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Qu'est-ce qu'un article de recherche ? *Research articles: a definition*

Research articles (or **research papers**) are published in **journals**¹ devoted to particular **fields**² of study. They are both written and read by **researchers**³ and **scholars**⁴ and therefore provide a link between **scientists** and contribute to establishing a sound⁵ **basis for knowledge**. They are aimed at a **knowledgeable readership**⁶ that will be able to grasp⁷ the implications of the studies presented.

An article can be **submitted for publication**⁸ if it is an **original piece of research** which will be **relevant**⁹ for other researchers. The novelty of the **findings**¹⁰ exposed and the **breakthrough**¹¹ they may represent should guarantee publication provided¹² the few rules concerning the form and structure of **academic publishing**¹³ are respected.

The function of scientific papers is to contribute to the **advancement of research**. It is therefore of prime importance that each new contribution should add relevant information or comment to the overall domain. The whole research community can then use **primary scientific publications** for further¹⁴ **experiments** or studies.

In order to **assess**¹⁵ such novelty and relevance, serious journals are **peer-reviewed**¹⁶, that is to say that **fellow researchers**¹⁷ on the journal's **reading committee** read and comment on their colleagues' papers before they can be published and eventually¹⁸ read by a **scientifically literate**¹⁹ public.

The **target audience**¹ and the function of scientific research journals differentiate **peer-reviewed publications** from the mainstream² scientific press, which targets a larger readership and aims at **popularising**³ science.

1. revue (scientifique)
2. domaine
3. chercheur
4. érudit, scientifique
5. solide
6. un lectorat cultivé, averti
7. comprendre, saisir
8. proposé à la publication
9. pertinent
10. résultats
11. découverte capitale
12. à condition que
13. l'édition scientifique et universitaire
14. plus approfondi
15. évaluer, juger
16. *to be peer-reviewed*: avoir un comité de lecture
17. confrère
18. finalement
19. *to be scientifically literate*: avoir des connaissances en sciences

1. public cible
2. grand public
3. vulgariser

Scientific American, for instance, is a good example of a **popular science magazine**⁴: it tackles⁵ scientific issues and makes **developments**⁶ in science and technology understandable to an educated but **non-specialised audience**, who want to be introduced to a new field or to be up to date⁷ on the latest⁸ science news. Articles in such scientific magazines are not necessarily **authored** by specialists and do not require the papers to be original. However, they provide⁹ interesting **insights**¹⁰ into fields one may not be acquainted¹¹ with and keep an up-to-date account of **the state of research**.

4. revue de vulgarisation scientifique
5. aborder
6. progrès, évolution
7. au courant (de)
8. dernier
9. apporter, fournir
10. idée, perspective
11. connaître

A. Types of publication

1. Primary publications

Scientific writing falls¹ into two categories: original scientific research, that is to say **valid primary publications**, and... the rest. The Council of Science Editors published a working definition in 1968:

*"An acceptable primary scientific publication must be the **first disclosure**² containing sufficient information to enable **peers**³ (1) to assess observations, (2) to repeat experiments, and (3) to evaluate intellectual processes."*

Research articles have to **comply**⁴ with the definition to be accepted as valid original research. Depending on their length and purpose⁵, several types of articles can be submitted for publication. Every journal presents the various categories of papers they expect⁶. For instance *Science* **calls**⁷ for Research Articles, Reports and Technical Comments; *Nature* publishes Articles, Letters, Brief Communications and Technical Reports.

The most important findings are recorded⁸ in **full-length**⁹ **research articles**, which provide readers with a **comprehensive**¹⁰ presentation of the study that was **carried out**¹¹/**conducted**¹¹. They are supposed to **document**¹² results which represent a major **advance** in the field. As their name suggests, they are long (5,000 to 6,000 words, that is around five pages) and complete with 40 to 50 references to previous **literature**.

Short (or brief) communications are of course... shorter than full-length RAs. Their **scope**¹³ is not as comprehensive, and they generally do not **exceed** 3,500 words, nor do they contain more than two figures. They nonetheless contribute to the advancement of knowledge by **disclosing**¹⁴ **outstanding**¹⁵ findings.

1. se diviser (en)
2. révélation
3. pair
4. se conformer (à)
5. but
6. attendre
7. appeler
8. rapporter
9. long
10. complet, détaillé
11. réaliser
12. décrire et documenter
13. portée, champ
14. divulguer
15. remarquable

Letters serve the same purpose as short communications and are roughly¹⁵ the same length but generally aim¹⁶ at a wider audience. They introduce a field to **non-specialists**, focus¹⁷ on a particular issue or interesting results and provide a **broader**¹⁸ **perspective** in less than 2,000 words.

Rapid communications are short as well; they are meant to inform readers about important news that has to be **disclosed** quickly. Some encouraging findings about the efficiency¹⁹ of a vaccine could for instance be **disseminated**²⁰ in this kind of article.

15. à peu près
16. viser
17. se concentrer (sur)
18. plus large
19. efficacité
20. diffuser

2. Other types of scientific writing

Reviews¹ focus on several previously published papers in order to take stock² of the advancement of research in a field.

As the name suggests, **conference proceedings**³ proceed⁴ from **talks**⁵ given at a conference. They can provide topical⁶ information on findings that have not yet been published in traditional journals, giving the scientific community quicker access to the information.

In **technical comments**, scientists can discuss previously published papers. They are no longer than 1,000 words and the authors of the original paper are given an opportunity to **reply**⁷.

Reviews and conference proceedings, in the same way as published **theses**⁸ and **dissertations**⁸, do qualify as scientific writing but they are not considered as primary scientific publications (as defined by the Council of Science Editors). They are, however, **subjected to peer-review** before publication.

1. compte rendu
2. faire le point (sur)
3. actes de colloque
4. to proceed from: venir de
5. communication, conférence
6. d'actualité
7. répondre
8. mémoire de thèse

B. The publication process

When a research article is submitted to a journal, whether it be¹ by post or electronically, the **editor**² sends the **manuscript** to at least two anonymous **reviewers**³ (aka⁴ **referees**³) who will be responsible for **accepting** or **rejecting** its publication.

They can either accept the manuscript **unconditionally**, or accept it provided the authors alter⁵ it according to their **recommendations**. Equally, they can either reject the paper outright⁶ or reject it but encourage **revision** and invite **re-submission**.

A reviewed article, therefore, is generally **redrafted**⁷ along the lines suggested by the referees. New material is added where necessary, some parts may be **rephrased**⁸ or rewritten. The article is then submitted again for **feedback**⁹ as a **revised manuscript**.

1. que ce soit
2. rédacteur en chef
3. relecteur
4. également appelé (acronyme de *also known as*)
5. modifier
6. catégoriquement
7. rédiger à nouveau
8. reformuler
9. commentaires et remarques

Once they are definitely accepted, research articles are left in the hands of a **copy editor**¹⁰ who corrects **typographical errors** (also called **typos**¹¹), grammar and **spelling**¹² mistakes, and takes care of **typesetting**¹³. When the paper is ready for printing, the **proofs**¹⁴ are sent back to the authors, who should check their manuscript for accuracy¹⁵ and **proofread**¹⁶ it once again, in particular to hunt down¹⁷ **misprints**¹¹. They should, however, refrain¹⁸ from rewriting at this stage.

When the **redlined proofs**¹⁹ have been taken into account²⁰, the authors can **pass the proofs**²¹ and order **reprints**²² unless the journal prefers to send them as an electronic document, which has now become the norm.

10. secrétaire d'édition
11. coquille
12. orthographe
13. composition
14. épreuves
15. exactitude
16. relire
17. traquer
18. s'abstenir (de)
19. épreuves corrigées
20. prendre en compte
21. donner le bon à tirer
22. tiré à part

C. Ethical issues

"The reporting of scientific results is based on trust¹." Donald Kennedy, 13 January 2006.

With this statement², the **editor-in-chief**³ of *Science* insisted that the very nature of science – and the way it is organised – must not be disrupted⁴ by occasional **unethical**⁵ behaviour⁶.

1. confiance
2. déclaration
3. rédacteur en chef
4. bouleverser
5. contraire à la déontologie
6. comportement

1. Copyright

The American copyright law is based on Article 1 of the United States Constitution. Its purpose is "to promote the progress of science and useful arts, by securing¹ for limited times to authors and inventors the exclusive right to their respective writings and discoveries." What is protected is not so much ideas themselves as the way in which they were originally expressed.

If you use material that has already been published, you have to get permission from the **copyright holder**² to quote it.

"**Fair use**"³, however, is legal and allows⁴ limited use of **copyrighted**⁵ material for academic purposes (reviews for instance). In this case, you do not require permission from the **copyright owner**².

In the case of research articles, copyright is generally transferred from the authors to the journal in which they are published, so you may actually need **permission** from the publisher for subsequent⁶ use of your own material.

1. protéger
2. personne qui détient les droits
3. usage restreint
4. permettre
5. déposé
6. ultérieur

2. Plagiarism

“Good scientists build on each other’s works. They do not, however, **take credit**¹ for others’ work.” (Robert Day & Barbara Gastel. *How to Write and Publish a Scientific Paper*. Greenwood Press, 2006)

Every scientist relies² on what has been done – and published – by other researchers. This is how scientific knowledge can **build up**³ through the ages.

Yet, using previous literature as a basis for your article does not mean **pilfering**⁴ from it. You should never **quote without acknowledgement**⁵ and always **give proper credit to** the author you quote.

Unlike **blatant**⁶ plagiarism, which amounts⁷ to knowingly⁸ **copying out**⁹ somebody else’s words, **inadvertent**¹⁰ plagiarism may arise¹¹ without your knowing it. The only way round¹² this problem is to check your references carefully.

If you want to **paraphrase** another author, you should distance yourself from what you have read and **redraft** your text without looking at the articles that inspired you, then check them for **factual accuracy**.

Self-plagiarism is another questionable¹³ practice. It consists in reusing your own previously published work without indicating it clearly, which is close to lying¹⁴ to your readers and dishonest vis-à-vis your editor.

1. s’attribuer le mérite (de)
2. s’appuyer (sur)
3. se construire
4. piller
5. citer sans mentionner la source
6. flagrant
7. revenir (à)
8. délibérément, en connaissance de cause
9. recopier
10. involontaire
11. survenir
12. façon d’éviter
13. douteux
14. mentir

3. Fake results

In early 2006, the international scientific community was in shock when a high-profile¹ Korean researcher in **stem cell**² biology admitted to **fabricating**³ results. Such a case of **gross misconduct**⁴ is fortunately very rare, but the scandal sparked⁵ questions within the scientific community, especially in the scientific publishing world.

The peer-reviewed journal that had published the **fraudulent** papers took full responsibility and **retracted**⁶ them publicly. Several journals then started to re-evaluate their publication procedures and standards, since peer-reviewing had not proved a sufficient safeguard⁷ to **screen out**⁸ **fake**⁹ results and **misleading**¹⁰ **data**¹¹.

Although patently¹² not infallible, peer-review has not been ruled out¹³ as a publication process. **Open peer-review**, in which authors know the names of their referees and can engage in open discussions with them has been developing since 2006.

1. en vue
2. cellule souche
3. falsifier
4. faute professionnelle grave
5. susciter
6. retirer
7. garantie
8. filtrer
9. faux
10. mensonger
11. données
12. manifestement
13. exclure

2

Écrire un article de recherche *How to write a research article*

“The goal¹ of scientific research is publication... A **scientific experiment**, no matter how spectacular the results, is not complete until the results are published.” (Robert Day & Barbara Gastel. *op.cit.*)

Yet, writing a research article is not a mere² matter of publishing results. As a specific genre that will eventually allow you to become part of a scientific community, the research article is in actual fact a **rhetorical exercise** with its imposed figures and foreseeable³ pitfalls⁴.

1. but
2. simple
3. prévisible
4. piège, embûche

A. Getting started

1. Timing

As the saying goes¹, “**procrastination** is the thief of time.”² The best thing you can do is to start early. Block off³ time and space and set⁴ yourself **deadlines**⁵.

You can describe your **experimental protocol** as soon as you have finished all your **critical**⁶ experiments and start getting **conclusive** results.

Bear in mind⁷ that the sooner you publish, the less likely you are to **be scooped**⁸ by faster researchers in your field. Although you are not running a race, pressure to publish truly is part of a researcher’s life. And you are of course aware that publishing is crucial – to put it in blunt⁹ terms, **publish or perish!**

1. comme le dit le proverbe
2. Ne remettez pas à demain ce que vous pouvez faire aujourd’hui
3. dégager
4. fixer
5. délai, date limite
6. essentiel, crucial
7. garder à l’esprit
8. se faire doubler
9. direct, franc

2. Choosing a target journal

Before starting to write, select a **journal**¹.

You will submit your paper to only one periodical – **multiple submission** is a no-no². It is both unethical and a waste of time³. Indeed, the journals to which you submit your paper will pass it on to **referees**⁴ who will spend valuable time evaluating your work. Do not even think of publishing the same paper in several journals. It would be a case of **self-plagiarism**⁵, i.e.⁶ a type of scientific **misconduct**⁷.

Selecting a journal is the first major step⁸ and it will determine what you should write, how you have to write it and when it will be published. The choice of the journal will also have an impact on your future career. Needless to say, the more **reputed** the journal, the more often your article will be read – and **cited** by fellow researchers.

Journal Citation Reports (JCR), an annual publication of the Institute of Scientific Information available⁹ through **academic libraries**¹⁰, can help you define your **target**¹¹ journal. It provides basic bibliographic information and above all the statistical measurement of every journal's **impact factor**. The impact factor is based on the average¹² number of **citations** per article. **High-profile**¹³ **publications** build their reputation both on the quality of **peer-reviewing**¹⁴ and the **high visibility** of the articles they publish.

Yet, it is important to choose an appropriate journal for each paper and not to submit work that is too preliminary or too **narrow in scope**¹⁵ for a **top journal**. To publish some work **in progress**¹⁶, you would do better to aim at a **specialist journal**. It is rarely advisable to publish too soon anyway, even if you want to keep your name in the limelight¹⁷ and have a long CV.

1. revue (scientifique)
2. *to be a no-no*: ne pas se faire
3. perte de temps
4. relecteur
5. auto-plagiat
6. c'est-à-dire (abréviation du latin *id est*)
7. faute professionnelle
8. étape
9. accessible
10. bibliothèque universitaire
11. cible
12. moyen
13. réputé
14. évaluation par un comité de lecture
15. de portée limitée
16. en cours
17. sur le devant de la scène

3. Preparing to write

To avoid wasting precious time on **layout**¹ after your article is **drafted**², read the **instructions to authors**³ first. Most journals publish them to guide authors over the publication hurdle⁴. In any case, you have to refer to these instructions before **submitting** your **paper**.

They cover, among other things, all the layout **requirements** of the article: the approximate number of words, the **font**⁵ and its size, the **indentation**⁶, the accepted abbreviated forms, the norms used to **lay** references **out**, the **software**⁷ compatible with that of the journal, etc. You may also be able to download specific **style sheets**⁸ from some journals' websites.

1. mise en page
2. *to draft*: écrire au brouillon
3. consignes de rédaction
4. parcours du combattant
5. police de caractère
6. alinéa
7. logiciel (*software*: nom indnb sg)
8. feuille de style

If no instructions to authors are specified, you should refer to **style manuals** such as the *MLA Handbook for Writers of Research Papers*, published by the Modern Language Association of America, or *The Publication Manual of the American Psychological Association*.

Or you can find a particularly clear paper and use it as a **template**⁹ for your own work: prepare a **style sheet / template of fonts**⁸ that you will use as you write.

9. modèle

Typography

V

<i>In bold</i>	En gras
<i>Embolden</i>	Mettre en gras
<i>In italics</i>	En italique
<i>Italicise</i>	Mettre en italique
<i>Underlined</i>	Souligné
<i>Upper case</i>	Haut de casse, majuscule
<i>In upper case</i>	En majuscules
<i>Lower case</i>	Bas de casse, minuscule
<i>In lower case</i>	En minuscules
<i>Indent</i>	Mettre en retrait
<i>A footnote</i>	Une note de bas de page
<i>A section heading</i>	Un titre de section
<i>A header</i>	Un en-tête
<i>A comma</i>	Une virgule
<i>A period (US) / full stop (GB)</i>	Un point (à la fin d'une phrase)
<i>A colon</i>	Deux-points
<i>A semi-colon</i>	Un point-virgule
<i>Quotation marks, inverted commas</i>	Des guillemets
<i>Brackets</i>	Des parenthèses
<i>In brackets</i>	Entre parenthèses

Écrire un article dans la langue de Shakespeare

En tant que francophone, vous pouvez être tenté de rédiger entièrement votre article en français avant de le faire traduire ou de le traduire vous-même. C'est loin d'être la meilleure option, à moins de disposer des services d'un collègue anglophone, qui sera à la fois spécialiste de votre discipline et apte à vous traduire sans vous trahir... Contrairement à ce que l'on pourrait croire, même si votre article est déjà rédigé, voire publié dans une revue scientifique française, vous perdrez plus de temps à le traduire qu'à le reprendre entièrement (*write from scratch*). En écrivant directement en anglais, vous allez devoir reformuler (*rephrase*) votre réflexion et peut-être réorganiser (*rearrange*) votre