

UCCA Adverbial (D) Refinement Layer Label Guidelines

Here we provide a brief description of each of the Adverbial refinement labels, along with examples from the *Twenty Thousand League Under the Sea* (English) and from the WSJ corpus annotated with UCCA foundational layer categories. In each example sentence, the D-labeled unit is **bold-faced**, and the most relevant scene-evoking State/Process unit is also marked.

1. Aspectual

Aspectual D-instances are the words or phrases that relate an event to start-/endpoints, or whether it is a recurring, ongoing, or generic event. Most other temporal expressions should be T in the Foundational layer.

Examples.

- Captain Baker [**at first** D] [thought P] he was in the presence of an unknown reef.
- The hypothesis of an underwater Monitor was [**ultimately** D] [rejected P].
- ...nature [**still** D] [keeps P] ichthyological secrets from us.
- ...[**habitually** D] [hardworking P].
- You 'd [**just** D] been [yanked P] from between the plates of a hydraulic press.
- Two months have [**already** D] [gone P] by [**since then** D].
- they [were S] [**already** D] a line of bold fishermen [**back in the days when this town still belonged to France** D].
- The two quickly became friends; McCartney later admitted: "I [**tended** D] to [talk P] down to him, because he was a year younger."
- That [**never** D] [changes P]. → Negation + Aspectual

Verbs that indicate the start-/end-points (or lack thereof) of States are also treated as Aspectual.

- Information [**becomes** D] more [abundant S].
- The sea [**remained** D] [smooth and easily visible S] over a vast perimeter.

Other verbs that indicate an underlying temporal dimension of an event are also Aspectual.

- There his science [**came** D] [to a halt S].
- At 4:17 in the afternoon, ...[a collision P] [**occurred** D].

Secondary verbs that introduce or locate the main action along a temporal dimension are Aspectual.

- The day was [**beginning** D] to [break P].
- I [**finished** D] [writing P] the letter to him.
- He [**postponed** D] our [meeting P] until next Monday.
- They [**deferred** D] to enroll in college until next fall.
- Possible verbs
 - *begin, start, finish, complete, continue(with)...*

- *postpone, delay, defer...*

Descriptions of repetition, frequency, and/or duration of events are treated as Aspectual.

- The monster [surfaced P] [**again** D].
- ...in [arousing P] public passions [**all over** D] again.
- ...an urge or a whim if you prefer, can [bring P] to the upper level of the ocean [**for long intervals** D].
- [**One after another** D], reports [arrived P] that would profoundly affect public opinion.
- People were [**constantly** D] [babbling P] about the creature, even via the Atlantic Cable.
- ...[think P] it [**over** D].
- Preliminary tallies by the Trade and Industry Ministry [showed P] [**another** D] trade deficit in October, the fifth monthly setback this year, casting a cloud on South Korea's export-oriented economy.
- ...where thousands of spectators [acclaimed P] us [**one more time** D].
- ...[putting on P] steam and reversing engines [**in quick succession** D].

Event quantification is also treated as Aspectual, since explicit event quantification involves stating the times an event or action occurs in a temporal dimension. For example, when an Adverbial explicitly expresses numbers, it is considered Aspectual.

Examples.

- ...only [**two** D] possible [solutions P] to the question.
- Our helmsman would give [**three** D] [turns P] of the wheel.

Meanwhile, an explicit mention of X number of times, such as “two times,” “twice,” should be considered as Aspectual.

- [**A hundred times** D] I [chided P] him.
- [**How many times** D] I shared the [excitement P] of general staff and crew.

When describing an event, ordinal numbers are also considered Aspectual, as they indicate the number of times an event occurs.

- The new ad plan from Newsweek, a unit of the Washington Post Co., is the [**second** D] incentive plan the magazine has [offered P] advertisers in three years.
- “...Conseil! ” I [called P] [**a third time** D].

Any other mentions of number, often with units, should be considered as Degree, as one can ask the question of “how much did an action occur” for Degree. This includes “times” used to indicate multiplication rather than repetition:

- Alan Spoon, ... said Newsweek's ad rates would [increase P] [**5%** D] in January. → Degree
- ...this weapon to be [**ten times** D] [stronger S]. → Degree

2. Causal

Causal D-instances are words and phrases that add information about causation, enabling, preventing, reasoning, or conditions to parts of the sentences.

Examples.

- ...a mold that time has gradually [**made** D] [smaller S].
- I [**let** D] it [wag P].
- There was good [**reason** D] to [stop and think P], even for the world 's most emotionless man.
- [**Had it not been for** D] [the shouts of crewmen in the hold , who climbed on deck P]...
 - In this example "*had it not been for*" is both Causal and Negation.

All secondary verbs that relate with the concept of HELPING, or MAKING, are considered to be Causal Adverbials.

- Candy [**helped** D] her mother to [bake P] a cake.
- Those dogs are not [**allowed** D] to [enter P] the park.
- The material [**prevents** D] water from [leaking P] out of the bag.
- She always [**ensures** D] to [correct P] all of the spelling errors.
- Possible verbs
 - *make, force, cause, tempt; let, permit, allow, prevent, avoid, spare, ensure...*
 - *help, aid, assist...*

3. Comparison

Comparisons are D-instances that involve explicit comparative markers, introduction of standard(s) of comparison usually by means of transitive prepositional constructions, as well as superlatives.

Examples.

- Thanks to it, travel between the various continents had become [**more and more** D] [dangerous S].
- That a private individual had such a mechanism at his disposal was [**less than** D] [probable S].
- For the world 's [**most** D] [emotionless S] man...
- ...whose depths to this day are [**beyond** D] [the reach of human eyes P].
- ...[**as** D] [comfortable S] [**as** D] a hermit crab inside the shell of a whelk.

The label Comparative frequently co-occurs with other labels of modification, when elements other than comparative marker are included in the Adverbial element.

Examples.

- The frigate took [a P...] [**more decisive** D] westward [heading ...P]. → Comparison + Description
- No whaling vessel could have been [**better** D] [armed S]. → Comparison + Description
- I can [do P] [**no better** D] than to compare him with a powerful telescope that could double as a cannon always ready to fire. → Comparison + Description + Negation
- A hole 's existence can be [**more emphatically** D] [proven P]. → Comparison + Degree
 - *Note that under certain circumstances Comparison and Degree may co-occur, if both are explicitly mentioned in the sentence.*

4. Degree

The label Degree applies to the D-instances that are degree modifiers to the scene-evoking unit, usually describing the extent of an activity or state. The words 'very', 'only,' 'quite,' are often candidates of the Degree label. Besides, a number of adverbs are used to indicate degree modification. To be treated as Degree, such adverbs must not otherwise introduce new properties to the event or action that evokes a scene, rather it should only intensify or diminish the said property.

Examples.

- ...[**infinitely** D] [bigger and faster S] than any whale.
- That would [**profoundly** D] [affect P] public opinion.
- You [get P] [**just** D] the collision we need to cause the specified catastrophe.
- The sea [is S] [**precisely** D] their best medium.
- Some [saw P] it [**purely** D] as a scientific problem to be solved.
- Areas of the factory were [**particularly** D] [dusty S] where the crocidolite was used.
- The asbestos fiber, crocidolite, is [**unusually** D] [resilient S] once it enters the lungs....

The question word 'how,' when used before a scene-evoking adjective or adverb, is treated as degree modification.

- No matter [**how** D] [far off S] it was...

Adjectives may also be Degree, when they indicate not the property itself, but the extent to which a property is mentioned in the context.

- [a P...] [**born** D] [stoic ...P]
 - The word *born* is used as an adjective here, and it can be paraphrased as 'extreme' or 'natural.' For this reason, semantically it is closer to expressing a Degree.

Similarly, some prepositional phrases expressing the extent of an action can also be labeled Degree.

- It [exceeded P] [**in bulk** D] any whale previously classified by science.

Also, we count Negative polarity items such as *any*, *anyone*, *anywhere*, etc. as Degree labels when they occur as Adverbial instances. We treat such items as indicating the degree of negation.

- Until Congress acts, the government [has S...] n't [**any** D] [authority ...S] to issue new debt obligations of any kind, the Treasury said.
- I have n't [**the foggiest** D] [notion P], Professor Aronnax.

Lastly, words describing the extent of change fall under the Degree category. As with all other Degree instances, they do not introduce new properties or descriptive content, but only indicate the extent of an action or state.

- ...whose ability to see in the dark [increased P] their chances [**by fifty percent** D].
- Average maturity of the funds' investments [lengthened P] [**by a day** D] to 41 days...

5. Description

Unlike Degree, the Description category covers a wide range of manner-related and otherwise contentful modifications to the scene-evoking State or Process. Many adjectives and prepositional phrases can be

labeled as Description as they add extra properties that describe and enrich the rest of the sentence's meaning. In order to be considered Description as opposed to Degree, the Adverbial element must denote additional information other than the scene-evoker itself, *not* how much or to what extent the scene-evoker is. In other words, if one can ask the question of "how..." or "What kind of ..." with respect to the Adverbial or scene modifier for the sentence, then the instance is likely a Description case.

Because this category covers many types of words and phrases, we do not further categorize the kind of modifier function each instance serves, such as what are commonly known as Manner or Kind, or Direction.

Examples.

- The government of the Union will be [**pleased** D] to [regard P] you as France 's representative in this undertaking.
- [**Well** D] [versed P] in the theory of classification.
- As master wishes, Conseil [replied P] [**serenely** D].
- this extraordinary cetacean could [transfer P] itself from one locality to another [**with startling swiftness** D].

Secondary predication verbs that precede a State or Process, should be considered Description if they have substantial semantic content other than those of Aspectual or Possibility, such as *begin* or *think*, respectively. Arguably, such verbs constitute a subevent, or the event that precedes or introduces the main State or Process. If this verb does not have enough semantic content, such as "take" in "take a shower," then this verb should be Support instead of Description (see below).

- What about master's collections ? " Conseil [**ventured** D] to [observe P].
- Captain Anderson [**hastened** D] to [reassure P] them.
- how many times I [**shared** D] the [excitement P] of general staff and crew.

Ditransitive verbs, or verbs that indicate direction or transfer of objects/concepts, should be Description.

- He [**received** D] a [call P].

The question word 'how,' when used to question the way in which an event comes about, is supposedly questioning the manner of an action, therefore in those cases *how* should be annotated with Description. Annotators should heed this difference between 'how' as Degree and 'how' as Description.

- [**How** D] could it [move about P] with such prodigious speed?

While in English many adverbs denote manner descriptions, not all adverbs should be considered Description, especially when the adverbs serve as degree or aspectual modifiers.

- Areas of the factory were [**particularly** D] [dusty S] where the crocidolite was used. → Degree
- The asbestos fiber, crocidolite, is [**unusually** D] [resilient S] once it enters the lungs.... → Degree
- The hypothesis of an underwater Monitor was [**ultimately** D] [rejected P]. → Aspectual

6. Negation

The label Negation can be applied to Adverbial instances where a singleton negative marker appears, such as *no*, *not*, etc., or it can be jointly applied to words or phrases that contain explicit negative markers, such as *nothing*, *no more*, etc.

Examples.

- [No D] business dealings have been [crowned P] with greater success.
- It did [n't D] seem due for [resurrection P].
- [Not once D] did he [comment P] on the length or the hardships of a journey.
- This reply [proved P] [nothing D], other than how bullheaded the harpooner could be.
- Now it was [no longer D] [an issue of a scientific problem S] to be solved. → Negation + Aspectual
- ...[nothing more than D] to [go forth P]. → Negation + Comparative
- ...[not quite D] [in their right minds S].
- The frigate would have [gone P] [without D] me.

7. Possibility

The category of Possibility is applied to D-instances that convey modal expressions, possible claims, or include apparent speaker beliefs.

For example, English modal auxiliaries are considered Possibility.

Examples.

- ...how [bullheaded S] the harpooner [could D] be.
- ...it [had to D] be [plugged up P].
- Assuredly I [would D] n't [bet P] on the monster.

Words that convey apparent possibilities or speaker beliefs are counted as Possibility.

- [Come rain or come shine D], I no longer [left P] the ship 's deck.
- [Perhaps D] his nerves were [twitching P] for the first time in history.
- It turned out to be a foolish [business P] [after all D].
- [Whether or not D] it [suited P] him to go with me on my journeys
- The percentage ... [appears D] to be the [highest S] for any asbestos workers studied in Western industrialized countries, he said.
- We 're [going P] [just the same D].

Secondary verbs can also be Possibility, if they relate to the concepts of WANTING, NEEDING, or TRYING.

- They 'd [need D] to be [manufactured P] from sheet - iron plates eight inches thick , like ironclad frigates
- The following year he starred as a vampire researcher [trying D] to [save P] humanity from extinction in the horror-thriller Daybreakers (2010).
- I never [expected D] to [win P] that prize.
- She [pretended D] to be [looking P] away from the disaster.
- Possible verbs:
 - *want, wish(for); hope(for); need, require; expect; intend; pretend...*
 - *try, attempt, succeed, fail, practice...*