




LES VERBES DANS LA RÉDACTION SCIENTIFIQUE ANGLAISE: TEMPS, VOIX, PERSONNE

Nadine Forget-Dubois, Ph.D.
Centre de recherche du CHU de Québec, Hôpital du St-Sacrement
2 novembre 2018

English conjugation is easy (most of the time)

- Infinitive form is preceded by “to”: to work
- Regular verbs:
 - Simple present: just add an “s” to the infinitive at the third person singular: I work, You work, He/She works
 - Simple past: just add an “ed”: I worked, You worked, He/She worked

 These simple rules cover most of your conjugation needs in a scientific paper

Basic rules

- Choose a present tense for:
 - Current knowledge
 - Demonstrations
- Choose a past tenses for:
 - Description of your methods and results
 - Attributions



Current knowledge

- Citations from published scientific sources
 - Children with ADHD **are** more likely to drop out of school (Truc et Machin, 2012).
 - Rhesus macaques **are expending** their territory (Type-Louche, 2011).
- Common knowledge
 - Snowy owls **eat** small mammals.
 - Canada's head of state **is** Elizabeth II.

Demonstration

- When referring to your tables and figures:

Table 1 **shows** the results of experiment 1.

Figure 2 **illustrates** the relationship between X and Y.

Descriptions of your methods and results

- You did your experiences/analyses in the recent past, so tell the story in the past tense:

Genomic DNA **was extracted** from oral epithelial cells.

The ANOVA **was** significant; post-hoc tests **showed** that the two experimental groups differed from the control group.

Attribution

- When you attribute a citation to authors in the structure of the sentence:

Watson and Crick (1953) **described** the structure of DNA.

- The same rule applies to historical facts.

Chlordecone, an endocrinian pertubator, **was used** as a pesticide in banana plantations well into the 1980's.

Reminder: auxiliary verbs and participles

- **Auxiliary verbs: to have and to be, followed by participles**
 - Modal verbs (can, should, could, will...) are also auxiliary verbs
- **Participles:**
 - Present: ends in "ing"
 - Past: ends in "ed" for regular verbs



PRESENT TENSES



Simple present

- Form: like infinitive, with an "s" at the third person singular
- Indicates **current**, **continuous** or **repeated** action
- **Current**: presently happening, over a period (not only right now)
- **Continuous**: is happening over a long indefinite period
- **Repeated action**: happens regularly

Examples of the simple present

- **Current action:**

Thousands of children **live** in refugee camps.

The territory of cardinals **expands** northward.

- **Continuous action:**

The traditional Inuit diet **includes** beluga fat.

Water **boils** at 100°C.

- **Repeated action:**

Puffins **spend** each winter in the North Atlantic.

Child development specialists **gather** every two years.

Present perfect

- Form: simple present of "to have" + past participle

third person: has + past participle

other persons: have + past participle

- The action happened at some point before now but is still relevant → The "present" perfect puts the action in the past

Examples of the present perfect

Scientists **have known** mercury to be a neurotoxin since the Minamata incident.

These authors **have described** the anti-androgenic properties of phthalates.

The FDA **has declared** this drug safe for pregnant women since 1999.

Present continuous (rare)

- Form: simple present "to be" + present participle

I am + present participle

You/we/they are + present participle

He/she/it is + present participle

- The action is happening right now

Proofs of climate change **are accumulating**.

Based on these results, our team **is designing** a new experiment.

Present perfect continuous (rare)

- Form: present perfect “to be” + present participle
 - Third person: has been + present participle
 - Other persons: have been + present participle
- The action started at a specific point in the past and continues to the present

The rhesus macaque population **has been rising** for a decade.

The North Coast of Quebec **has been showing** signs of erosion since the middle of the 20th century.



PAST TENSES

Simple past

- Regular form: infinitive + “ed”
- The action happened at a specific moment in the past.

We **tested** a multi-level model.

Sixteen studies **passed** the original screening.

Darwin **published** “the Origin of Species” in 1859.

Past perfect (rare)

- **Form: simple past “to have” + past participle**

had + past participle

- **The action ended before a specific past event**

Cyrano de Bergerac **had imagined** travelling to the Moon long before Jules Verne wrote “De la Terre à la Lune”.

The pharmaceutical company **had recalled** the drug before the FDA could take action.

Past continuous (rare)

- Form: simple past "to be" + present participle

I/he/she/it **was** + present participle

You/we/they **were** + present participle

- The action was interrupted in the past, or parallel actions happened in the past

Interruption:

We **were working** on the second series of experiments when we ran out of funds.

Parallel actions:

One assistant **was holding** the bird while the other **was putting** the ring on its leg.

Past perfect continuous (rare)

- Form: past perfect of "to be" + present participle

- Had been + present participle

- The action happened during a certain time before a specific past event

New fossil evidence suggests that the North American megafauna **had been declining** long before human hunters crossed the Bering strait.

Other uses of these verb tenses

- All these verb tenses can be used to express many more subtle nuances of time relationships
- Check <http://www.englishpage.com/verbpage/verbtenseintro.html> for many more examples
- The simple present, present perfect and simple past will meet most of your needs in a scientific paper

Irregular verbs

- Many common English verbs take irregular forms of conjugation
- Regular verb:

| Infinitive | Present | Past | Past participle | Present participle |
|------------|---------|--------|-----------------|--------------------|
| To work | work(s) | worked | worked | working |

| Infinitive | Present | Past | Past participle | Present participle |
|------------|----------|-------|-----------------|--------------------|
| To write | write(s) | wrote | written | writing |

Common irregular verbs

- | | | |
|-------------|-------------|--------------------|
| ▪ To be | • To drive | • To go |
| ▪ To have | • To do | • To give |
| ▪ To bear | • To eat | • To grow |
| ▪ To become | • To fall | • To hold |
| ▪ To break | • To find | • To keep |
| ▪ To choose | • To forbid | • To know |
| ▪ To cut | • To forget | And many |
| ▪ To draw | • To get | more... nothing |
| | | to do but to learn |
| | | them |

Modal verbs

- English has more auxiliaries than French: the modal verbs
- Modal verbs precede an infinitive (without the "to") to add meaning to a sentence
- Express the future and conditional
- Express obligation, speculation, possibility and many more nuances



Examples

- I **could** have analysed the data with Mplus but I chose SPSS. (possibility)
- I **should** analyse the data with Mplus, not SPSS. (suggestion)
- I **should** have analysed the data with Mplus, not SPSS. (regrets)
- I **would** have analysed the data with Mplus but I do not have the license. (preference, condition)
- I **must** analyse the data with Mplus, not SPSS. (obligation)
- I **might** (or **may**) analyse the data with Mplus instead of SPSS. (uncertainty)
- I **can** analyse the data with Mplus. (certainty)
- I **ought** to analyse the data with Mplus. (reasonable action)
- I **will** analyse the data with Mplus. (future)
- I **shall** analyse the data with Mplus (future obligation; too literary for



VERB TENSES AND IMRAD

Verb tenses in the Introduction

- The introduction contains a lot of established knowledge
mostly simple present, present perfect
- May contain attributions
 mostly simple past and present perfect
- You may have to use both times in the same sentence
- Remember, these are general guidelines, not rigid rules!


Examples of verbs in the Intro

- Established knowledge (simple present)

Altered functioning of the HPA axis **is** a robust correlate of major depressive disorder.

- Attribution (present perfect)

Some researchers **have argued** for the importance of genetic risk and preexisting biological vulnerabilities.

- Attribution (simple past) and established knowledge (simple present)

Caspi and colleagues **showed** that the long allele on the 5-HTT gene **moderates** the environmental risk for depression.

Examples of modal verbs in the Intro


Preexisting differences in HPA axis function **may** make certain people more vulnerable to stress.

In this paper, we discuss the circumstances under which interaction **can** be modeled as a product term.

There is a clear implication that other indirect effects **could** (and probably **should**) be examined.

Verb tenses in the Method

- Well-known instruments and procedures are established knowledge (description)
present tense

 use of these methods and any procedure you created: tell how you did it in the
recent past

simple past and present perfect



Examples of verbs in the Method

- Authors' method:
We **chose** these markers because of high heterozygosity values, reliability, and chromosomal locations.

- Established method:
Bootstrapped confidence intervals **are** more powerful than the Sobel test to assess a mediator's significance.

- Authors' use of an established instrument
We **selected** the Block Design subscale, which **is** highly correlated to full-scale IQ.

Examples of modal verbs in the Method

The enhancement solution induced the fluorescence, which **can** be detected with a DELFIA-Fluorometer.

In a twin design, the relative contributions of genes and environment **can** be assessed by comparing the similarity of twin pairs as a function of zygosity.

This initial step is helpful for determining which multivariate models **should** be tested.

Verb tenses in Results

- Your results are not yet established knowledge

 They must be reported in a past tense.

- So: the Results section will be almost entirely written in the simple past, except for demonstrations

Examples of verbs in the Results

- Demonstration (simple present)
Figure 1 **illustrates** the interaction model and table 2 **reports** the estimated parameters.
- Results (simple past):
The interaction term **was** significant.
We **identified** 260 exonic variants in the seven sequenced NMDARs genes.

Examples of modal verbs in the Results

To test whether differences in cortisol production **could** be ascribed specifically to differences during the morning or during the afternoon, we...

Rare!

Verb tenses in the Discussion

- The Discussion refers to your methods and results, which should be reported in a past tense

- The Discussion also refers to the established literature, which must be reported in a present tense.

- Referring the paper's results in the present tense is sometimes accepted in this section
 - but beware of the confusion between your study and previously established knowledge.

Examples of verbs in the Discussion

- Reference to established knowledge (Present perfect and simple present)
 - Although several studies **have purported** to show evidence of differential sensitivity to the environment, there **are** important limitations.

- Interpretation of the authors' results (simple past)
 - The present study **showed** that a dimension of emotional dysregulation **moderated** treatment response.

Examples of modal verbs in the Discussion

It **should** be noted that...

It **would** be important to identify the mechanisms by which the risk factors affect the outcome.

Particularly important **will** be prospective studies that examine multiple aspects of HPA axis function.



PASSIVE VS ACTIVE VOICE



The voice of a verb

- **Active voice:** The subject does the action
The participants **filled** a questionnaire.
- **Passive voice:** the subject receives the action
A questionnaire **was filled** by the participants.
- The passive voice **is formed** by “to be” at the appropriate tense and the verb's past participle.

Use of the active voice

- Emphasises the **action**
- The active voice dominates in speech and most forms of writing
 - more familiar to readers and easier to follow
- Makes sentences (usually) shorter, straightforward, more energetic
- Should be the voice by default, although underused in scientific papers

Examples

the relation between insensitive parenting and externalizing behaviors in preschoolers **varies** by child genotype for the D4 dopamine receptor.

Smoking during pregnancy **alters** the environment of the fetus.

We **investigated** whether cannabis use is associated with schizophrenia.

Use of the passive voice

- Emphasises the **receiver** of the action
- Deemphasises the **doer** of the action
- Adds diversity to the composition and sometimes smooths the connection between two sentences or clauses
- Helps you deflect responsibility for what you wrote
- Very popular in scientific papers: some scientists assume that they must favor the passive voice to sound scholarly

Examples

HPA axis indicators **have** rarely **been measured** in clinical settings.

For each patient, two control subjects **were recruited**.

Conditional logistic regression techniques **were required** to take the matched case-control design into account.

Misuse of the passive voice

- Uselessly wordy:

It **has been argued** that caution is required in the interpretation of such findings.

- A case of avoiding responsibility:

The analyses **were done** by Stata (i.e. not me!).

- Boring:

It **was shown** that schizophrenia and cannabis use **were associated** but no underlying GxE interaction **was found**.

Good use of the passive voice

- When we don't care about the doer of the action (often in the Method and Results sections):

Instruments **were administered** either in English or in French.

- To ease the transition between sentences or clauses:

One candidate gene **is** a variation in the serotonin transporter gene, which **has long been viewed** as a potential moderator of environmental stress.

Is the passive voice more objective?

- Neither voice is intrinsically more objective
- The passive voice may superficially seem more objective because it eludes the authors of the papers we cite (and ourselves)
- But: authors do exist and acknowledging that is not subjective (we exist too)

The passive voice should be a **choice** that serves a purpose in the sentence, not the default option just because other people uses it.



THE PERSON OF THE VERB

Person of the verb

- First person: I (singular) We (plural)
- Second person: You (singular and plural)
- Third person: He, She, It (singular) They (plural)
 - Verbs with things and animals for subjects are conjugated at the third person
- The second person is virtually absent from scientific papers
- The third person reigns
- What about the first person?

The third person

- We use the third person for:
 - Most sentences, which have an object or an abstract construct for subject
 - **Breastfeeding is thought** to influence brain development.
 - **Research has consistently** linked neighborhood deprivation to problem behaviors.
 - When other authors are the subject of the verb
 - **Bowlby formulated** the theory of attachment.

The first person

- Methodology professors often tell their students that “I” and “we” are forbidden in scientific writings
- Nuance: **passing your opinion as fact is forbidden, not the first person**
- Reporting your role in the experiences and analyses is perfectly objective
- Avoiding the first person does not mean the writing is objective
- “We” means all the authors; if there is one author the “I” should be used

Good use of the first person

- To describe your role:

We tested a multiple regression model.

- To emphasize that you made a choice or a judgement call, which you submit to your peers:

The skewness index was equal to 1.95; **we kept the raw distribution**.

APA style manual

“An experiment cannot *attempt to demonstrate, control unwanted variable, or interpret findings*, nor can tables and figures *compare* (all of these can, however, *show or indicate*). Use a pronoun or an appropriate noun as the subject of these verbs. ***I or we*** (meaning the author or authors) can replace ***the experiment***.”

Publication Manual of the American Psychological Association, 6th ed., p. 69)

Metonymy

- Using an abstract construct to represent objects or people:

This study shows that A causes B.

- A study has no finger to point the results, its an image, perfectly acceptable. But consider:

The experiment controls unwanted variables.

- A metonymy is inappropriate when the abstract idea does a concrete action
 - Use the first person instead

How to avoid the first person

- There is no need to hide yourself, but too many “we” get annoying.

- Alternatives to use as subjects of verbs:
 - The current study...
 - The authors (of the current study)

- The passive voice erases the author

Take-home

- English conjugation is relatively simple, but you need to know the relationship with time expressed by each tense
- Established knowledge should be reported in the present tense
- Your contribution should be reported in the past tense
- The passive voice is useful, but should be a choice rather than the default voice
- A judicious use of the first person lightens the text and helps avoiding dubious metonymies

Sources

- Day, R. A. (1995). *Scientific English: A Guide for Scientists and Other Professionals* (2th edition). Phoenix, AZ: Oryx Press.
- Day, R. et Gastel, B. (2011). *How to Write and Publish a Scientific Paper*, Seventh Edition, Santa Barbara, CA: Greenwood.
- Schimel, J. (2012). *Writing Science: How to Write Papers That Get Cited and Proposals That Get Funded*. New York, NY: Oxford.
- Silvia, P. J., (2015). *Write it up! Practical Strategies for Writing and Publishing Journal Articles*. Washington, DC: American Psychological Association.
- Sword, H. (2012). *Stylish Academic Writing*. Cambridge, MA: Harvard University Press.
- Zinsser, W., (2006). *On Writing Well, 30th Anniversary Edition*, New York, NY: Collins.