.

Various, different—Continued

“Different” may be used properly if degree of difference is to be expressed, as in “very different phyla,” (but “diverse phyla” would be clearer).

Vary, variable (see also “Range”)

The verb “vary” has both an intransitive sense (“Iron contents vary in samples of the ore”) and a transitive sense (“Vary the flow rate by adjusting the valve”). A “variable,” strictly speaking, is an abstract mathematical quantity whose value can be arbitrarily set. A physical parameter may assume varying values in repeated measurements, but it is not freely variable. Note the different meanings of variable:

Lava flows of *variable* [varied] composition.

Variable [Varied] phosphorous contents.

Fracture characteristics of rocks under variable stress conditions (in the laboratory).

Analyses using *variable* [varied] reagent concentrations.

The gold-silver values *are variable* [vary] in samples from Homestead Peak.

A variety of [Various] minerals *

Verbal, oral

“Verbal” refers to words. It is commonly used improperly for “oral,” which means “spoken.” “Verbal” is properly used in the sentence “The differences between the two accounts are only verbal”—that is, the ideas are practically alike, but the words are different. Communications of unpublished information should be called “written” or “oral” but not “verbal.” In the following example “verbal” is used correctly:

The text contained two explanations, one verbal and the other mathematical.

Very, much

The critics of *very* have a way of going too far and damning the laudable.

H.W. Fowler

“Very” is a useful intensifier in some contexts (very fine sand, very coarse sand; “I am very grateful”; “He is the very model of a modern major general”), but it should be used with caution in others (“The destruction was *very* appalling” is less effective prose than just “The destruction was appalling”). Overuse of “very” minimizes its value as an intensifier.

“Very” used with absolutes or superlatives is meaningless or cloddish (very unique, very highest, very unanimous, very meaningless).

As a modifier of past participles, “much” should generally be used instead of “very”: Though the andesite was not *very* [much] faulted [was little faulted?], it was *very* [much] altered.

“Very,” however, is a proper intensifier of “much”: “Are the rocks much faulted?” “Yes, very much so.”

Vicinity of, neighborhood of

“In the vicinity of” and “in the neighborhood of” are sometimes used unnecessarily for “about” or “nearly,” as in the following sentences:

Vicinity of, neighborhood of—Con.

The cost of production is *in the vicinity of* [about] 50 percent of the selling price.

Its population is *in the neighborhood of* [about] 1,500.

While

For clarity use “while” to mean contemporaneity—“at the time that,” but not to mean “although,” “whereas,” “and,” or “but.”

Appropriate:

Jones mapped *while* Martin napped.

Inappropriate:

Martin spent 2 weeks resolving geologic problems *while* [whereas] Jones spent a month studying the coal. (Did time move faster for Jones?)

Also:

While [Although] the fault was buried by alluvium we found its trace by trenching.

While [Although] work is progressing it is not completed.

Most of the precipitation falls as snow during the winter months *while* thunderstorms are common during the summer. (Change “while” to “although” or “but” and place a comma after “months.”)

Watershed (see “Drainage basin”)

With (see p. 131, under “Prepositions”)

Needless words and phrases

Many sentences can be strengthened by just deleting needless words and phrases. Like the troublemakers noted in the previous section, the common redundancies shown here in *italic* are easily rectified.

Throughout *the whole of* the Mesozoic Era.

Throughout the *entire* area.

A series of parallel ridges resembling *in their form* *

The problem is *a difficult one*.

There can be no doubt *but* that it is Cretaceous.

The Survey has not *as yet* finished its work in this region.

As yet no ore bodies of this type have [yet] been exploited.

The conditions were favorable for landslides *to occur*. (Or better yet: The conditions favored landslides.)

Equally *as well*.

It occurs in *disseminated* grains scattered through the rock.

Most of the intrusive masses are *of large size*.

The rock is dark green *in color*.

An innumerable *number of* tiny veins.

Needless words and phrases-
Continued

Contemporaneous *in age*.

The beds do not crop out *at the surface*.

This lies *on the southwest side* of the line of the fault. (Or better yet: of the fault line.)

The *color of the* fluorspar is dull green.

A report giving the results of the work is in *process of* preparation.

Subsequent to the formation of [After] the Pleistocene terraces [were formed] *there has been* considerable phosphate [was] deposited *along the streams* in the *form of* flood plains and bars *of* [along] the present streams.

No *side* streams enter Red River from the north.

At its base the formation lies on a remarkably even surface of granite.

About a mile *in a northwesterly direction from* [of] Fort Bayard.

Lenticular *in character*.

Grass Creek almost bisects the basin *into two parts*.

In every respect except size the Ashe County deposits are exactly like *those exhibited by* the Cranberry deposit.

The *down-dropped* block. (An up-dropped block would be peculiar. Write "downthrown block" or "downfaulted block.")

The ores are of igneous origin *originally*. (Or: The ores are igneous.)

—the highest at 365 meters and others *at lower levels* down to about 300 meters above sea level. (Others than the highest would, of course, be "at lower levels." The "above sea level" should be transposed after "365 meters"—with the first item to which it applies, rather than the last—to read as follows: —the highest 365 meters above sea level and others down to about 300 meters.)

In addition another similar dike. (If it is "another," it is "in addition"; if it is "similar," it can't be the same one and therefore must be "another." "A similar dike" tells the whole story.)

Needless words and phrases—
Continued

The phrases “as already stated” or “as described above” are generally unnecessary. Repetition of a statement in another connection may be perfectly justifiable, but the reader need not be reminded that it is a repetition—in fact, the reader may not realize it unless told so by the author. If you wish to refer to a place where a statement is given in more detail, the form “as explained in detail on page 00” or simply “(see p. 00)” may be used, but remember that you or your editor will have to scrupulously check all such entries in the page proof before final printing.

Introductory phrases, such as “It may be said that * * *,” “It might be stated that * * *,” “Concerning this matter it may be borne in mind that * * *,” “In this connection the statement may be made that * * *,” “With respect to the occurrence of these ores it has been found that * * *,” can generally be replaced by single words, as in the following sentence: “*There can be little doubt that this fissure is [undoubtedly] the prolongation of a fault of the same character as the one [like that] already described.*” If you write “It is important to note that * * *,” the reader may wonder if the rest of the report is not important enough to note.

“During the winter months” or “in the summertime” are commonly used for “during the winter” or “in summer.” Necessities of rhyme and meter may justify “the good old summertime,” but Survey reports are not written in metrical form.

“When I use a word,” Humpty Dumpty said, in a rather scornful tone, “It means just what I choose it to mean—neither more nor less.”

Lewis Carroll