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**Modal Verbs in Academic Writing**

| Modal Identification Exercise |
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| Instructions |
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1. *Read each of the following sentences and identify the modal verb.*
2. *Explain why you think the writer chose this verb?*
3. *Then rewrite the sentence using a different modal verb*
4. Our nanocomposite valence bands **should** be similar to these semiconductors because the inorganic framework is formed from a mixture of transition metals, group IV elements, and chalcogenides. [[1]](https://paperpile.com/c/iMXqNB/sAbYi)

| Modal | Reason for use |
| --- | --- |
| should be similar | Author expects for their films to have similar features |
| Rewritten sentence: Our nanocomposite valence band ought to be similar to these semiconductors because the inorganic framework is formed from a mixture of transition metals, group IV elements, and chalcogenides. | |

1. These results suggest that p27’s association with the cdk2 complex **may** be enough to inhibit catalytic activity, irrespective of the state of p27 Y phosphorylation.[[2]](https://paperpile.com/c/iMXqNB/YNToU)

| Modal | Reason for use |
| --- | --- |
| may be enough | The authors' experiments showed that the combination of certain substances inhibits the catalytic activity regardless of the specific conditions. |
| Rewritten sentence: These results suggest that p27’s association with the cdk2 complex should be enough to inhibit catalytic activity, irrespective of the state of p27 Y phosphorylation.[2] | |

1. These results indicate that decisions must overlap in genetically silent regions between the tar and cheRgenes (Slocum, 1983)[[3]](https://paperpile.com/c/iMXqNB/deoS2)

| Modal | Reason for use |
| --- | --- |
| must | Because experiment proved it about decisions. So. researchers use the modal verb : “must”. |
| Rewritten sentence: These results indicate that decisions have to overlap in genetically silent regions between the tar and cheRgenes. | |

1. Results tend to get blurred in background regions, which might be explained by the limited resolution of the input images and imperfect ground truth in the far range.[[4]](https://paperpile.com/c/iMXqNB/ZNGJ)

| Modal | Reason for use |
| --- | --- |
| might | The author wants to explain the reason for the tendency, but it has just half the possibility. |
| Rewritten sentence: Results tend to get blurred in background regions, which may be explained by the limited resolution of the input images and imperfect ground truth in the far range. | |

| Modal Practice Exercise |
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| Instructions |
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*Rewrite the sentence using a different modal verb*

| may | might | could | should | must |
| --- | --- | --- | --- | --- |
| may have | might have | could have | should have | must have |
| may not have | might not have | could not have | should not have | must not have |
| need to | have to | can | ought to |  |



| Original | One possible explanation for this large shift is that the tin orbitals are spatially more diffuse than germanium. |
| --- | --- |
| With modal | This large shift **could be** explained by the fact that the tin orbitals are spatially more diffuse than germanium. |

| Original | It is unlikely that this scalability issue will be solved in the immediate future; but there is a need for novel methods to gradually conquer larger and larger networks. |
| --- | --- |
| With modal | This scalability issue **might not be** solved in the immediate future; but there is a need for novel methods to gradually conquer larger and larger networks. |

| Original | Studies based on metabolic labeling and two-dimensional gel electrophoresis have suggested that cdk4 T172 phosphorylation is lost in arrested cells |
| --- | --- |
| With modal | Studies based on metabolic labeling and two-dimensional gel electrophoresis have suggested that cdk4 T172 phosphorylation could be lost in arrested cells. |

| Original | In the example, the model fails to recover the ground plane, likely because the input image was rotated by 90 degrees. |
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| With modal | For example, an image can be rotated 90 degrees such that the model fails to recover the ground plane. |

References

[1] [S. D. Korlann, A. E. Riley, B. L. Kirsch, B. Simon Mun, and S. H. Tolbert, “Chemical Tuning of the Electronic Properties in a Periodic Surfactant-Templated Nanostructured Semiconductor,” *Journal of the American Chemical Society*, vol. 127, no. 36. pp. 12516–12527, 2005. doi:](http://paperpile.com/b/iMXqNB/sAbYi) [10.1021/ja045446k.](http://dx.doi.org/10.1021/ja045446k.)

[2] [A. Ray, M. K. James, S. Larochelle, R. P. Fisher, and S. W. Blain, “p27Kip1 inhibits cyclin D-cyclin-dependent kinase 4 by two independent modes,” *Mol. Cell. Biol.*, vol. 29, no. 4, pp. 986–999, Feb. 2009.](http://paperpile.com/b/iMXqNB/YNToU)

[3] [R. Poole, A. Gnann, and G. Hahn-Powell, “Epistemic stance and the construction of knowledge in science writing: A diachronic corpus study,” *Journal of English for Academic Purposes*, vol. 42. p. 100784, 2019. doi:](http://paperpile.com/b/iMXqNB/deoS2) [10.1016/j.jeap.2019.100784.](http://dx.doi.org/10.1016/j.jeap.2019.100784.)

[4] [R. Ranftl, K. Lasinger, D. Hafner, K. Schindler, and V. Koltun, “Towards Robust Monocular Depth Estimation: Mixing Datasets for Zero-shot Cross-dataset Transfer,” *IEEE Trans. Pattern Anal. Mach. Intell.*, vol. PP, Aug. 2020, doi:](http://paperpile.com/b/iMXqNB/ZNGJ) [10.1109/TPAMI.2020.3019967.](http://dx.doi.org/10.1109/TPAMI.2020.3019967.)

[5] Botoeva, Elena, et al. "Efficient verification of relu-based neural networks via dependency analysis." Proceedings of the AAAI Conference on Artificial Intelligence. Vol. 34. No. 04. 2020.