

Writing Workshop #12: Avoiding Ambiguity with Four-Letter Words

Some four-letter words, such as *with*, *need*, and *like*, can be ambiguous if used in the wrong context.

For example, these four-letter words are sometimes more appropriately replaced by others words:

“*with*” is sometimes more appropriately “*having*” or “*using*”

“*need*” is sometimes more appropriately “*must*”

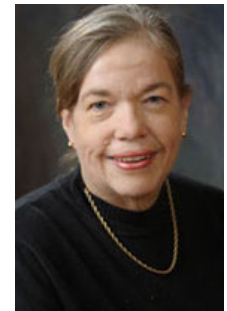
“*like*” is sometimes more appropriately “*such as*”

For more details, see Celia’s slides on the following 4-letter words:

With: <http://people.physics.illinois.edu/Celia/MsP/With.pdf>

Need: <http://people.physics.illinois.edu/Celia/MsP/Need.pdf>

Like: <http://people.physics.illinois.edu/Celia/MsP/Like.pdf>



– Celia Elliott

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Original: To study the spin coherence during optical excitation, we prepare a spin superposition state in the orbital GS with an electron spin resonance (ESR) pulse resonant with the GS spin transition.

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One Solution: To study the spin coherence during optical excitation, we prepare a spin superposition state in the orbital **ground state using** an electron spin resonance (ESR) pulse resonant with the **ground state** spin transition.

Comment: “*With*” can be confused with “*alongside*”, and replacing with “*using*” avoids this ambiguity.

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One Solution: Before a typical laser can shine, a minimum (threshold) amount of energy **must** be pumped into an optical amplifying medium. **This pumping process** creates a so-called population inversion of the light emitters.

Comment: “*Needs*” has the connotation of a core necessity and is generally associated with conscious entities that “want” things, e.g., “he needs water”.

“*Must*” has the connotation of an obligation or requirement that should be fulfilled, and so is more appropriate to describe tasks that should be fulfilled, e.g., “we must align the laser”.

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One Solution: Topological insulating materials can be useful in applications **such as** quantum computing, optical communications, and catalysis.

Comment: “*Like*” suggests a comparison and is the same as “similar to”. So, “*like*” should be used to compare things: e.g., “that calculation is like the one reported by Roberts *et al.* in 2018.”

“*Such as*” suggests inclusion and should be used when listing examples of something.