

Chapter 2

Word Order

Why is this chapter important?

Just two or three badly constructed sentences may be enough for referees to initially recommend rejecting a paper and suggest having the English revised.

This chapter focuses on putting words in a sentence in the correct order. This correct order may be very different from the syntax of your own language.

Typical complaints of Referees

There were several sentences that I was simply unable to parse. I failed to work out what the subject was and what verb related to it, nor could I identify what adjective or what adverb modified what noun or verb. At times it was like trying to decipher a doctor's handwriting. I am of the opinion that one should be able at least to identify the various components of a sentence and how they relate to each other, even if one does not understand the precise meaning of each component.

Although it is well-structured, it is extremely difficult to read because of the somewhat labored English.

I was often only able to understand the logic of the sentence when I read the last word. The authors need to rearrange the components of their sentence so that the reader immediately understands the build up of the logic.

2.1 Basic word order in English

English has a strict order in which words can appear in a sentence. S1 shows an example of this order.

S1. The researchers sent their manuscript to the journal.

This order is rarely altered. It is:

1. subject (*the researchers*)
2. verb (*sent*)
3. direct object (*their manuscript*)
4. indirect object (*the journal*)

The key is to keep the subject, verb, direct object and indirect object as close to each other as possible. This is illustrated in S2, which maintains the exact order of S1.

S2. Last week *the researchers sent their manuscript to the journal* for the second time.

S3. **The researchers* last week *sent* for the second time *to the journal their manuscript*.

S3 is incorrect English. The position of *last week* and *for the second time* is wrong, and the indirect object comes before the direct object.

2.2 Compare word order in your language with word order in English

Native English-speaking readers are accustomed to finding the various parts of speech (noun, verb, adjective etc.) in the order given in Sect. 2.1. If these parts come in a different order, this requires more effort by the native reader to understand the whole meaning.

Even very banal differences in word order can affect readers. *White and black*, for instance, sounds strange to a mother tongue English person, the correct order is *black and white*. It would also sound strange to someone who speaks, for instance Chinese, Hungarian, Polish or Tamil, as in this case they use the same order as in English. But it is likely to sound far more normal to a Hindi, Italian or Spanish speaker, where white comes before black.

You can improve the order in which you put words and information in an English sentence if you analyze how you do it in your own language and then analyze the differences with English. Here are two examples, with which your language may share some similarities.

Germans don't like to begin sentences with the subject. For example, instead of "We have received your letter" they prefer "Your letter has reached us". German syntax dictates that the verb sometimes goes at the end of the clause or sentence, also making you wait for the main thrust of the sentence.

Russians have difficulties with constructing correct English sentences because unlike in English, there are no strict rules for word order. For example, in Russian a simple tongue twister that translates as “the mother was cleaning the window” would mean exactly the same thing if “mother” and “window” switch places. In English, it would of course make no sense.

2.3 Choose the most relevant subject and put it at the beginning of the sentence

Clear English requires that you put the subject at the beginning of the sentence, however you may have a choice of possible subjects.

X was elicited by Y.

Y elicited X.

In the simple example above, your choice will depend on whether you want to emphasize X or Y. The one you want to emphasize should be put as the subject.

As readers, we tend to focus on the areas of a sentence that come immediately before and after a full stop. This is because there is extra white space between one sentence and another, which acts as a restful pause for the eye. Our eyes are also drawn to the capital letter that begins each sentence. These are the moments where you potentially have the reader’s attention, so don’t waste them. If the first few words routinely contain no useful or new information, then it becomes very tedious. So the best solution is to shift ‘no value added’ phrases to later on in the sentence and preferably reduce them to one word. Otherwise you are encouraging readers to skim the whole time.

The sentences below (S1–S4) come from a paper written by a physicist in a physics journal. They all contain exactly the same information. However, there are four possible subjects:

- S1. Particularly interesting for *researchers in physics* is the new feature, named X, for calculating velocity.
- S2. *Physics* now has a new feature, named X, for calculating velocity.
- S3. *Velocity* can now be calculated with a new feature, named X, which is particularly interesting for physicists.
- S4. *X is a new feature* for calculating velocity. It is particularly interesting for physicists.

When deciding what the subject is for your sentence, it is generally best to choose the most recent or newest information. S1 and S2 refer to known situations - physics, and physicists - they do not give any new information, so they are not well constructed sentences.

S3 also begins with a known, in this case *velocity*. This is fine if velocity is the main focus. However, given that velocity is a common factor for physicists, then S4 may be the best solution as it begins with completely new information. The choice between S3 and S4 will depend on where the author wants to put the focus.

2.4 Choose the subject that leads to the most concise sentence

If your sentence is short and you have two possible subjects, which you could indifferently put at the beginning of the sentence, then choose the subject that will give the shortest sentence (S2 rather than S1).

- S1. The *most significant values* are highlighted in *Table 1*.
- S2. *Table 1* highlights the *most significant values*.

Shorter sentences are often obtained by using active (S2) rather than passive (S1) verbs.

2.5 Don't make the impersonal *it* the subject of the sentence

Putting *it* first often delays the subject. Use modal verbs (*might, need, should* etc.) where possible (Sect. 5.11).

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
It is probable that this is due to poor performance.	This <i>may / might / could</i> be due to poor performance.
It is possible do this with the new system.	This <i>can</i> be done with the new system.
It is mandatory to use the new version.	The new version <i>must</i> be used.

2.6 Don't use a pronoun (*it, they*) before you introduce the noun (i.e. the subject of the sentence) that the pronoun refers to

It is OK to use a pronoun at the beginning of the sentence, provided that this pronoun refers back to a noun in a previous sentence (i.e. a backward reference). For example:

- S1. *Beeswax* is a very important substance because ... In fact, *it* is ...

In S1 it is clear that *it* refers to beeswax. But in S2 *it* refers to a noun that comes after (i.e. a forward reference). The reader does not know what the pronoun refers to and thus has to wait to find out.

- S2. *Although *it* is a very stable and chemically inert material, studies have verified that the composition of *beeswax* is ...
- S3. Although *beeswax* is a very stable and chemically inert material, studies have verified that *its* composition is ...

S3 immediately tells the reader what the subject is.

2.7 Put the subject before the verb

The subject in English must come before their verb. Here are some examples of simple mistakes (OVs) and their corrected versions (RVs). The subjects are highlighted in italics.

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
In the survey participated <i>350 subjects</i> .	<i>Three hundred and fifty subjects</i> participated in the survey.
Were used <i>several different methods</i> in the experiments.	<i>Several different methods</i> were used in the experiments.
With these values are associated <i>a series of measurements</i> .	<i>A series of measurements</i> are associated with these values.

Say what something is before you begin to describe it. In the OVs below, the authors have delayed the subject (in italics) until the end of the clause. They have used an introductory subsidiary clause to stress the importance or evidence of the subject before telling the reader what the subject something is. This is not what is normally done in English, as indicated by the RVs.

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
Among the factors that influence the choice of parameters <i>are time and cost</i> .	<i>Time and cost are</i> among the factors that influence the choice of parameters.
Of particular interest <i>was the sugar transporter</i> , because ...	<i>The sugar transporter was</i> of particular interest, because ...
Important parameters <i>are conciseness and non-ambiguity</i> .	<i>Conciseness and non-ambiguity are</i> important parameters.

2.8 Keep the subject and verb as close as possible to each other

Word order in written English tends to reflect the way English is spoken. When native speakers talk they usually keep the subject and verb as close as possible. This is because the verb contains important information.

In S1 and S2, you force the reader to wait too long to find out what the verb is and thus delay important information.

- S1. *A gradual decline in germinability and vigor of the resultant seedling, a higher sensitivity to stresses upon germination, and possibly a loss of the ability to germinate *are recorded* in the literature [5, 8, 19].

- S2. *People with a high rate of intelligence, an unusual ability to resolve problems, a passion for computers, along with good communication skills *are generally employed* by such companies.

S3 and S4 are better solutions because they shift the verb to the beginning of the sentence and make the meaning / direction of the sentence immediately clear.

- S3. There is generally a gradual decline in germinability and of the resultant seedling, followed by a higher sensitivity to stress upon germination, and possibly a loss of the ability to germinate [5, 8, 19].
- S4. Such companies generally employ people with a high rate of ...

Both S3 and S4 use active verbs. But sometimes you may need to use the passive and you may have several subjects for the same verb. In such cases it is best locate the passive verb after the first subject (S5):

- S5. People with a high rate of intelligence are generally employed by such companies. They must also have other skills including: an unusual ability to ...

2.9 Avoid inserting parenthetical information between the subject and the verb

If you insert more than a couple of words between the subject and the verb this will interrupt the reader's train of thought. In any case readers will consider this parenthetical information to be of less importance.

Sentences are much easier to read if they flow logically from step to step, without any deviations.

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
The result, after the calculation has been made, can be used to determine Y.	After the calculation has been made, the result can be used to determine Y.
This sampling method, when it is possible, is useful because it allows	When this sampling method is possible, it allows us ...
These steps, owing to the difficulties in measuring the weight, require some simplifications.	Owing to the difficulties in measuring the weight, these steps require some simplifications.
	These steps require some simplifications, owing to the difficulties in measuring the weight

The first RV highlights that it is best to put information in chronological order. The last RV shows that you can put the parts of a sentence in a different order depending on what you want to give the most emphasis to.

2.10 Don't separate the verb from its direct object

When a verb is followed by two possible objects, place the direct object (i.e. the thing given or received) before the indirect object (the thing it is given to or received by). This kind of construction is often found with verbs followed by 'to' and 'with': associate X with Y, apply X to Y, attribute X to Y, consign X to Y, give X to Y (or give Y X), introduce X to Y, send X to Y (or send Y X).

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
We can <i>separate</i> , with this tool, <i>P and Q</i> .	We can <i>separate P and Q</i> with this tool.
We can <i>associate</i> with these values <i>a high cost</i> .	We can <i>associate a high cost</i> with these values.

In S1 below, the direct object is very long and consists of a series of items, so the reader has to wait a long time before discovering what all these items are associated with. The solution, S2, is to put the indirect object after the first item and then use 'along with'. S3 and S4 are other alternatives to dealing with this problem.

- S1. *We can *associate* a high cost, higher overheads, a significant increase in man-hours and several other problems *with these values*.
- S2. We can *associate* a high cost *with these values*, *along with* higher overheads, a significant increase in man-hours and several other problems.
- S3. We can *associate several factors with these values*: a high cost, higher overheads, a significant increase in man-hours and several other problems.
- S4. *The following can be associated with these values*:
 - i. a high cost
 - ii. higher overheads
 - iii. a significant increase in man hours

2.11 Put the direct object before the indirect object

In the OVs below, the indirect object (in italics) has been placed at the beginning of the sentence or main clause. This is not the usual word order in English.

ORIGINAL VERSION (OV)	REVISED VERSION (RV)
However, only <i>for some cases</i> this operation is defined, these cases are called ...	However, this operation is only defined <i>for some cases</i> , which are called ...
Although <i>in the above references</i> one can find algorithms for this kind of processing, the execution of ...	Although algorithms for this kind of processing are reported <i>in the above references</i> , the execution of...
This occurs when <i>in the original network</i> there is a dependent voltage.	This occurs when there is a dependent voltage <i>in the original network</i> .

2.12 How to choose where to locate an adverb

The rules regarding where to locate adverbs are not difficult to understand, but there are many of them. Here are some basic rules. For more detailed rules see the companion volume *English for Research: Usage, Style, and Grammar*.

MOST ONE-WORD ADVERBS, PARTICULARLY ADVERBS OF FREQUENCY

(a) Immediately before the main verb.

Dying neurons do not *usually* exhibit these biochemical changes.

The mental functions are slowed, and patients are *often* confused.

(b) Immediately before the second auxiliary when there are two auxiliaries.

Language would *never* have arisen as a set of bare arbitrary terms if ...

Late complications may not *always* have been notified.

(c) After the present and past tenses of 'to be'

The answer of the machine is *always* correct.

The adverbs *only* and *also*, which are two of the most frequently used adverbs in research papers, follow the above rules (a–c).

For special emphasis, some adverbs (*sometimes*, *occasionally*, *often*, *normally*, *usually*) can be placed at the beginning of a sentence,

Normally X is used to do Y, but *occasionally* it can be used to do Z

ADVERBS OF CERTAINTY

Adverbs of certainty (e.g. *probably*, *certainly* *definitely*) come immediately before the *negation* (*not* and contractions e.g. *don't*, *won't*, *hasn't*)

These random substitutions will *probably* not have a major effect.

ADVERBS OF MANNER

An adverb of manner indicates how something is done. They are generally placed directly after the verb, or after the direct object

The curve rises *steadily* until it reaches a peak at 1.5.

This will help system administrators *considerably* to reboot the system.

Some adverbs of manner can go before the verb. But, since all adverbs of manner can always also go after the verb or noun it is best to put them there and then you will never make a mistake.

ADVERBS OF TIME

These go in various positions.

- S1. Patients were treated *once a week*, and surgery was carried out *as soon as possible* after the decision to operate.
- S2. *There has *recently* been an increasing interest in 3D cellular phones.
- S3. **Recently* there has been an increasing interest in 3D cellular phones.
- S4. **In the last few years* there has been an increasing interest in 3D cellular phones.

S2–S4 are very frequently found as the first sentence in an Abstract or an Introduction. Because of this frequency and because they delay the subject of the sentence (3D phones), such beginnings have a very low impact. They are better replaced with:

- S5. 3D cellular phones have *recently* become the focus of considerable interest.

ADVERBS OF CONSEQUENCE AND ADDITION

Your aim is to try to put the subject at the beginning of the sentence. So if possible try to delay adverbs that indicate a consequence or add further support to a positive situation. Thus S1 and S2 below would normally be better rewritten as S3 and S4.

- S1. **For this reason / It follows that / As a consequence / As a result*, it is not a good idea to use the old system.
- S2. *The new system should be used. *In addition*, it should be integrated with all the data from the previous project.
- S3. The old system should *thus / therefore / consequently* not be used.
- S4. The new system should be used. It should *also* be integrated with all the data from the previous project.

If several sentences in sequence begin with a link word or phrase, this makes the paragraph very tedious for the reader.

ADVERBS OF CONTRAST AND OTHER LINK WORDS

Link words that indicate a contrast (e.g. *however; nevertheless, in contrast*) can be used at the beginning of the sentence. The information they give is crucial to the reader - they immediately tell the reader that there is going to be a change in direction of the logical flow of the paragraph. In contrast, link words that simply describe a consequence continue the flow rather than break it.

Other link words that are best placed at the beginning of a sentence are those that:

- enumerate points (*firstly, secondly, finally*)
- add further negative support to a negative concept (*moreover*)
- indicate a concession or begin an explanation (*since, although, despite the fact*)
- indicate an alternative (*alternatively*)
- attract attention or express some kind of emotion (*surprisingly, intriguingly, regrettably, unfortunately*)
- specify (*specifically, in particular*) - however in most cases these can simply be deleted

The words listed above are generally followed by a comma:

Firstly, the component is subjected to ...

Interestingly, few works have examined ...

Some link words tend to go in the middle of a sentence:

This tool costs \$400, *whereas* that tool costs \$300.

2.13 Put adjectives before the noun they describe, or use a relative clause

Adjectives normally go before the noun they describe. S1 is thus correct, but S2 is not a possible construction in English.

S1. This is an *interesting* paper.

S2. *This is a paper *particularly interesting* for PhD students.

If you want to put the adjective after the noun, you have to change the construction.

S3. This paper is *particularly interesting* for PhD students.

S4. This is a paper *that is particularly interesting* for PhD students.

S4 resolves the problem by inserting *that is* (which could also be replaced in non-restrictive cases by *which is*, see Sects. 6.1 and 6.2). Likewise, S5 below, is wrong because the description comes after the noun it refers to and no relative clause has been used.

S5. *We examined a patient, 30 years old, to investigate whether ...

S6. We examined a patient, who was 30 years old, to investigate whether ...

S7. We examined a 30-year-old patient to investigate whether ...

S6, which uses a relative clause, is a possible replacement for S5, but S7 is the best solution. Note that in S7 the word *year* is in the singular. This is because *year* functions as an adjective that describes a noun (*patient*). Similarly, we say a *three-meter tube*, a *ten-kilometer journey*.

Note also the use of hyphens when nouns are used to modify other nouns. However, do not worry about this aspect, many native speakers also make mistakes with hyphens and referees are very unlikely to make comments if you make mistakes in this area.

2.14 Do not insert an adjective between two nouns or before the wrong noun

Generally, you cannot put an adjective between two nouns. Thus S1 and S2 should be rewritten as S3 and S4.

S1. *The editor *main* interface

S2. *The algorithm *computational* complexity

- S3. The main interface of the editor
- S4. The computational complexity of the algorithm

Do not put an adjective before a noun that it does not describe. S5 is not correct, S6 is.

- S5. *The main document contribution
- S6. The main contribution of the document

2.15 Avoid creating strings of nouns that describe other nouns

You cannot indiscriminately put nouns in front of each other. For example, you cannot say *art state technology* (state-of-the-art technology) or *mass destruction weapons* (weapons of mass destruction). But you can say *a software program* or *an aluminum tube*.

Native speakers do tend to string nouns together, but they intuitively know how to do it. In fact, they are not following any written rules, but they base themselves on examples that already exist. If you are a non-native speaker I strongly recommend that you verify on Google Scholar that your proposed string of nouns already exists and has been used by native English-speaking authors.

If it does not exist, it will sound very strange to any native English-speaking referees, and more than one occurrence of such structures could cause the referee to recommend that your English be revised.

If it has not been used by native English-speaking authors, then you need to change the order of the words, which normally entails inserting some prepositions. To learn how to do this, see Sect. 11.12.

2.16 Ensure there is no ambiguity in the order of the words

Ambiguity arises when a phrase can be interpreted in more than one way.

- S1. *Professors like annoying students.
- S2. *I spoke to the professor with a microphone.

In S1 it is not clear if ‘annoying’ describes the students, or it refers to what professors enjoy doing. Depending on the meaning, S1 could be disambiguated as in S3 or S4:

- S3. Professors like to annoy their students.
- S4. Professors like students who are annoying.

In S2 – did I use the microphone or was the professor holding it? Depending on the meaning, S2 could be disambiguated as in S5 or S6:

- S5. Using a microphone, I spoke to the professor.
- S6. I spoke to the professor who was holding a microphone.

S7 is another example where poor word order can create confusion:

S7. *To obtain red colors, insects and plant roots were used by indigenous people.

In S7 readers may initially think that *red colors* and *insects* are part of the same list. Readers will only understand that *insects and plant roots* is the subject of the verb when they get to the end of the sentence. To avoid this problem there are two possible solutions. S8 puts *insects and plant roots* as the main subject and S9 *primitive people*. The choices of S8 or S9 will probably depend on whether the primitive people have already been mentioned or not.

S8. Insect and plant roots were used to obtain red colors.

S9. To obtain red colors, primitive people used insects and plant roots.

We tend to read words in small groups. Often we think that if two or three words immediately follow each other they must be related in some way. S10 is initially confusing.

S10. The European Union (EU) adopted various measures to combat these phenomena. This resulted in smog and pollution levels reduction.

When we read *resulted in smog and pollution*, our initial interpretation is that the smog and pollution are the result of the EU's measures. Then when we move on and read *levels* we have to reprocess the information. This is not important if readers have to change their interpretation only once or twice in a paper. But if they have to do it many times, the cumulative effort required becomes too much. Some readers will stop trying to guess the meaning and stop reading. In your case, it may mean that your paper could be initially rejected. S11 is a much clearer version of S10.

S11. The European Union adopted various measures to combat this phenomena. This resulted in a reduction in smog and pollution [levels].

Another problem with word order is when you are comparing your methods and results with those of another author. In S12 below it is not 100% clear whether you are or are not in agreement with Walker's suggestion.

S12. We also demonstrated that x does not equal y as suggested by Walker (2011).

Does S12 mean that Walker suggested that x is equal to y and is thus in contrast to what you are saying (S13 and S14), or that he, like you, found that x does not equal y (S15).

S13. Unlike what was suggested by Walker (2011), we demonstrated that x does not equal y.

S14. Our findings do not concur with Walker (2011). In fact, we demonstrated that x does not equal y.

S15. In agreement with Walker (2011), we demonstrated that x does not equal y.

Ambiguity (Chap. 6) affects readability. If you force your reader to constantly interpret what you are writing, the reader will soon want to stop reading.

2.17 Summary

- Basic English word order is: (1) subject, (2) verb, (3) direct object, (4) indirect object. Keep these four elements in this order and as close to each other as possible.
- If you have a choice of subjects, choose the one that is the most relevant and leads to the shortest construction.
- Avoid delaying the subject. So don't begin a sentence with the impersonal *it*.
- Avoid inserting parenthetical information between the subject and the verb.
- Most adverbs are located just before the main verb, and before the second auxiliary verb when there are two auxiliaries.
- If possible, delay adverbs until later in the sentence. The main exceptions to this rule are adverbs of contrast and those that enumerate points.
- Put adjectives before the noun they describe, or use a relative clause. Do not insert an adjective between two nouns or before the wrong noun.
- Do not indiscriminately put nouns in a string.
- Avoid ambiguous word order.

Rules tend to have exceptions. The rules given in this section also have exceptions, and so you might find sentences written by native English speakers that contradict my rules.