# Regular Lecture 4
# Words and Phrases

Prof. Dr. Jasmin Blanchette

Chair of Theoretical Computer Science and Theorem Proving

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# Words

# The Traditional Parts of Speech

Parts of speech are the **word types**.

Traditionally, English grammars distinguish between eight parts of speech:

- **nouns** (e.g., *computer*);
- **pronouns** (e.g., *you*);
- **verbs** (e.g., *eat*);
- **adjectives** (e.g., *appropriate*);
- **adverbs** (e.g., *however*);
- **prepositions** (e.g., *in*);
- **conjunctions** (e.g., *but*);
- **interjections** (e.g., *alas*).

What matters is how words behave in a sentence:
*But* and *however* have roughly the same meaning but are categorized differently.

Understanding the parts of speech is necessary to understand English grammar, which in turn will help you **write better**.

# Nouns

A noun names a **thing** or a **concept**.
It can be a common noun (lowercased) or a proper noun (usually uppercased).

Examples of common nouns: *coffee*, *snake*, *summer*.
Examples of proper nouns: *iPhone*, *Python*, *Switzerland*, The Da Vinci Code.

Many nouns have both a **singular** and a **plural** form—e.g., *cat* vs. *cats*.

# Pronouns

A pronoun **stands for** a noun or another pronoun, called the **antecedent**.
You should ensure the antecedent is **clear** from the context.

Examples of pronouns: *you*, *she*, *his*, *itself*, *they*, *whom*.

In the following example, *who* is a pronoun that stands for the antecedent *Jessica*:

> *It was Jessica who opened the windows.*

# Verbs

A verb describes an **action** or a **state of being**.

Examples of verbs: *be*, *has*, *fly*, *displayed*, *transforms*.

A verb is called **transitive** if it takes a "direct object."
Otherwise, it is called **intransitive**.
Many verbs can be used both transitively and intransitively.

Example of a transitive verb: *She ate lunch*.
Example of an intransitive verb: *She ate*.

# Adjectives

An adjective **modifies a noun**.

Examples of adjectives: *pink*, *wonderful*, *Austrian*, *many*, *this*, *such*, *five*, *my*, *which*, *each*, *some*, *the*, *a*.

Example of an adjective as an "attributive" before a noun: *They bought a beige sofa.*
Example of an adjective as the complement of a "copula verb": *The sofa is beige.*

# Adverbs

An adverb **modifies a verb, an adjective, another adverb, or an entire sentence**.

Examples of adverbs: *very*, *quickly*, *extremely*, *however*, *now*, *here*, *too*.

Example of an adverb modifying a verb: *She ran quickly.*
Example of an adverb modifying an adjective: *This color is very dark.*
Example of an adverb modifying an adverb: *It all went really fast.*
Example of a sentence adverb: *Unfortunately, there is no solution.*

# Prepositions

A preposition **links a phrase** with another part of the sentence, indicating the relationship between them.

Examples of prepositions: *in*, *as*, *for*, *on*, *about*, *below*, *between*, *throughout*.

Triple example of prepositions: *Dongchen moved from Chongqing to Munich in June.*

# Conjunctions

A conjunction **connects sentences, clauses, or words**.

Examples: *and*, *or*, *but*, *because*, *if*, *both–and*, *either–or*, *therefore*.

Two important types:

- **Coordinating conjunctions** join grammatical expressions of "equal rank."
- **Subordinating conjunctions** join grammatical expressions of "unequal rank."

Example of a coordinating conjunction: *I know, and you know.*
Example of a subordinating conjunction: *Raise your hand if you know the answer.*

In the second example, *if you know the answer* is a subordinate clause.

# Interjection

An interjection (or "exclamation") denotes an **abrupt, brief remark**.

Examples: *alas*, *ah*, *well*, *ouch*.

There is virtually no place for interjections in formal writing.

# Etymology

A word's etymology refers to its **origin**.

Etymology can be fascinating, but it does not give a word's true meaning.
For example:

- *thesaurus* is derived from the Greek word *θησαυρός*, meaning "storehouse, treasure," but in English it refers to a book of synonyms.
- *muscle* is derived from the Latin word *musculus*, meaning "little mouse."

A word's **true meaning** can be found in a dictionary.

# Spelling

Even if spelling is your forte, you might miss a **subtle misspelling** such as *arithemtic*, *occurence*, and *accomodate*. Any spellchecker will flag these. But it might not catch *lead* in *He lead a life devoid of blame*. (Change to *led*.)

Some words have **multiple spellings**—e.g., *judgment* vs. *judgement*. Often, one will mainly be American and the other, British, so you can simply choose the appropriate variant. In cases such as *formulas* vs. *formulae*, you can follow your preference or Google Books Ngram Viewer.

# Abbreviations

An abbreviation is a **shortened form** of a word or phrase.
Some abbreviations belong to the written language (e.g., *Dr.* or *Dr*).
Others exist also in speech (e.g., *exam* for *examination*).

Written-only abbreviations usually end with a period (.).
Exceptionally, in British English, the period is omitted if the abbreviation ends with the original word's last letter (e.g., *Dr*, *Mr*, *vs*).

# Abbreviations

Two special types of abbreviations:

- An **acronym** is an abbreviation consisting of the initial letters of other words and pronounced as a word (e.g., *ASCII*).
- An **initialism** is an abbreviation consisting of the initial letters of other words pronounced separately (e.g., *CPU*).

In American English, some two-letter initialisms are spelled with periods (e.g., *U.S.*).

# Abbreviations

Use abbreviations **sparingly**. They can be cryptic and off-putting, and are hard to find using a search engine. Does *AR* stand for *augmented reality* or *automated reasoning*? For such short phrases, do you really need an abbreviation?

The Latin abbreviations *e.g.*, *i.e.*, and *etc.* are well established and encouraged. Beyond this, *iff* (for *if and only if*) and *w.r.t.* (for *with respect to*) are acceptable in mathematical texts.

Lengthy phrases such as *nondeterministic finite automaton* might conveniently be shortened to *NFA*. But often it suffices to write *automaton*. If you choose to write *NFA*, introduce it in parentheses at the first occurrence—i.e., *nondeterministic finite automaton (NFA)*—and use *NFA* from then on. It is good style to **define** virtually all abbreviations on first use and to avoid them in titles.

If you use a lengthy phrase only **once**, do not introduce an abbreviation, unless the abbreviation is better known than the phrase.

# Plurals

Regular plural formation adds the suffix *-s* or *-es*.
But there are many **exceptions**, including the following:

| **Singular** | **Plural** |
|---|---|
| *appendix* | *appendices* (or *appendixes*) |
| *automaton* | *automata* |
| *basis* | *bases* |
| *corpus* | *corpora* |
| *criterion* | *criteria* |
| *datum* | *data* |
| *erratum* | *errata* |
| *formula* | *formulae* (or *formulas*) |
| *index* | *indices* (or *indexes*) |
| *matrix* | *matrices* (or *matrixes*) |
| *parenthesis* | *parentheses* |
| *thesis* | *theses* |

# Tenses

English distinguishes between three main verb tenses:

- **present** (e.g., *walk*);
- **past** (e.g., *walked*);
- **future** (e.g., *will walk*).

Both the past and the present tense are common in academic writing:

> *David A. Huffman invented the algorithm around 1950.*
> *Our study confirms that system programmers prefer Rust to C.*

When quoting Shafi Goldwasser, both *Goldwasser writes* and *Goldwasser wrote* work, but try to be locally consistent.

# Tenses

The future tense competes with the present tense. Compare:

> *In Section 8, we will describe our experiments.*
> *In Section 8, we describe our experiments.*

Knuth et al. recommend either of **two approaches** concerning tenses of verbs:

> Either use present tense throughout the entire paper, or write sequentially. Sequential writing means that you say things like, "We saw this before. We will see this later." The sequential approach is more appropriate for lengthy papers.

# Moods

English distinguishes between five verb moods:

- **indicative** (for facts);
- **imperative** (for commands);
- **interrogative** (for questions);
- **optative** (for wishes);
- **subjunctive** (for conditions).

In modern English, the optative and the subjunctive moods are often replaced by the indicative mood. Compare:

*I wish I were going.*
*I wish I was going.*

*They require that the resources be released at the end.*
*They require that the resources are released at the end.*

# *Shall* vs. *Will*

Should you write *we shall see* or *we will see*?

The **traditional approach**:

| **“must”** | **“going to”** | **“want”** |
|---|---|---|
| – | *I shall* | *I will* |
| *you shall* | *you will* | – |
| *she/he/it shall* | *she/he/it will* | – |
| – | *we shall* | *we will* |
| *you shall* | *you will* | – |
| *they shall* | *they will* | – |

Traditionally, you would write *we shall see* rather than *we will see*.
Notice how the *I* and *we* rows are shifted to the right.

# *Shall* vs. *Will*

Compare:

> *I shall drown; no one will save me!*
> *I will drown; no one shall save me!*

According to the traditional approach:

- The first speaker is expecting to drown.
- The second speaker is expressing suicidal intent.

# *Shall* vs. *Will*

The **modern approach**:

| **“must”** | **“going to”** |
|---|---|
| – | *I will* |
| *you shall* | *you will* |
| *she/he/it shall* | *she/he/it will* |
| – | *we will* |
| *you shall* | *you will* |
| *they shall* | *they will* |

Using the modern approach, you would write *we will see* rather than *we shall see*.

# *Shall* vs. *Will*

You can choose either approach, but **do not mix and match**.
The modern approach is slightly less formal. It is also easier to use.

Regardless of which approach you choose, beware of using *shall* instead of *will* with the second or third person. Examples of sentences on a course's web site:

> *The course shall cover the textbook's first four chapters.*
> *The course will cover the textbook's first four chapters.*

# Past vs. Present Perfect

Should you write *we developed* (past) or *we have developed* (present perfect)?

Generally:

- Use the past tense for an action that took place in the past and is **not continuing now**.
- Use the present perfect tense when the action started in the past and is **continuing now**.

A gray area is the conclusion of a thesis or paper. Both forms are widely used:

> *We presented a technique to reconstruct a network from the observations of the nodes' phase dynamics.*
>
> *We have presented a technique to reconstruct a network from the observations of the nodes' phase dynamics.*

# *Above* and *Below*

Phrases such as *the diagram above*, *the above code*, or *the table below* (but not *the below formula*) refer to material presented **before** or **after** the current sentence.

Despite the words' literal meanings, the material above does not need to occur above on the same page (it could be on an earlier page), and similarly for below.

# Phrases

# Personal Names

Suppose you want to refer to Emmy Noether.
Should you write *Emmy Noether*, *E. Noether*, or *Noether*?

Here is a **reasonable strategy**:

- If the name is followed by a citation to a paper by the same person, *Noether* suffices. After all, interested readers can follow the citation.
- If no citation is present, write *Emmy Noether* the first time for clarity, then continue with *Noether*. Apply this rule regardless of how famous they are.
- In the bibliography, write *Emmy Noether*, *E. Noether*, *Noether, Emmy*, or *Noether, E.*, but be consistent.

What about Frau Professorin? In most scientific writing, personal titles are omitted.

# Personal Names

Names with **particles**, such as Nicolaas Govert de Bruijn and John von Neumann, pose special challenges.

- When the family name starts a sentence, capitalize the particle.
- In the middle of a sentence, if the first names are omitted, write *De Bruijn* (following a Dutch convention) but *von Neumann*.

Personal names from China, Japan, and some other **Asian countries** put the family name before the first name. However, such names are often reversed to comply with Western conventions. For Yang Chen, is Yang the given or the family name?
You can often find out by inspecting the self-citations in Yang Chen's papers.

A separate challenge is to determine Yang Chen's **pronouns**.
If you fail to obtain this piece of information, use singular *they*,
or reword to avoid the issue.

# Possessives

The possessive of singular nouns is generally indicated with **'s**.
The possessive of singular nouns is generally indicated with an **apostrophe** (').
Examples: *Monica's novel*, *Charles's* (or *Charles'*) *thriller*, *the Müllers' textbook*.

There is a subtle distinction between the following:

- *Tremblay and Wilson's books* (their shared books);
- *Tremblay's and Wilson's books* (their respective books).

The possessive of pronouns is written without an apostrophe—e.g., *its name*, not *it's name*.

# Restrictive vs. Nonrestrictive Relative Clauses

A restrictive relative clause **narrows the range** of the concept it modifies (i.e., the set of things the clause refers to)—e.g.:

*The books that I bought yesterday were boring.*

Not all books are boring—only the ones that I bought yesterday.

A nonrestrictive relative clause **adds information** about the elements of the set but does not make it smaller—e.g.:

*The books, which I bought yesterday, were boring.*

The books we are talking about are boring. Incidentally, I bought them yesterday.

# Restrictive vs. Nonrestrictive Relative Clauses

The pronoun *that* is restrictive, whereas *which* is usually nonrestrictive.

*The books that I bought yesterday were boring* (restrictive) is right.
*The books, which I bought yesterday, were boring* (nonrestrictive) is right.

*The books which I bought yesterday were boring* (restrictive) is controversial.
*The books, that I bought yesterday, were boring* (nonrestrictive) is wrong.

Searching for controversial (or "wicked") *which*'s is called "**'which' hunting**."

# Pitfalls

# Pitfalls

**Adjectives as adverbs**

A common mistake, especially by German speakers, is to use adjectives in place of adverbs—e.g., *the program runs automatic* instead of *the program runs automatically*. The situation is complicated: Due to a phenomenon called "flat adverbs," using an adjective as an adverb can be legitimate—e.g., *drive slow*.

**Archaisms**

Avoid old-fashioned words such as *albeit*, *behoof*, and *betwixt*.

**Foreign words**

Foreign words that are well integrated into the language need no accents or italics—e.g., *role* (not *rôle*), *naive* (not *naïve*). The French phrase *à la* ("in the style of") is widely understood but informal. Rare foreign words are best avoided unless you explain them.

# Pitfalls

## Malapropisms

A malapropism is the mistake of using a word in place of a similar-sounding one, sometimes with comical outcomes. A few problematic pairs follow:

| | |
|---|---|
| *affect* | *effect* |
| *compose* | *comprise* |
| *delegate* | *relegate* |
| *discreet* | *discrete* |
| *ensure* | *insure* |
| *parable* | *parabola* |
| *principal* | *principle* |
| *proposal* | *proposition* |
| *sensible* | *sensitive* |

# Pitfalls

**Near-synonyms**

Beware of words, such as *simple* and *simplistic*, that have almost the same meaning but not exactly.

**Noun trains**

Avoid noun phrases such as *network packet traffic analysis tool*.
Use prepositions—e.g., *traffic analysis tool for network packets*.

**Sticky words**

These are words that stick in the reader's mind, so they should be used sparingly. For example, *also*, *but*, and *now* should not be used more than once within a paragraph.

# Problem Words and Phrases

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**&**

Spell out as *and*, except in the names of firms and such.

**all vs. all of**

Both have the same meaning. Trust your ear.

**alternative**

An alternative is *another* possibility. The word is not a synonym for *option*.
The statement *We have two alternatives* does not mean the same as *We have two options.*

**as well as**

This is not a perfect synonym for *and*.
Use it only if you can replace it with *in addition to*.

# Problem Words and Phrases

**assist, assistance**

These can usually be replaced by the less pretentious *help*.

**associate with vs. associate to**

*Associate to* is ungrammatical.

**bound vs. bounded**

A *bound variable* is attached to a binder.

A *bounded variable* ranges over a domain that is limited by a bound.

**can vs. may**

Prefer *may* for expressing permission, and use *can* otherwise—e.g., *The user can scroll up and down using the scroll bar*.

**cannot**

The negation of *can* is normally spelled as one word.

# Problem Words and Phrases

**cf.**

This Latin abbreviation means "compare with," not "see."

**compare with vs. compare to**

*With* is the correct preposition when emphasizing the differences—e.g., *She compared C# with Java*.

*To* is correct if we want emphasize the similarities—e.g., *He compared Napoleon to Charlemagne*.

**consider vs. consider as**

*Consider as* is old-fashioned. Thus, write *The fact is considered relevant*, not *The fact is considered as relevant*.

**e.g. vs. i.e.**

Do not confuse these. They mean "for example" and "that is," respectively. In American English, but not in British English, they are followed by a comma.

# Problem Words and Phrases

**et al.**

Be careful with the punctuation. The spelling is not *et al* nor *et. al* nor *et. al.*

**the fact that**

Avoid this verbose phrase.

**fewer vs. less**

Prefer *fewer* to *less* with countable nouns—e.g., *fewer lines of code*.

**the former, the latter**

These are often clumsier, and more puzzling, than the words they replace.
Use only if $n = 2$.

**good, bad**

Instead of telling the reader that something is good or bad,
tell them *why* it is good or bad.

# Problem Words and Phrases

**in-, un-, non-, a-**

All these prefixes denote negation. Check a dictionary to choose the right prefix in a given situation. Be aware of subtle distinctions between pairs of adjectives such as *noncongruent* and *incongruent*.

**in general**

Often the phrase means "almost always," but sometimes it means "always." Be careful in mathematical contexts that require precision.

**interesting**

Avoid this vague word. Tell the reader why something is interesting instead.

**-like vs. -style**

Compare *Ada is a Pascal-like language* and *Ada has a Pascal-style syntax*.

# Problem Words and Phrases

**like vs. such as**

Prefer *such as* as the more formal option when both work.

**little, big**

As a rule, prefer *small* and *large* to *little* and *big*.

**note that**

Use this phrase sparingly. Often it can be omitted altogether.

**on vs. upon**

*Upon* is old-fashioned but still preferable in expressions such as *frowned upon*.

**oriented vs. orientated**

Prefer *oriented*.

**prior to**

This is a needless, pompous variant of *before*.

# Problem Words and Phrases

**really, very**

Use these adverbs with moderation. Often they can simply be omitted or replaced with a near-synonym such as *substantially*.

**this/these vs. that/those**

In informal speech, people tend to say *that*/*those* where formal English would use *this*/*these*—e.g.: *. . . the principle of mutual exclusion. That principle . . .*

**thusly**

Prefer *thus*.

**trivial**

Do not use it as a synonym for *easy*. Similarly, avoid euphemisms such as *highly nontrivial* (for *difficult*).

# Problem Words and Phrases

**unique**

Use only when $n = 1$. In particular, never write *fairly unique*.

**utilize, utilization**

Both are needless, pompous variants of *use*.

**whom vs. who**

Prefer *whom* to *who* for the object case—e.g., *for whom the user's manual is designed*.