HELLENIC REPUBLIC
UNIVERSITY OF CRETE

Academic English

Section 5: Hedging

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Definition

hedge

- (hĕj)*n.***1.** A row of closely planted shrubs or low-growing trees forming a fence or boundary.
- **2.** A line of people or objects forming a barrier: a hedge of spectators along the sidewalk.
- **3. a.** A means of protection or defense, especially against financial loss: a hedge against inflation.
- **b.** A securities transaction that reduces the risk on an existing investment position.
- **4.** An intentionally noncommittal or ambiguous statement.
- **5.** A word or phrase, such as *possibly* or *I think*, that mitigates or weakens the certainty of a statement.

Why hedge in scientific writing

- to report the limits of their findings
- to protect themselves from the risk of error
- to convey modesty
- **established writing style in English**
- need to guard against using it to excess

With or Without hedging ?

The lack of *lacZ* induction in the case of chromium oxalate is possibly due to the inability of that compound to enter the bacterial cells.

The lack of *lacZ* induction in the case of chromium oxalate is due to the inability of that compound to enter the bacterial cells. (Adapted from Plaper et al., 2002)

Hedges

express **tentativeness and possibility** in communication

express a perspective on their statements

present unproven claims with caution

enter into a **dialogue with their audiences**

appropriate use in scientific discourse is **vital**

a means to confirm their **membership of research communities**

(Hyland, K.:1996)

Language used in hedging

- Modal auxiliary verbs
- Modal lexical verbs doubting and evaluating rather than merely describing
- Probability adjectives
- Nouns
- Adverbs
- Approximators of degree, quantity, frequency and time
- Introductory phrases
- “If” clauses
- Compound hedges

Modal auxiliary verbs

- *may, might, can, could, would, should*

‘Such a measure *might* be more sensitive to changes in health after specialist treatment.’

Modal lexical verbs

- *to seem*, *to appear* (epistemic verbs), *to believe*, *to assume*, *to suggest*, *to estimate*, *to tend*, *to think*, *to argue*, *to indicate*, *to propose*, *to speculate*

‘In spite of its limitations, the study *appears* to have a number of important strengths.’

Probability adjectives

- ***possible, probable, un/likely***

‘It is *likely* to result in failure.’

Nouns

- ***assumption, claim, possibility, estimate, suggestion***

‘We *estimate* that one in five marriages end in divorce.’

Adverbs

- ***perhaps, possibly, probably, practically, likely, presumably, virtually, apparently***

‘There is, *perhaps,* a good reason why she chose to write in the first person.’

Approximators of degree, quantity, frequency and time

- ***approximately, roughly, about, often, occasionally, generally, usually, somewhat, somehow, a lot of***

‘Fever is present in *about* a third of cases.’

Introductory phrases

- ***believe, to our knowledge, it is our view that, we feel that***

  ‘*We believe* that there is no simple explanation.’

“If” clauses

- ***if true, if anything***

‘*If true*, our study contradicts the myth that men make better managers than women.’

Compound hedges

- ***seems reasonable, looks probable***

- it *may suggest* that
- it *seems likely* that
- it *would indicate* that
- this *probably indicates*
- it *seems reasonable* to *assume* that
- it *would seem somewhat unlikely* that,
- it *may appear somewhat speculative* that

Notice

Read these passages and identify the authors' attempts to hedge. Look for words and phrases that reveal the authors' restraint.

1. Firm conclusions cannot be drawn because the concentrations of these compounds were not determined in the broccoli used in this experiment and because a direct comparison of high-Se garlic and high-Se broccoli was not made. (Adapted from Finley et al., 2001)
2. The immediate goal of fully characterizing the parent Hg^{2+}-responsive fluorescent chemosensor . . . is expected to be complete within 6 months. . . . The synthesis and complete characterization of the proposed fluorophores are anticipated to take 6 months. (Adapted from Finney, 1999)
3. In particular, we intend to systematically and quantitatively determine the origins of interfacial polarity at solid-liquid interfaces as well as identify how surface induced polar ordering affects dynamic properties of interfacial environments. (From Walker, 2001)

Answers

From Robinson M.S et al. (2008) Write like a chemist, Oxford University Press (page 593)

1. Firm conclusions cannot be drawn
2. Is expected to be complete
3. We intend to

Poving the truth

- A big problem in science and social research is the question of proving whether a statement is true or not, where truth is defined as *common agreement* about the validity of the statement. We all have our individual truths, but only when target people agrees a truth does it have any external value.

http://changingminds.org/explanations/research/articles/proving_truth.htm

“prove” & “truth”

Words such as *truth* and *prove* seldom appear in scientific writing. In a computer-based analysis of 180 journal articles, *prove* was found only twice, and *truth* never occurred.

Hedging words are used instead. For example, data *suggest* (not prove), results offer *evidence* (not proof), and *findings* (not truths) are reported.

Robinson M.S et al. (2008) Write like a chemist, Oxford University Press.

Practice

From: Robinson M.S et al. (2008) Write like a chemist, Oxford University Press.

Effects of WO on Anaerobic Biodegradability of Raw Waste. Figure 1 shows the effect of the composition of a waste stream (Figure 1A) as well as the effect of the applied wet oxidation conditions (Figure 1B) on the anaerobic biodegradability of raw and digested waste after assessing wet oxidation. Although a doubling of the methane yield was achieved for wet oxidation yard waste compared to the reference, a minor increase (7%) in methane yield was observed when raw food waste was subjected to wet oxidation. **This was due to** inherent differences in lignocellulose composition and characteristics of the lignin fraction of both wastes. Although it was previously shown that both wastes have a similar lignin content (21–22 g/100 g) and also rather similar cellulose and hemicellulose content (Table 2) (*18*, *19*), the amount of readily biodegradable and soluble organics in the food waste **must be** much higher than that in the woody yard waste. Hence, the wet oxidation pre-treatment **leads to** a substantial beneficial effect on the biodegradability of the fibrous yard waste, although this **was not** the case for food waste. (adapted from Lissens et al., 2004)

Key

This was due to /**These observations can be explained by** inherent differences in lignocellulose composition and characteristics of the lignin fraction of both wastes. Although it was previously shown that both wastes have a similar lignin content (21–22 g/100 g) and also rather similar cellulose and hemicellulose content (Table 2) (*18*, *19*), **it can be assumed that** the amount of readily biodegradable and soluble organics in the food waste **must be** much higher than that in the woody yard waste. Hence, the wet oxidation pre-treatment **could leads to** a substantial beneficial effect on the biodegradability of the fibrous yard waste, although this **was not /might not be** the case for food waste. (adapted from Lissens et al., 2004)

References

- Study skills Support University of www.bbk.ac.uk/studyskills
- Hyland, K. (1996). Talking to the academy: Forms of hedging in science research articles Written Communication 13 (2): 251-281
- Robinson M.S et al. (2008) Write like a Chemist, Oxford University Press.

End of Section

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