

Modeling and Simulation Body of Knowledge (MSBOK)

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Modeling and Simulation Terminology: Background

1 On Definitions:

- Two definitions of "**definition**" follow:
 - "A statement expressing the essential nature of something." ([Merriam-Webster Online](#))
 - "An exact statement or description of the nature, scope, or meaning of something." ([Compact Oxford English Dictionary](#))
- A definition needs to be *succinct* and *comprehensive*.
 - *Comprehensiveness* is needed to cover correctly and precisely the scope of applicability as well as the essential characteristics of the concept to be defined.
 - By using a comprehensive definition, one can have the possibility to have a top-down decomposition of the elements of the concept defined; and hence, a basis for a hierarchical elaboration of the related concepts (i.e., a *hypernym* is a word that is more generic than a given word while a *hyponym* is a word that is more specific than a given word.)
 - Relationships of the parts can be clarified by meronyms and holonyms: A *meronym* is a word that names a part of a larger whole and a *holonym* is a word that names the whole of which a given word is a part and
 - Furthermore, one can also specify definitions of other related terms by specifying additional constraints or additional characteristics.

2 A note for the ontology:

Please feel free to skip this part unless if you prefer additional in-depth information.

Clarification of the following terms may be useful in establishing the relationships of the concepts (terms), especially in developing an ontology: *synonym, antonym, antagonym, hypernym, hyponym, holonym, meronym, polysemy, homophone, homonym, homographs, and acronym.*

(Most of the following explanations and examples are from [UsingEnglish.com](#).)

Synonym: A *synonym* is a [word](#) that means the same as another word, or more or less the same. If a word is slightly different, it is a *near-synonym*. e.g.: 'Movie' is a synonym of 'film'. In this example the former is more common in American English and the latter in British English.

Antonym: An *antonym* is a word that means the opposite of another. e.g.: 'fat' is an antonym of 'thin'

Antagonym: A word that can mean the opposite of itself is an *antagonym*. e.g.: clip (attach to), clip (cut off from).

Hypernym: A *hypernym* is a word that is more generic than a given word.

Hyponym: A *hyponym* is a word that is more specific than a given word.

Holonym: A *holonym* is a word that names the whole of which a given word is a part.

Meronym: A *meronym* is a word that names a part of a larger whole.

Polsemy: *Polysemy* refers to a word that has two or more similar meanings.

e.g.: The house is at the *foot* of the mountains. One of his shoes felt too tight for his *foot*. 'Foot' here refers to the bottom part of the mountains in the first [sentence](#) and the bottom part of the leg in the second.

Synecdoche: A *Synecdoche* is a word that refers to a part of something to mean the whole. e.g.: 'All hands-on deck' is an example in which 'hands' is used to mean 'people'.

Homophones: *Homophones* are words that are spelled differently but sound the same. eg: 'Rain', 'rein' and 'reign'

Homonym: *Homonym* is a word that is written and pronounced the same way as another, but which has a different meaning. e.g. 'Lie' can be a verb meaning to tell something that is not true or to be in a horizontal position.

Homographs: *Homographs* are words that are written the same way but have different meanings and often different pronunciations. 'Wind' can mean the movement of air when talking about the weather. It can also mean to follow a course or way that is not straight; the road winds through the mountains. These are different words with different pronunciations although they are written the same way.

	words		
	spelled	pronounced	meanings are
Homophones	differently	the same way	different
Homonyms	the same way	the same way	different
Homographs	the same way	often differently	different

Acronym: An *acronym* is a kind of [abbreviation](#). It is a word formed by taking [letters](#) from a [phrase](#) that is too long to use comfortably. e.g.: Laser is an *acronym* of **L**ight **A**mplification by **S**timulated **E**mission of **R**adiation. If the letters do not make a word, but are pronounced individually, as in the CIA or the BBC, it can be called an *initialism*.