# Writing exercise 07: Sentence Structure Considerations

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### Excerpts from Strunk & White: Elementary Principles of Composition [4th ed., pgs. 26-32]

**19. Express co-ordinate ideas in similar form.**

This principle, that of parallel construction, requires that expressions of similar content and function should be outwardly similar. The likeness of form enables the reader to recognize more readily the likeness of content and function.

**20. Keep related words together.**

The position of the words in a sentence is the principal means of showing their relationship. Confusion and ambiguity result when words are badly placed. The writer must, therefore, bring the words and groups of words that are related in thought and keep apart those that are not so related.

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| He noticed a large stain in the rug that was right in the center. | He noticed a large stain right in the center of the rug. |
| You can call your mother in London and tell her all about George’s taking you out to dinner for just two dollars. | For just two dollars you can call your mother in London and tell her all about George’s taking you out to dinner. |

**22. Place the emphatic words of a sentence at the end.**

The proper place in the sentence for the word, or group of words, which the writer desires to make most prominent is usually the end.

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| Humanity has hardly advanced in fortitude since that time, though it has advanced in many other ways. | Humanity, since that time, has advanced in many other ways, but it has hardly advanced in fortitude. |
| This steel is principally used for making razors, because of its hardness. | Because of its hardness, this steel is principally used in making razors. |

### Examples from published papers1-3 (transitional words/phrases highlighted):

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The sparse list of known c-di-GMP-responsive transcriptional regulators includes the TetR-like activator LtmA from *Mycobacterium smegmatis* (Li and He, 2012), the CRP-FNR-like transcription factor Clp from *Xanthomonas* (Chin et al., 2010, Leduc and Roberts, 2009), Bcam1349 from *Burkholderia* (Fazli et al., 2011), the NtrC-type protein FleQ from *Pseudomonas aeruginosa* (Baraquet and Harwood, 2013), and VpsR from *Vibrio cholerae* (Srivastava et al., 2011).

* Parallel construction here makes it easy to understand what type of transcription factor and where it comes from, even in a rather long list

In many proteolytic clostridia, Stickland metabolism is a core bioenergetic scheme defined by the coupled oxidation of one amino acid (Stickland donor) and the reduction of another (Stickland acceptor) (22, 23). Briefly, Stickland donors are either oxidatively deaminated or decarboxylated to yield reducing equivalents (NADH) and ATP through substrate-level phosphorylation; Stickland acceptors are reduced or reductively deaminated in an NADH-dependent manner, ultimately regenerating NAD+ for further oxidations (20, 22, 23).

* Keeping the oxidation (donor) and reduction (acceptor) close together makes the sentence clearer than it would be otherwise (Note also the parallel construction)

Many *Proteobacteria* and *Nitrospirae* species use acyl-homoserine lactones (AHLs) as quorum sensing (QS) signals. The AHLs are produced by a LuxI-type synthase and detected by a cognate LuxR-type receptor, which binds to specific DNA sequences, thus affecting gene transcription ([1](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B1) [-](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B2) [5](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B5)). In many bacteria, AHL QS is important for success in mutualist or pathogenic interactions with eukaryotic hosts ([1](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B1) [-](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B2) [5](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B5)). The list of such bacteria includes nitrogen-fixing symbionts of legume plants, including species of *Rhizobium, Bradyrhizobium, Sinorhizobium,* and *Mesorhizobium* ([6](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B6) [-](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B7) [12](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B12)). There are a few reports on QS in the genus *Mesorhizobium* ([9](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B9), [13](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B13), [14](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B14)), including two, which provide evidence that QS is involved in nodulation of host legume roots ([11](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B11), [15](https://journals.asm.org/doi/full/10.1128/mbio.01010-23?rfr_dat=cr_pub++0pubmed&url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org#core-B15)).

* Placing *Mesorhizobium* at the end of the list helps to emphasize it (the topic of this paper); it also helps the logical flow to the next sentence

### Additional sentence structure tips:

* Short sentences are usually best.
* Avoid overly long, convoluted clauses or parenthetical phrases: the reader will get lost.
* Pay attention to the basics of grammar: subject/verb agreement, pronoun referents, etc.
* Be mindful of punctuation: use commas, colons, and semi-colons correctly.

### Exercise 7A.

Read each example and consider whether the sentences are well-structured (or not), and identify any ways in which the sentence structure could be improved.

**Sample 7.1** 4

In the present study, small RNA (sRNA) data from *Ascosphaera apis* were filtered from sRNA-seq datasets from the gut tissues of *A. apis*-infected *Apis mellifera ligustica* worker larvae, which were combined with the previously gained sRNA-seq data from *A. apis* spores to screen differentially expressed milRNAs (DEmilRNAs), followed by trend analysis and investigation of the DEmilRNAs in relation to significant trends. Additionally, the interactions between the DEmilRNAs and their target mRNAs were verified using a dual-luciferase reporter assay. In total, 974 *A. apis* milRNAs were identified.

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| Well-structured? | Ways to improve the sentence structure? |

**Sample 7.2.** 5

An endo-xylanase that is active at neutral pHs, and capable of highly specific hydrolysis of xylan with a high ratio of xylobiose in the product is desirable in the industrial scale production of XOSs. However, endo-xylanases with these characteristics are rare. [Carvalho et al. (2020)](https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2023.1292726/full) used xylanase from *Aspergillus fumigatus* M51 to hydrolyze bagasse, and reported the proportion of xylobiose in the hydrolysate was 66.42%. [Su et al. (2021)](https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2023.1292726/full) used a commercial xylanase from *Trichoderma reesei* to hydrolyze poplar wood and obtained 48.19% xylobiose. [Xian et al. (2019)](https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2023.1292726/full) reported an endo-xylanase from *Streptomyces ipomoeae* produced 80% xylobiose from four kinds of agricultural and forestry residual xylans, but the specific enzyme activity of the enzyme was only 197.75 ± 1.42 U/mg toward beechwood xylan. [Chi et al. (2013)](https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2023.1292726/full) reported an endo-xylanase from *Streptomyces thermocarboxydus* subspecies MW8 strain hydrolyzed birchwood xylan released mainly xylobiose, but the specific enzyme activity of the enzyme was only 83.94 U/mg toward birchwood xylan. [Qiu et al. (2017)](https://www.frontiersin.org/journals/microbiology/articles/10.3389/fmicb.2023.1292726/full) reported an endo-xylanase from frozen soil produced 90% xylobiose from beechwood xylan, but the specific enzyme activity of the enzyme was only 10.41 U/mg toward beechwood xylan.

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| Well-structured? | Ways to improve the sentence structure? |

**Sample 7.3.** 6

*Mycoplasma pneumoniae*is a prevalent cause of community-acquired pneumonia ([Hammerschlag, 2001](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full%22%20%5Cl%20%22B6); [Lee, 2008](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B10); [Kumar and Kumar, 2023](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B9)). This infectious agent can affect individuals of all ages but is most common among children and adolescents, with its incidence rising annually ([Chang et al., 2014](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B2); [Chen et al., 2024](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B4); [Liu et al., 2024](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B13)). Infections with *M. pneumoniae* typically manifest with respiratory symptoms but it can also lead to complications outside the respiratory system, such as cardiovascular and neurological complications ([Kumar and Kumar, 2023](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B9)). The clinical signs of *M. pneumoniae* infection are non-specific and coupled with diagnostic complexities, making early and rapid identification challenging ([Hammerschlag, 2001](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full%22%20%5Cl%20%22B6); [Kumar and Kumar, 2023](https://www.frontiersin.org/journals/cellular-and-infection-microbiology/articles/10.3389/fcimb.2024.1423155/full#B9)). Therefore, improving the accuracy of *M. pneumoniae* detection is particularly important for clinical diagnosis and management.

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| Well-structured? | Ways to improve the sentence structure? |

### Exercise 7B.

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Look at your introduction thus far (or any other piece of writing). Go through it, and examine your sentence structure. Consider how your writing can be improved and make the appropriate edits.

### References

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2. Johnstone MA and Self, WT. D-Proline Reductase Underlies Proline-Dependent Growth of *Clostridioides difficile*.. 2022;204(8):10.1128/jb.00229-22
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4. Transcriptional dynamics and regulatory function of milRNAs in *Ascosphaera apis* invading *Apis mellifera* larvae. Fan et al (2024) Front. Microbiol, <https://doi.org/10.3389/fmicb.2024.1355035>
5. Zhang J, Qin Y, Wang Q, et al. Gene cloning, expression, and characterization of two endo-xylanases from *Bacillus velezensis* and *Streptomyces rochei*, and their application in xylooligosaccharide production. *Front Microbiol*. 2023;14:1292726. Published 2023 Dec 19. doi:10.3389/fmicb.2023.1292726
6. Xiao, F., Zhang, Y., Xu, W., Fu, J., Huang, X., Jia, N., Sun, C., Xu, Z., Zheng, B., Zhou, J., Wang, Y., & Meng, L. (2024). Real-time fluorescent multiple cross displacement amplification for rapid and sensitive *Mycoplasma pneumoniae* detection. *Frontiers in Cellular and Infection Microbiology*, *14*. https://doi.org/10.3389/fcimb.2024.1423155