Part 01 follow-up

Other tenses that are not mentioned in the recapitulative table of English tenses

8. Be going to future

We use “be going to” to talk about future plans and intentions. Usually the decision about the future plans has already been made:

-*I’m going to look for a new place to live next month* (A decision before the moment of speaking).

- *Oh! There's no milk. I'll go and get some*. (A decision at the moment of speaking).

We can also use “be going to” A prediction based on something we can see (or hear) now:

-*The Conservatives are going to win the election. Look at the statistics! They already have most of the votes.* (A prediction based on something we can see or hear now)
-*I think the Conservatives will win the next election.*(A prediction based on opinion)
- *Look out! He’s going to break that glass.*

9. Future continuous (future progressive)

The future continuous tense is used to talk about something that will be happening, going on, at some point in the future.

Form

This tense is formed with: will + be + present participle

I will be working

Examples

- *Tomorrow morning, we will be walking in the rain forest.*

- *Don't phone me between 7 and 8. We'll be having dinner then.*

- *At 10 o'clock tomorrow; she will be in her office. She will be working.*

10. Future perfect

The future perfect tense describes an action that will have been completed at a definit point in the future.

Form

This tense is formed with: will + have + past participle

I will have worked

Exemples

- *I will have finished this work by the end of this week.*

- *I will have spent all my money by this time next year.*

11. Conditional Sentences

Conditional sentence type	**Usage**	**If clause verb tense**	**Main clause verb tense**
Zero	**General truths**	**Simple present** ***If you heat ice***	**Simple present** ***it melts.***
Type 1	**A possible condition and its probable result**	**Simple present** ***If he studies hard,***	**Simple future** **He will pass the exams.**
Type 2	**A hypothetical condition and its probable result**	**Simple past** ***If I won a million dollars,***	**Present conditional or Present continuous conditional** ***I would start a business of my own.***
Type 3	**An unreal past condition and its probable result in the past**	***Past perfect*** ***If I had won a million***	***Perfect conditional*** ***, I would have started a business of my own.***
Mixed type	**An unreal past condition and its probable result in the present**	**Past perfect** ***If I had worked harder at school,***	**Present contditional** ***I would have a better job now.***

The Passive voice

In cases where the agent is not known or the action is more important then the agent, the passive voice is more convenient. It also typical of an impersonal and formal style, that is why it is often found in scientific articles, public notices, announcements, or instructions.

Form

The passive voice form depends on the tens, but it is basically formed with the verb to be and the past participle

Present simple The car is repaired.
Present continuous The car is being repaired.
Past simple The car was repaired.
Past continuous The car was being repaired.
Present perfect The car has just been repaired.
Past perfect The car had been repaired.
Future simple The car will be repaired.
Future continuous The car will be being repaired.

Examples
- *He was offered a job.* (someone offered him the job)
- *They are supposed to be good students.* (some teachers suppose that)
- *A new house is built in our street.* (The house is finished.)
- *A new house is being built in our street.* (They are building it these days, it is not finished.)
- *I was being introduced to Mrs. Jones when you arrived.* (you arrived in the middle of the introduction.)
- *When you arrived I was introduced to Mrs. Jones.* (you arrived first and then iI was introduced.

Imperative sentences

We can express instructions or commands in English by the imperative. It is formed with the infinitive without to.

- *Be careful.*
- *Open your books.*
- *Come here.*

For the negative commands we put do not or don't before the imperative.

- *Don't be late.*
- *Do not sit down.*
- *Don't have so many bags.*

We can mention the person in the command, usually at the end of the sentence.

- *Have something to eat, Greg.*

Exercises 1 (give back the answers by e-mail if available for you. You can also ask Questions by e-mail: hicham.mezit@yahoo.com)

Put the verb into the right tenses:

simple present + :	We talk to our parents.
simple present - (negative):	.....
simple present **?** (question):	….....
present perfect + :	….....
present perfect - (negative):	….....
present perfect **?** (question):	….....
simple past + :	….....
simple past - (negative) :	….....
simple past **?** (question):	….....
will future + :	….....
will future - (negative) :	….....
will future **?** (question) :	….....
going to future + :	….....
going to future **?** (question):	….....
present progressive + :	….....
present progressive - (negative):	….....
present progressive ? (question):	….....
past progressive + :	….....
past progressive - (negative):	….....
past progressive **?** (question):	….....

Exercise 2 (give back the answers by e-mail if available for you. You can also ask Questions by e-mail: hicham.mezit@yahoo.com)

Put the verbs between brackets into there correct form

1. My father _____ the family car. It still looks dirty. (not/to clean)
2. The sun _____ at 6:38 yesterday morning (rise)
3. The sun _____ when the climber reached Mount Everest. (shine)
4. I promise that I _____ this secret to anyone (not tell)
5. My friend _____ me for many years when I _____ him last week (not see, meet)
6. _____ the contents of the contract tomorrow(read).
7. Where _____ your last holidays? (you spend)
8. He _____ a glass on the floor (just throw)
9. I was tired yesterday because I _____ well the night before (not sleep)
10. Sh! Someone _____ to our conversation (listen)!
11. The plane _____ off in a few minutes. (take)
12. Everyone _____ when the earthquake hit the small town. (sleep)
13. I was angry that I _____ such a stupid mistake (make)
14. They _____ about me when I interrupted their conversation. (talk)
15. If I _____ (find) a good job, I'll move to Madrid.
16. He met his wife when he _____ (work) in Brussels.
17. You can turn off the radio. I _____ (not listen) to it.
18. Where _____ (you / have) dinner yesterday?
19. This exercise is difficult. I _____ (help) you to do it.
20. What _____ (you / cook) tonight?
21. _____ (you / finish) your homework yet?
22. My father _____ (go) to the bank. He'll be back soon.
23. What _____ (they / do) at 9.00 last night?
24. It _____ (snow) when we _____ (leave) the library.
25. I usually _____ (listen) to the news in the car.
26. My cousin is a writer. He _____ (write) three novels.
27. When _____ (Barack Obama / become) president of the USA?
28. My students _____ (not listen) when I gave the instructions.
29. Marc is thirsty! I _____ (get) him a glass of water!
30. If it _____ (not rain) we would lie on the beach.
31. If you ask him nicely, he _____ (help) you.
32. Would you like a coffee? No, thanks. I _____ (already / have) four cups today.
33. _____ (you /ever / have) an argument with your parents about clothes.
34. I'm sure they _____ (lose) the match.
35. My neighbour has broken his leg. He _____ (not play) tennis next weekend.
36. If I had the receipt, I _____ (return) these jeans.
37. What would you like? I _____ (have) some orange juice.
38. If my brother _____ (not arrive) soon, I'll send him a text message.
39. I _____ (not see) my grandparents since last summer.
40. If you found a purse, _____ (you / give) it to the teacher?

Part 2. Scientific texts understanding and activities

1) Read the Attached scientific paper. Use dictionary to explain difficult words, and answer the following questions **(give back the answers by e-mail if available for you. You can also ask any Question by e- mail: hicham.mezit@yahoo.com)**

2) What is the theory of spontaneous generation**?**

……

……

……

3) What did Pasteur do with this theory and how?

……

……

……

……

4) What allowed Robert Koch to succeed in what Pasteur did not ?

……

……..……

……

……

……

II) Give the meaning of the underlined parts in the following sections from the text (in English**)**

a) Beneficial and **detrimental** effects of microbes began to **unfold.**

……
…….

b) These microscops were **crude by today's standards**.

……

c) one of the most **prestigious** scientific journals of the **era**.

……

d) Van Leeuwenhoek's discoveries also **boosted the long held belief** that invisible agents of some sort were the cause of infectious diseases
……..

e) Pasteur then used these **insights** to design a series of classic experiments

……

f) many of which have remained **mainstays** in microbiology and clinical medicine to this day:
……

g) Pasteur went on from his **seminal** work on spontaneous generation to a series of **triumphs** in medical microbiology:
……
……

h) These included the development of a vaccine against the **otherwise** fatal disease rabies:
……

i) Koch and his associates **devised** methods to isolate suspected pathogens
……

j) definitive proof of cause and effect with any infectious disease remained **elusive** until the work of Robert Koch.

……

III) In the following section, underline the verbs and give below their tenses.

Following early microscopic discoveries, methods for the culture and identification of microorganisms were developed, and from these, our understanding of the enormous beneficial and detrimental effects of microbes began to unfold. We review some historical highlights in microbiology now.

IV) Transform the active voice in the following sentences to the passive voice.

He initiated studies on the mechanism of the alcoholic fermentation, which in the mid-nineteenth century was assumed to be a strictly chemical process.
……
……
……

She showed that the fermentation was actually caused by the metabolic activities of yeast cells.

……
……..

V) Rewrite the following sentences using the simple future tense.

a) They prepared detailed and quite accurate drawings of moulds (fungi) and many other microbes, and these were the first known description of microorganisms.
……
……
……

b) He went on from his seminal work on spontaneous generation to a series of triumphs in medical microbiology.
……
……
……

c) She constructed simple microscopes that contained a single lens and used them to examine various natural substances.
……
……

Microbiology

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Introductory article

Article Contents

Online posting date: 14th August 2015

Microbiology is the study of microorganisms – biological entities too small to be seen with the unaided eye. Most major advances in microbiology have occurred within the past 150 years, and several important subdisciplines of microbiology have developed during this time, including microbial ecology, molecular biology, immunology, industrial microbiology and biotechnology. Microorganisms of various types exist in all three domains of life (the *Bacteria*, *Archaea* and *Eukarya*), and they are by far the most abundant life forms on Earth. Microscopic biological agents include bacteria, archaea, protists (protozoa and algae), fungi, parasitic worms (helminths) and viruses. Although a small percentage of microorganisms are harmful to certain plants and animals and may cause serious disease in humans, the vast majority of microorganisms provide beneficial services, such as assisting in water purification and the production of certain foods, and many are essential for the proper functioning of Earth's ecosystems.

Microbiology and its Historical Roots

Microbiology is the study of microorganisms, microscopic organisms that include in particular the bacteria, a large group of very small cells that have enormous basic and practical significance (Madigan *et al.*, 2015). Microbiology considers all aspects of microbial cells, including their structure, metabolism, diversity, genetics and evolution, ecology and roles in infectious diseases. Microbiology is composed of several subdisciplines, each of which is focused on part of the broader science. Scientists who study microorganisms, called microbiologists, typically specialise in one or more of these areas (**Table 1**).

The science of microbiology developed later than other biological sciences, primarily because needed tools, such as the microscope, had to be developed to convincingly prove that microorganisms (also called microbes) exist. Following early microscopic discoveries, methods for the culture and identification of microorganisms were developed, and from these, our understanding of the enormous beneficial and detrimental effects of microbes began to unfold. We review some historical highlights in microbiology now.

eLS subject area: Microbiology

How to cite:
Sattley, W Matthew and Madigan, Michael T (August 2015) Microbiology. In: eLS. John Wiley & Sons, Ltd: Chichester.
DOI: 10.1002/9780470015902.a0000459.pub2

The discovery of microorganisms

The English naturalist Robert Hooke (1635–1703) was an early microscopist and published the first book devoted entirely to microscopic observations of microorganisms. Hooke prepared detailed and quite accurate drawings of moulds (fungi) and many other microbes, and these were the first known description of microorganisms.

The first person to see bacteria, which are typically much smaller than moulds, was the Dutch amateur microscopist Antoni van Leeuwenhoek (1632–1723). van Leeuwenhoek constructed simple microscopes that contained a single lens and used them to examine various natural substances. These microscopes were crude by today's standards, but by careful manipulation and focusing, van Leeuwenhoek was able to see a wide variety of microorganisms, including bacteria. van Leeuwenhoek reported his discoveries in a series of letters to the Royal Society of London, which were then published in the *Philosophical Transactions of the Royal Society*, one of the most prestigious scientific journals of the era and the first in the world exclusively devoted to science. His communications revealed a previously hidden microbial world that existed in water, nutrient solutions, the oral cavity and virtually anywhere one could imagine. van Leeuwenhoek's discoveries also boosted the long held belief that invisible agents of some sort were the cause of infectious diseases, a belief that was not scientifically confirmed until nearly 200 years later. **See also**: **Leeuwenhoek, Antoni van**; **Light Microscopy**; **History of Bacteriology**

The golden age of microbiology

Major advances in microbiology in the nineteenth and early twentieth centuries surrounded four major scientific questions of that

Table 1 Selected major subdisciplines of microbiology

Subdiscipline	Focus
Agricultural/soil microbiology	Microbial diversity and processes in soils
Aquatic microbiology	Microbial processes in water and wastewaters
Biotechnology	Production of high-value products by genetically engineered microorganisms
Genomics	Genome sequencing and analyses
Immunology	The immune response
Industrial microbiology	Large-scale production of antibiotics and commodity chemicals
Medical microbiology	Nature and control of infectious diseases
Microbial biochemistry	Enzymes, chemical reactions in cells, structural biology
Microbial ecology	Microbial diversity and activity in natural habitats, biogeochemistry
Microbial genetics	Genes, heredity and genetic variation
Microbial physiology	Nutrition, metabolism and bioenergetics
Microbial systematics	Classification and nomenclature
Molecular biology	Nucleic acids and proteins, genetic information processing
Virology	Viruses and subviral particles

period: (1) can life emerge from nonlife, (2) do microorganisms cause infectious diseases, (3) how diverse is the microbial world and (4) do soil and water microbes carry out any beneficial activities? These questions were addressed, respectively, through the research of four giants in the then growing field of microbiology: the French chemist Louis Pasteur (1822–1895), the German physician Robert Koch (1843–1910), the Dutch microbiologist Martinus Beijerinck (1851–1931) and the Russian microbiologist Sergei Winogradsky (1856–1953).

Pasteur initiated studies on the mechanism of the alcoholic fermentation, which in the mid-nineteenth century was assumed to be a strictly chemical process. Through microscopic observations and other rigorous experiments, Pasteur showed that the fermentation was actually caused by the metabolic activities of yeast cells. Pasteur then used these insights to design a series of classic experiments to disprove the theory of spontaneous generation, the widely held belief at the time that living organisms could arise from nonliving matter. Pasteur showed that if nutrient solutions are freed of all microorganisms (typically by heating) and protected from airborne contamination, they remain microbe-free unless and until microorganisms are introduced. Pasteur's work on spontaneous generation forced him to develop effective sterilisation procedures, many of which have remained mainstays in microbiology and clinical medicine to this day.

Pasteur went on from his seminal work on spontaneous generation to a series of triumphs in medical microbiology. These included the development of a vaccine against the otherwise fatal disease rabies and the demonstration that attenuated vaccines, made from noninfectious but still active microbes, are safe and typically more effective than killed vaccines. These were some of the first practical successes in the field of infectious disease microbiology. However, despite the extensive work of Pasteur with various pathogenic agents (**see also**: **Pasteur, Louis**), definitive proof of cause and effect with any infectious disease remained elusive until the work of Robert Koch.

Robert Koch was a medical doctor primarily interested in infectious diseases and, in particular, the clear identification of causative agents of infectious diseases. Koch surmised that such studies would require the development of methods to obtain laboratory cultures of suspected disease-causing microbes (pathogens), and many of the procedures he devised to do this, such as the use of Petri plates, remain standards in the microbiology laboratory today. From experimental studies on the disease anthrax and, later, tuberculosis, Koch developed a set of criteria (known today as Koch's postulates) that, when faithfully executed, unequivocally link a specific microbe to a specific infectious disease.

To fulfil his postulates, Koch and his associates devised methods to isolate suspected pathogens from diseased animals and grow them in pure cultures (containing only a single kind of microbe) in the laboratory. The ability to transmit an infectious disease by injecting the laboratory-cultured pathogen into a healthy animal was the linchpin in Koch's postulates and supplied the definitive proof needed to join cause and effect. In his greatest medical triumph, Koch used his newly developed laboratory methods to link the bacterium *Mycobacterium tuberculosis* with the disease tuberculosis, and for this monumental achievement, Koch was awarded a Nobel Prize in 1905. **See also**: **Koch, Heinrich Hermann Robert**

As microbiology entered the twentieth century, its initial focus on basic principles, methods and medical aspects broadened to include studies of the microbial diversity of soil and water and the metabolic processes that microorganisms carry out in these habitats. Notable microbiologists of this era were Martinus Beijerinck and Sergei Winogradsky. Beijerinck's greatest contribution was his development of the enrichment culture technique, a process in which highly selective nutrient and incubation conditions are used to isolate microbes from nature whose metabolism and other properties are best suited to the conditions employed and thus give them a competitive advantage. Using this technique, Beijerinck isolated the first pure cultures of many common soil and aquatic microorganisms we know today. **See also**: **Beijerinck, Martinus Willem**

Sergei Winogradsky was also interested in the microbial diversity of soils and waters but was particularly interested in the metabolic reactions carried out by bacteria. Winogradsky was the first to show that bacteria can oxidise inorganic nitrogen and sulphur compounds and that the organisms that oxidised