MPSI – COURS DU 10/09/2025

~~*It's an extract/*It comes from~~

- It IS / WAS taken from
- It was published in / on (a site)
- It's an article from

IN December 2022

ON December 29th 2022

MEMO-ANGLAIS : N16

N16 Préposition devant une date

Il ne faut pas confondre les prépositions devant les **jours, mois, années** :

- Si la date et/ou le jour sont précisés → ***ON***
- Autres cas → ***IN***

À l'oral, on dit → *"the 12th of June 1999"*
À l'écrit, on simplifie → *June 12, 1999* ou *12 June 1999*

*We met **on May 25, 1996.***
*Films are released **on Wednesdays** in France and mostly **on Fridays** in the USA.*

*Shakespeare died **in April 1616.***
*Paul Auster was born **in 1947.***

*The articles discuss ~~about~~ ~~the~~ fraud in ~~the~~ science.

Documents à télécharger - Anglais

Anglais / Exercices supplémentaires

- SYNTHESE
- CONJUGAISON
- exercice déterminants
- exercice déterminants 2
- exercice déterminants 2_correction
- exercice déterminants_corrigé
- EXERCICES GRAMMAIRE EN LIGNE pour consolider les bases
- INTERROGATIVES_Elon Musk_worksheet
- INTERROGATIVES_exercice
- INTERROGATIVES_fiche grammaire
- INTERROGATIVES_RAPPEL

Document 1: Journal declines to retract fish research paper despite fraud finding

Adapted from *Science*, February 2023

The *Proceedings of the Royal Society B: Biological Sciences* says it will not retract a paper on anemone fish behavior even though a lengthy university investigation found it was made up.

An independent investigative panel at the University of Delaware (UD) concluded last year in a draft report that "discrepancies and issues" with the 2016 study "constitute fabrication." But the journal said in an editor's note on 1 February that its own investigation did not turn up enough evidence of fraud, in part because a correction by the authors had solved the paper's key problem.

Fish physiologist Timothy Clark of Deakin University, part of an international group of **whistleblowers** that found problems with the paper, calls the decision "infuriating."

The paper, authored by marine ecologists Danielle Dixson of UD and Anna Scott of Southern Cross University in Australia, is one of 22 studies published between 2008 and 2018 that Clark and his fellow whistleblowers have claimed are fraudulent. The complaint focused in particular on Dixson and Philip Munday, Dixson's Ph.D. supervisor at James Cook University in Australia. Both have denied wrongdoing.

An independent panel at UD that investigated Dixson's work was "struck by a serial pattern of sloppiness, poor recordkeeping, copying and pasting within spreadsheets, [and] errors within many papers under investigation," according to a heavily redacted draft report obtained by *Science*. It also concluded that several papers involved research misconduct. UD said it has asked journals to retract three papers.

For one of those, published in *Science* in 2016, Dixson did not have enough time to carry out the massive number of experiments described in the paper, the panel wrote, and an Excel file purportedly containing the study's raw data contained more than 100 inexplicable duplications that showed it could not be real. *Science* retracted the paper in August 2022.

The *Proceedings B* paper suffered from similar timeline issues, according to the panel. The paper's conclusion—that anemone fish can "smell" whether coral reefs are bleached or healthy—was based on a series of experiments in which fish are placed in a laboratory apparatus called a choice flume that forces them to decide which direction to swim.

Dixson collected the data for the study, which involved some 1800 individual trials, each 9 minutes long, according to the draft report. If she used a single flume, completing the trials would have taken 22 12-hour days. But the paper said the experiments ran from 12 to 24 October 2014, a period of just 13 days. Scott and Dixson posted a correction to the paper in July 2022, in which they said the experiments actually took place over 33 days, between 5 October and 7 November 2014.

One of the whistleblowers, Josefin Sundin of the Swedish University of Agricultural Sciences, **says the journal appears to have been too credulous in running the correction**. "Why would anyone run an experiment for 33 days but by mistake write the methods and data as if it was conducted during 12 days?" she asks. "That is a very large discrepancy."

Along with the correction, Dixson and Scott also uploaded the raw data for the study, which had been missing even though the paper stated it was available online. That data set "raised a second set of issues," according to the editor's note. This apparently refers to an analysis of the Excel file by the whistleblowers showing that it suffered from some of the same problems as the one for the *Science* paper, including duplication of data across columns and numbers that did not add up correctly.

But the journal's investigation found there were other possible explanations for any suspicious patterns, and that some problems with the data "are more likely the result of mistakes or poor data curation, and their correction would not change the conclusions," according to the note.

A journal refused to retract a paper although it was fabricated.

An investigation group pointed to several inconsistencies, but the journal the correction issued solved the problem.

→ whistleblowers are furious / while the authors don't acknowledge any dishonest behavior

Problems in several papers :

- "sloppiness" / lack of rigor
- Copying and pasting ("inexplicable duplications")
- Faulty registration of information
- Errors
- Impossibility of carrying out all these experiments in the specified timeframe

A correction was issued :

- Whistleblowers are not satisfied, especially since it raises new issues.
- But the journal considers these approximations do not alter the overall conclusion of the research.

Document 2: There's far more scientific fraud than anyone wants to admit

Adapted from *The Guardian* Wed 9 Aug 2023

Scientific misconduct has enjoyed some limelight lately. The president of Stanford, Marc Tessier-Lavigne, resigned last month after a series of investigations exposed serious problems in his research; an independent review of Tessier-Lavigne's work found no evidence that he falsified data himself but concluded that his research failed standards "of scientific rigor and process" and that he failed to correct the record on multiple occasions.

And in June it was revealed that a scholar at Harvard Business School, Francesca Gino, was accused of having falsified research about – wait for it – honesty.

Of course, scientific misconduct does not happen only at Stanford and Harvard. Of the nearly 5,500 retractions we catalogued in 2022, and the thousands of cases we have reported on since launching our watchdog website Retraction Watch in 2010, the vast majority involve researchers at institutions **without anywhere near Stanford and Harvard's pedigrees.**

The number of retractions each year reflects about a tenth of a percent of the papers published in a given year – in other words, one in 1,000. Yet the figure has grown significantly from about **40 retractions in 2000,** far outpacing growth in the annual volume of papers published.

Retractions have risen sharply in recent years for **two main reasons: first, sleuthing**, largely by volunteers who comb academic literature for anomalies, and, **second, major publishers' (belated) recognition that their business models have made them susceptible to paper mills** – scientific chop shops that sell everything from authorships to entire manuscripts to researchers who **need to publish lest they perish.**

These researchers are required – sometimes in stark terms – to publish papers in order to earn and keep jobs or to be promoted. The governments of some countries have even offered cash bonuses for publishing in certain journals. Any surprise, then, that some scientists cheat?

The truth is that the number of retractions in 2022 – 5,500 – is almost definitely **a vast undercount** of how much misconduct and fraud exists. We estimate that at least 100,000 retractions should occur every year; some scientists and science journalists think the number should be even higher. (To be sure, not every retraction is the result of misconduct; about one in five involve cases of honest error.)

The lengths to which scientists go to fight allegations of fraud is part of the reason the rate of retraction is lower than it should be. **They punish whistleblowing underlings, sometimes by blaming them for their misdeeds. They sue critics.** Although they rarely prevail in court, the threat of such suits, and the cost of defending against them, exerts a chilling effect on those who would come forward.

Journals and publishers also fail to do their part, finding ways to ignore criticism of what they have published, leaving fatally flawed work unflagged. They let foxes guard the henhouse, by limiting critics to brief letters to the editor that must be approved by the authors of the work being criticized. Other times, they delay corrections and retractions for years, or never get to them at all.

One of the main reasons scientists feel pressure to cut corners or fudge data is because funding rates are so low. The US National Institutes of Health last year approved about 20% of **applications for new grants.** And that's a marked increase from recent years.

Funding to detect and sanction fraud should be a reasonable fraction of the dollars being spent – instead of mere millions in a sea of tens of billions. **Until publishing papers is decoupled from earning funding and employment, however, it's difficult to imagine how much will change.**

Stanford / Harvard : scholars exposed for tampering with the results of their research.

This doesn't happen in the most prestigious institutions.

According to a watchdog

- 5,500 paper retractions in 2022
- 40 in 2000

Reasons:

- More papers published
- More investigations by watchdogs and whistleblowers
- The acknowledgement of the existence of "paper mills"

"Publish or perish" : researchers need to publish to get / keep a job or be promoted.

The actual number of retractions should be at least 100,000 every year

Not only due to misconduct : 20% due to honest mistakes

But the scientists who are exposed fight back : those who speak out may be punished by their superiors or even sued.

Journals/publishers come up short → reluctant / dragging their feet

Reason for fraud : low funding rates

There should be more funding to detect fraud.

Research and publishing should no longer be linked to getting funding / getting a job.

Otherwise things are unlikely to change.

Document 3: 'I lose sleep at night': Experts fight to expose science fraud in Australia

Adapted from the *Sydney Morning Herald,* June 27, 2023

A leading scientist behind a bid to track scientific fraud and misconduct in Australia hopes it will shine a light on the issue.

Online tool Retractions Australia is tracking scientific papers that have been retracted – or pulled – by peer-reviewed journals.

It is backed by leading research institute Neuroscience Research Australia and already has about 500 entries drawn from a database maintained by the US-based Centre for Scientific Integrity.

Retractions and scientific misconduct, once thought to be extremely rare, have come into sharp focus over the past decade as scientists have discovered more cases.

Ivermectin gained prominence as a treatment for COVID-19 based on a large number of fraudulent studies, some researchers argue.

One estimate suggests about one in every 50 published papers has evidence of deliberate manipulation; other scientists have even gone as far as claiming "most published research findings are false".

Professor Simon Gandevia, deputy director of Neuroscience Research Australia and one of Australia's most senior scientists, founded Retractions Australia after having **increasingly strong concerns** about the direction of the country's research establishment.

"I thought I was part of a river that was going in the right direction. But it is totally clear now there are major forces that are distorting all that. I lose sleep at night," he said.

The new project was welcomed by the Association of Australian Medical Research Institutes on Monday. "Research integrity is the cornerstone of ensuring quality scientific work," a spokeswoman said. "The Australian public are now able to see with more reliability when scientists review work, which will help them understand the lengths scientists will go to to constantly verify and validate results."

Rather than making innovative breakthroughs, modern scientific careers tend to depend more on publishing papers in scientific journals – a process nicknamed **"publish or perish".**

That encourages researchers to pump out studies and push the boundaries of accuracy.

In recent years, a thriving "paper mill" industry has also taken hold in certain countries, allowing academics to pay to be listed as an author on a paper.

In Australia, research misconduct is **policed by a scientist's own institution** – creating an incentive for things to**be swept under the rug.**

Australia : new attempt to detect scientific fraud → online resource to track retracted papers.

Misconduct and retractions have been on the rise.

Example : unreliable research supported Ivermectin as a Covid-19 treatment

1/50 papers have manipulated data

Some even claim “most” papers have been falsified.

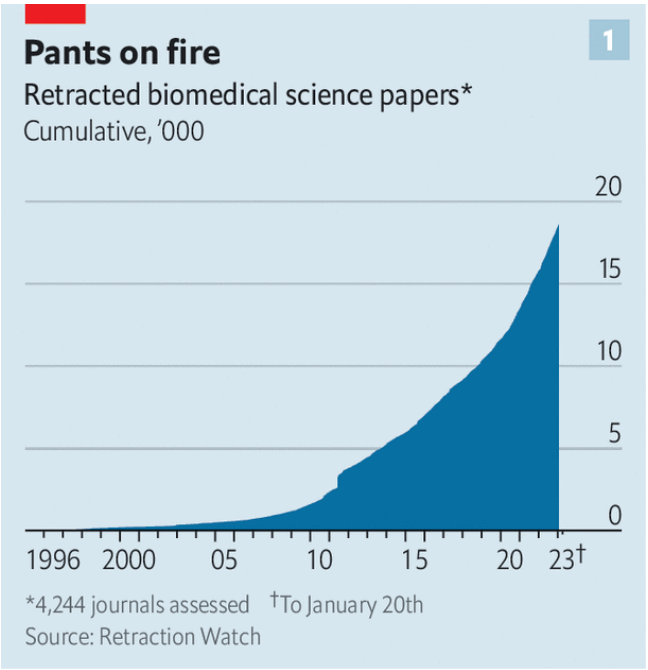
That is why the new project was started → more transparency.

Reason for fraud : “publish or perish” → researchers are under pressure and take liberties with scientific rigor.

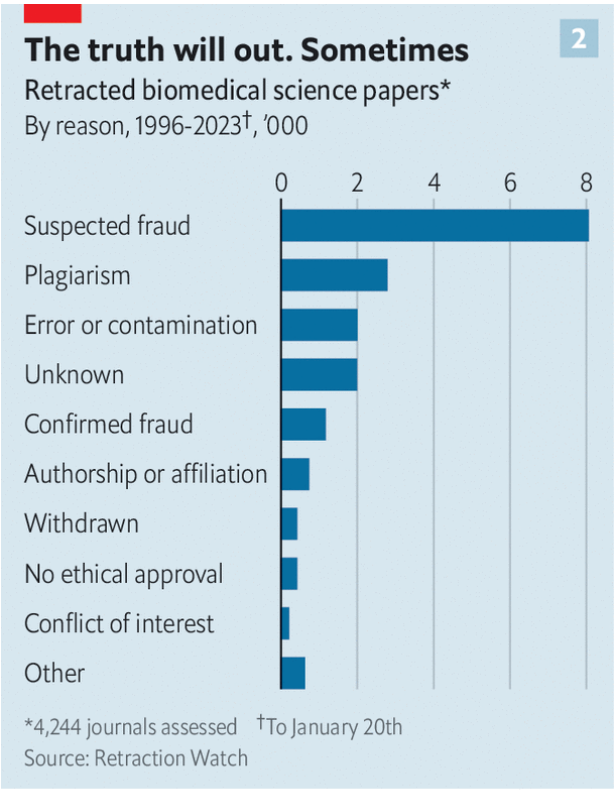
Hence the rise of **“paper mills”**

Australia : institutions / universities do not do enough to fight against fraud and misconduct → keeping quiet about problems instead of dealing with them.

Document 4:



The Economist



The Economist

The Economist Feb 22nd 2023

About biomedical research

1. Pants on fire (= liars)

Hardly any retractions from 1996 to 2000

Since 2000, the rise has been continuous.

Slight increase from 2000 to 2011

Sharp increase from 2011 to 2023

About 18,000 retractions in 4,244 journals in 28 years

2. The truth will out. Sometimes

Main reasons for retractions

1. Suspected & confirmed fraud (about 9,000 retractions)

2. Plagiarism / authorship / affiliation (about 4,000 retractions)

3. Errors = “only” 2,000 retractions

LE TITRE

Il doit refléter le thème principal commun à tous les documents, être précis et aussi concis que possible. (CCINP 2023)

Scientific Fraud 😕

The falsification of scientific studies 😐

The impact of scientific fraud 😐

The complicated fight against scientific fraud 🙂

How to deal with scientific misconduct (?) 🙂

Is science still reliable? 🙂

Fighting against scientific fraud: an uphill battle (?) 😊

L'INTRODUCTION

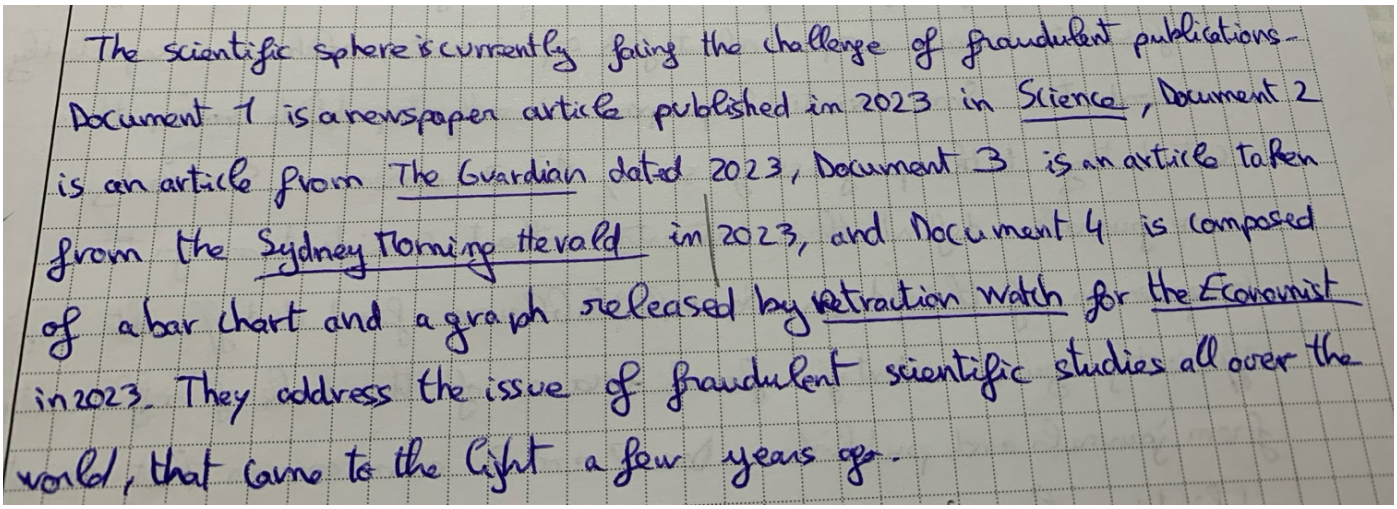
Il convient de rappeler que **l'amorce ne doit ajouter aucune information** et ne doit pas chercher à être fantaisiste.

Il est conseillé :

- de présenter brièvement le corpus de documents en indiquant obligatoirement pour chaque document au minima la source et la date accompagnés de quelques mots reflétant l'esprit de chaque document. **On pourra, par la suite, pour s'y référer, ne mentionner que le numéro du document, à condition que ce n° soit clairement explicité dans l'introduction.** Toute référence aux documents dans le corps de la synthèse, de quelque manière que ce soit (n° document, auteur, source…) doit permettre au lecteur de bien cibler le ou les documents en question ;

- d'introduire le thème, ainsi que la problématique (le ou les questionnements pouvant émerger du thème commun) et les axes de réflexion permettant de traiter ces questionnements.

PRESENTATION DES SOURCES


The scientific sphere is currently facing the challenge of fraudulent publications. Document 1 is a newspaper article published in 2023 in Science, Document 2 is an article from The Guardian dated 2023, Document 3 is an article taken from the Sydney Morning Herald in 2023, and Document 4 is composed of a bar chart and a graph released by Retraction Watch for the Economist in 2023. They address the issue of fraudulent scientific studies all over the world, that came to the light a few years ago.

+ Problématique

Hook : Invermectin was used as a treatment for Covid-19 on the basis of many unreliable scientific studies. This is explained in an article from the Sydney Morning Herald published in 2023, ...

PROBLEMATIQUE

~~to what extent is it increasing?~~

~~to what extent is there fraud in science?~~

~~Why is scientific fraud increasing?~~

→ Why is scientific fraud a cause for concern? =BETTER

As scientific fraud is increasing,

....to what extent can science still be considered reliable?

...how can science keep its role as a vehicle of truth?

How can cheating in science be fixed, if at all?

Can science still be trusted ? ✓ / Can science be made reliable again? ✓ / How trustworthy is science? ✓

In light of the significant rise in scientific misconduct, to what extent can science still be trusted?

LA CONCLUSION

La **conclusion est facultative**, mais si elle est présente, elle ne doit comporter ni opinion personnelle ni ajout d'information.

- Toujours finir par une idée, pas un fait (colle, essai, synthèse).

- La dernière phrase ne peut pas commencer « moreover » ou « also ».

*In Australia, they have created an online tool to detect fraud.

*So fraud is being fought by academics, organisations and scientists who use different methods to detect it.

*~~People should be careful~~ 🤬

Even if tentative progress is being made in detecting and punishing cheats, as long as publishing articles is linked to obtaining funding and keeping one's job, the sharp increase in falsified articles is unlikely to be reversed.

How reliable/trustworthy are scientific papers/ articles?

Can scientific research be made more reliable?

The nebulous new world of scientific research.

Scientific research and its problem with the truth.

The falsification and fabrication of scientific results are becoming alarmingly common. Such is the issue tackled by these four documents, all published in 2023. An article from *Science* (Document 1) analyses the rise in journal retractions, while a *Guardian* piece (Document 2) deals with the scope of scientific fraud. *The Sydney Morning Herald* (Document 3) focuses on how scientists can combat this problem, illustrated in two charts from *The Economist* (Document 4), showing the increasing numbers of retracted biomedical papers. In view of its multifaceted nature and various causes, to what extent can scientific fraud be curbed?

All four documents point to a dramatic increase in scientific misconduct, even within the most prestigious universities. The number of paper retractions has soared from 40 in 2000 to 5,500 in 2022 (doc 2). In biomedicine alone, there were about 20,000 retractions between 1996 and 2023 (doc 4). According to *The Sydney Morning Herald*, one in fifty articles contains manipulated data, but some claim that most articles are actually affected, and *The Guardian* states that the annual number of retractions should be closer to 100,000. While a few result from honest mistakes (doc 2 and 4), most are due to a lack of scientific rigor, inexplicable results (doc 1), falsification (doc 2), and plagiarism (doc 4). This can have unfortunate consequences, as when falsified scientific articles validated ivermectin use against Covid 19 (doc 3).

Although {_____ } the growing number of independent investigation panels may explain the continuous rise in retractions, (docs 2 and 4) the real reason is the "publish or perish" imperative, which pushes researchers to publish even when they have insufficient time and/or funds to conduct rigorous studies. Documents 2 and 3 **even** {_____ } refer to so-called "paper mills" that sell fake scientific articles to scientists in need of funding or promotion. Yet, {_____} many journals are still reluctant to withdraw erroneous articles, accepting the authors' corrections, even if they are far from satisfactory (docs 1 and 3). **Similarly {_____},** universities tend to simply turn a blind eye to the problem (doc 3).

The fight against this scientific fraud is arduous. Indeed, whistleblowers come under severe pressure: some fear being punished by their superiors, or even face being sued (doc 2). Watchdogs do exist, **though** {_____}, (docs 1 and 2), and online detection tools have been set up in the USA (doc 2) and Australia (doc 3), but more resources are needed to combat fraud effectively (doc 2). **Therefore** {_____}, even if tentative progress is being made in detecting and punishing cheats (docs 1 and 2), as long as publishing articles is linked to obtaining funding and keeping one's job (doc 2), the sharp increase in falsified articles (doc 4) is unlikely to be reversed.

LINK-WORDS

Quizlet Flashcards
Password : Although

. **ALTHOUGH** [ɔːlˈðəʊ] : bien que

→ Although he's 25, he looks as young as if he were a teenager

. **AS:** -comme (cause) → As I didn't have enough money, I didn't buy it

-comme (comparaison) → Do as you are told

-alors que → As I was studying, I heard a strange noise downstairs

-bien que → Attractive as he may be, I don't like him

. **AS THOUGH** [əzˈðəʊ]: comme si

→ She behaved as though she didn't know me

. **BECAUSE** [bɪˈkɒz]: parce que

. **BECAUSE OF / DUE TO / ON ACCOUNT OF / OWING TO** : à cause de

→ I cannot go out tonight because of my English test

. **BESIDES:** -en outre → It's too late; besides, I'm tired

-en plus de → I've got two cars besides this one

. **DESPITE** (= in spite of): malgré, en dépit de

→ despite my objection, he went out last night

. **EVEN THOUGH**: bien que (concession)

. **EVEN IF:** même si (condition)

. **FOR ONE THING ... FOR ANOTHER THING:** d'une part...d'autre part (**arguments similaires)**

. **FURTHERMORE / MOREOVER / WHAT'S MORE** = de plus, par ailleurs

. **GIVEN THAT:** étant donné que

. **HOWEVER** [haʊˈevə(r)] **/ YET / STILL:** cependant

→ He's tall, however he can't play basketball

. **IN ADDITION:** en outre, de plus

→ In addition, he will have to move out before June

. **NEVERTHELESS** (=nonetheless, plus rare): néanmoins

. **ON (THE) ONE HAND ...ON THE OTHER HAND:** d'un côté...de l'autre **(arguments contraires / opposition)**

. **OTHERWISE:** -sinon (condition négative)

-au demeurant, autrement → This car is old, but otherwise it's comfortable

. **SINCE:** -puisque → Since you're tired, why don't you go to bed?

-depuis → She's been working hard since the classes started

. **THAT'S WHY:** c'est pourquoi

. **THEREFORE** [ˈðeəfɔː(r)] / **CONSEQUENTLY:** par conséquent

. **THOUGH** [ðəʊ]: - En début de phrase : bien que → Though I may fail, I will try.

- En fin de phrase : cependant → I know we didn't win. I was happy with how we played, though.

. **THUS:** ainsi / donc

. **WHEREAS** [ˌweərˈæz] : alors que (contraste)

. **WHILE:** -tandis que

-tant que → there will be a water shortage while the drought is going on

. **YET:** -déjà → Has he arrived yet?

-encore → I haven't seen him yet

-cependant/pourtant → She explained it to me, yet I still don't understand.

MPSI – DS4 – Correction

- LINK WORDS

1) **Connect the ideas. You may change their order or not. Use the appropriate link-words when needed.**

A- One of the causes for the increase of fraud is “publish or perish”. The fact that there are more whistleblowers and investigation panels is another explanation. Journals are reluctant to publish corrections.

B- Governments have to take action. Universities also have to fight against fraud.

C- Scientific mistakes are more and more numerous. They are due to fraud. They are also due to plagiarism. There are also honest errors. Science is becoming less reliable.

2) **Fill in the blanks using : contrary to/unlike, instead of, in spite of, hence, provided, even**

_____ the increasing number of whistleblowers, scientific fraud remains a cause for concern.

Scientific journals are reluctant to publish corrections. _____ the difficulty to effectively fight against fraud.

Science can be made reliable _____ there's an actual will from the government and universities, and publishing is decoupled from funding and employment.

_____ whistleblowers, many scientists and institutions choose to look the other way.

_____ encouraging those who fight against fraud, many institutions fire them or _____ sue them.

- MISCELLANEOUS

Experience ≠ Experiment
Translate : Ils ont mené une expérience.

_____

Scientific ≠ scientist → write a sentence using these two words.

_____

Translate : Ces nombreuses recherches n'ont pas apporté beaucoup d'informations.

_____

To rise /raɪz/ ≠ To raise /reɪz/

Translate:

- Ce chiffre ne cesse d'augmenter.

_____

- Ce dossier soulève la question de la fraude scientifique.

_____

All the more + Adj + since = d'autant plus que
Translate :

C'est d'autant plus inquiétant que ces chiffres ne cessent d'augmenter

_____

C'est très inquiétant. D'autant plus que ces chiffres ne cessent d'augmenter.

_____

To MAKE a mistake = faire une erreur
To go to great lengths to … = se donner beaucoup de mal pour …
Regardless of sth = sans tenir compte de qch

→ **Write ONE sentence using these three phrases:**

_____