



Section 4. Results as an IMRD component

Unit 2. Results: Grammar peculiarities

Outline

- Sequence
- Frequency
- Quantity
- Causality

Sequence

- Exact description of the order
- Prescribed timing
- A clear chronology

A sample Results section model. Sequence

Comparing Tensile Strength between Alloy and Non-Alloy Materials: Modelled Results vs. On-Site Measurements

Results

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9 It can be observed that certain alloy compositions exhibited considerably higher levels of tensile strength during specific testing conditions. **10** Although the overall tensile strength levels of certain alloy compositions generally exceeded those modelled for non-alloys, there were instances where non-alloys outperformed certain alloy compositions, particularly under certain testing conditions.

11 A quantitative analysis to determine modelling uncertainties was applied, based on the maximum deviation of the measured and calculated tensile strength values within the considered period. **12** Using this approach, the uncertainty of the model prediction for this study slightly exceeds the 50% acceptability limit defined by Jiang.⁷ **13** Nevertheless, these results suggest that data obtained using ASM to simulate tensile strength values may provide more accurate information for assessing the performance of different alloy compositions than traditional on-site measurement methods.

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Groups of Sequencing

1. Events occur **before** starting the experiment/simulation or observing the results

Example: It was already clear **beforehand** that lowering the temperature was the desired result.

Groups of Sequencing

2. The beginning of the experiment/simulation or **the first** results to be described

Example: As expected, the temperature was stable **at the beginning**.

Groups of Sequencing

3. The order of events, but give no information about chronology

Example: The temperature rose to 49°C and **then** dropped to 30°C.

Groups of Sequencing

4. A (very) short period of time between two events

Example: The temperature rose to 49°C, but **soon** dropped to 30°C.

Groups of Sequencing

5. The time between events was long / the events occurred **near to the end** of the sequence

Example: The temperature rose to 49 °C and **later** dropped to 30 °C.

Groups of Sequencing

6. At the same time, about the same time, or during the same time period

Example: **When** the pressure was lowered, the temperature dropped sharply.

Groups of Sequencing

7. The end of the series of events

Example: There was a noticeable drop in temperature **at the end.**

Groups of Sequencing

8. After the experiment/simulation:

Example: There was a noticeable temperature drop at the end, but this was **afterwards** omitted from the input data.

Put the words into appropriate group(s)

The words of sequence

- 1. Before the beginning**
- 2. At the beginning/first step**
- 3. Steps/order**
- 4. After a short while**

- 5. At a late/late stage;
after a while/longer
period**
- 6. One point/period
occurring almost
or exactly at the same
time as another**
- 7. At the end/
last step**
- 8. After the end**

After, afterwards, as soon as, at first, at that point, at the beginning, at the end, at the same time, at the start, beforehand, before long, earlier, eventually, finally, firstly, formerly, immediately, in advance, in the beginning, in the meantime, in the end, initially, just, then, lastly, later/late on, meanwhile, next, once, originally, previously, prior to, secondly, shortly after, simultaneously, soon, straight away, subsequently, then, to begin with, to start with, towards the end, upon + -ing, when, while

Check yourself

The words of sequence

1. Before the beginning	2. At the beginning/first step	3. Steps/order	4. After a short while
Beforehand, earlier, formerly, in advance, originally, previously, prior to	At first, at the beginning, at the start, firstly, in the beginning, initially, to begin with, to start with	At first, at the beginning, at the start, firstly, in the beginning, initially, to begin with, to start with	Before long, shortly after, soon
5. At a late/late stage; after a while/longer period	6. One point/period occurring almost or exactly at the same time as another	7. At the end/ last step	8. After the end
Eventually, in time, later/late on, subsequently, towards the end	As soon as, at that point, at the same time, just, immediately, then, in the meantime, meanwhile, upon + -ing, meanwhile, when, simultaneously, while, straight away	At the end, eventually, finally, lastly	Afterwards, eventually, in the end, later/ late on

Frequency

- The number of times is important

Frequency

- The number of times is important
- A certain result = a reliable result

A sample Results section model. Frequency

Comparing Tensile Strength between Alloy and Non-Alloy Materials: Modelled Results vs. On-Site Measurements

Results

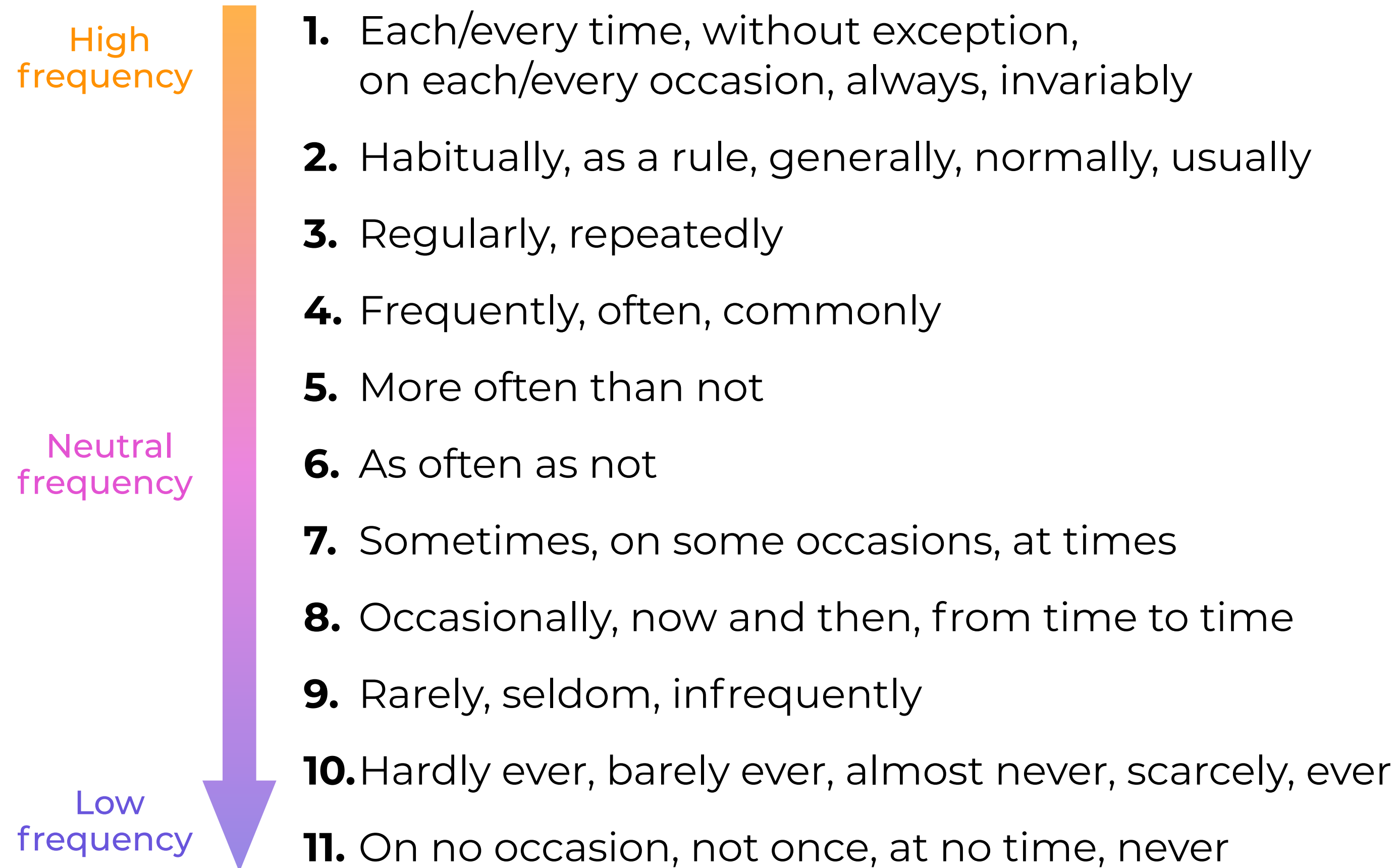
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Frequency words from 100% to 0%



Feel the Frequency

Example 1: If the alloy composition **always** includes a high percentage of nickel, you will observe it in the sample today.

Feel the Frequency

Example 2: If the alloy **generally** exhibits good tensile strength, you expect to find it in the specimen today, and you will be surprised if it is not present.

Feel the Frequency

Example 3: If the alloy **regularly** demonstrates excellent corrosion resistance, you will probably find it in the material today.

Feel the Frequency

Example 4: If the alloy **often** displays superior conductivity, there is a good chance that you may find it in the sample today.

Feel the Frequency

Example 5: If the alloy is known to have greater hardness **more often than not**, you should start by examining the material for it, but it may not be there today.

Feel the Frequency

Example 6: If the alloy demonstrates equal chances of being malleable or brittle, you may find it in the sample today—or you may not. It's impossible to predict because the chances are equal; it exhibits malleability **as often as** it does brittleness.

Feel the Frequency

Example 7: If the alloy **sometimes** shows exceptional heat resistance, perhaps you will find it in the material today (but you won't be surprised if it isn't there).

Feel the Frequency

Example 8: If the alloy **occasionally** possesses magnetic properties, it might be present in the sample today, but it's unlikely.

Feel the Frequency

Example 9: If the alloy **rarely** exhibits high corrosion resistance, it probably won't be present in the material today (so don't bother to look for it).

Feel the Frequency

Example 10: If the alloy **hardly ever** demonstrates good conductivity, do not expect to see it today.

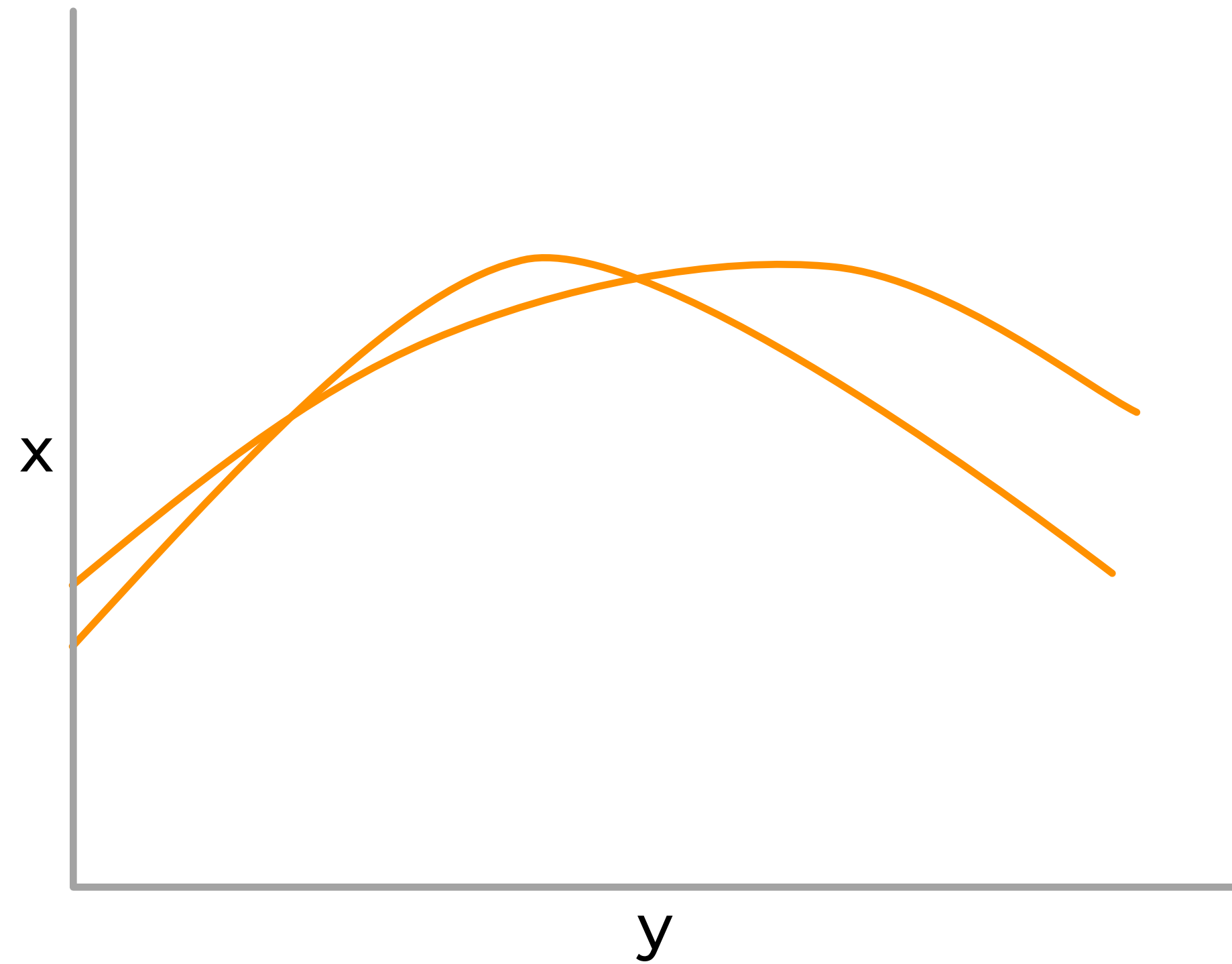
Feel the Frequency

Example 11: If the alloy **never** shows resistance to oxidation, it won't show it today.

Quantity

«Very similar» = focus on similarity

«Noticeably different» = focus on difference



A sample Results section model. Quantity

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The analysis of the example

Example: As can be seen in Fig. 1, the effect occurred in 23% of cases.

Strong result:

As can be seen in Fig. 1, the effect occurred in **as many as** 23% of cases.

The analysis of the example

Example: As can be seen in Fig. 1, the effect occurred in 23% of cases.

Weak result:

As can be seen in Fig. 1, the effect occurred in **only** 23% of cases.

Way 1. The language of Frequency

The effect was seen **frequently**.

The effect was seen **occasionally**.

Way 2. The language of Quantity

■ To replace numbers or to comment on numbers

Examples:

The effect was seen **many times** (23%).

The effect was seen in **as many as** 23% of cases.

Quantity words by groups

Group 1

To make the size/quantity **look big**

Example: A **considerable** amount of residue remained in the pipe.

Quantity words by groups

Group 2

To make the size/quantity **look small**

Example: **Barely** 23% of the residue remained in the pipe.

Quantity words by groups

Group 3

To emphasise how **big/small/high/low** the size/
quantity is

Example: The amount that remained was
even higher/even lower than predicted.

Quantity words by groups

Group 4

To show the size/quantity is **similar/close** to another

Example: **Almost all/Almost** half of the residue remained in the pipe.

Quantity words by groups

Group 5

To say about the quantity without interpretation of how big or small it was

Example: **Some** of the residue remained in the pipe.

Practice time

Group 1	Group 2	Group 3	Group 4	Group 5
look big	look small	how big/small/high/low	similar/close to	no commitment

A great deal of

A great deal (of), a few, a little, a number (of) appreciable, appreciably (higher/lower), approximately, as many as (e.g. 45), as few as (e.g. 45), at least, barely, below, by far, close (to), considerable, considerably (higher/lower), extremely (high/low), fairly (high/low), far (above/below), few, fewer (than), greater (than), hardly, infinitesimal, in some cases, just, just (over/under), less, little, marginal, marginally, (higher/lower), even (higher/lower), exceptionally (high/low), marked, markedly, moderate, more (than), most, much, nearly negligible, noticeable, noticeably, numerous, only, over (half/25%), to some extent, under, upwards of, virtually, well (under/over), particularly, plenty, practically, quite, reasonably, relatively, significant, significantly, slight, small, so (high/low), some, somewhat, substantial, substantially, easily (over/under)

Check yourself

Group 1 look big	Group 2 look small	Group 3 how big/small/high/low	Group 4 similar/close to	Group 5 no commitment
A great deal of, a number (of), as many as (45), appreciable, at least, considerable, greater (than), marked, more (than), most, numerous, over (half/25%), plenty, much, substantial, significant, upwards of	A few, little/a little, less, as few as 45, marginal, barely, negligible, below, only, few, slight, fewer (than), small, hardly, under, infinitesimal	Appreciably, by far, considerably, easily (over/under), even (higher/lower), exceptionally (high/low), extremely (high/low), far (above/below), particularly, so (high/low), substantially, well (under/over)	Approximately, close (to), few, little (i.e. close to none), nearly, practically, few (i.e. close to none), just (over/under), slightly, virtually	Fairly, reasonably, in some cases, relatively, moderate, some, quite, somewhat, rather, to some extent

Causality

- the relationships or connections between the events observed

A sample Results section model. Causality

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How is Causality stated?

What to express?	How?
1. Clear/strong causal connection	cause, produce, be due to
2. Partial cause	be a factor in, contribute to
3. Initial or first cause in a causal chain	originate in, initiate
4. A weak causal connection	be related to, link
5. Uncertainty	accompany/ be accompanied, associate/ be associated, connect/ be connected, relate/be related, link/be linked

Uncertainty

It appears that...

It seems (likely) that...

It is (widely/generally) accepted that...

It is/may/can be assumed that...

It seems (very/highly) probable/likely that...

It would seem/appear that...

Other options

- A Frequency qualifier
X **often** caused Y
- A Quantity qualifier
X caused Y **in many** cases
- **Modal Verb**
X may have caused Y

Summary

- Sequence
 - accurately describes the order and timing of events
 - 8 groups of words/phrases convey different aspects of sequence
- Frequency
 - communicates how often events occur
 - the number of times is important
 - a certain result = a reliable result

Summary

- Quantity
 - words influence the interpretation of results
 - words can make quantities seem big, small, similar
- Causality
 - the relationships or connections between the events observed
 - strong/weak causal connections
 - expressions of uncertainty