HELLENIC REPUBLIC

UNIVERSITY OF CRETE

Academic English

Section: Paraphrasing handout

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Wk 4 Paraphrasing handout

Objectives:

- Paraphrasing short texts within subject-specific area

RUBRIC

PARAPHRASING	-5	5+	7+	9+
Main Idea	Notes indicate little understanding of text.	Notes indicate fair understanding of text.	Notes indicate good understanding of text.	Notes indicate full understanding of text.
Passage: strategies and cohesion	Shows little evidence of use of paraphrasing strategies OR poor paraphrasing attempt	Shows use of few paraphrasing strategies OR fair paraphrasing	Shows use of some good paraphrasing strategies AND paraphrased well BUT lacks flow	Shows use of effective paraphrasing strategies AND appropriately paraphrased AND flows well
Composition: Grammar, spelling and punctuation	4 or more errors in spelling, grammar, punctuation, or capitalization	Less than 4 errors in spelling, grammar, punctuation, or capitalization	Less than 3 errors in spelling, grammar, punctuation, or capitalization	No errors in spelling, grammar, punctuation, or capitalization

Strategies to remember:

You may wish to change the	VOICE (active, passive) WORD(information) ORDER VERBS to NOUNS (or vice verse)
You may wish to use	SYNONYMS/ANTONYMS PARALLEL THEMES LINKING WORDS/ TRANSITIONS

From: Mira Petrovic et al., 2003**, Analysis and removal of emerging contaminants in wastewater and drinking water,** Trends in Analytical Chemistry, Vol. 22, No. 10.")

Many believe that, of all emerging contaminants, antibiotics are of greatest concern, since their emission in the environment can increase the occurrence of resistant bacteria in the environment [1]. However, other emerging compounds, especially polar ones, such as acidic pharmaceuticals, acidic pesticides and acidic metabolites of non-ionic surfactants, also deserve particular attention. Because of their physico-chemical properties (high water solubility and often poor degradability), they are able to penetrate through all natural filtration steps and man-made treatments, thus presenting a potential risk in drinking water supply [2,3].

Different classes of emerging contaminants, mainly surfactant degradates, pharmaceuticals and personal care products (PPCPs) and polar pesticides were found to have rather low elimination rates and have been detected in WWTP eluents and in the receiving surface waters. However, for most emerging contaminants, occurrence, risk assessment and eco-toxicological data are not available, and it is difficult to predict their fate in the aquatic environment. Partly, the reason for this is a lack of analytical methods for their determination at trace concentrations. Analysis of emerging contaminants is a real analytical challenge, not only because of the diversity of chemical properties of these compounds, but also because of generally low concentrations (usually at part per billion (ppb) or part per trillion (ppt) levels) and the complexity of matrices.

Let's compare four students' paraphrasing attempts.

Student a: Antibiotics are concerned to be the most dangerous emerging contaminants, because they can create bacteria that can't be affected by their properties, when released to the environment. Also, some polar emerging compounds, for example acidic pharmaceuticals, acidic pesticides and acidic metabolites of non-ionic surfactants, haven't received so much attention. They can avoid every filtration method either natural or human, due to their physico-chemical properties (high water solubility and often poor degradability). As a result, they can end up in water, putting at risk everyone that drinks it. It is known that some emerging contaminants, mainly surfactant degradates, pharmaceuticals, personal care products (PPCPs) and polar pesticides, have low elimination and WWTP eluents and receiving surface waters have been polluted by them. Despite our knowledge for these compounds, there is a lack of occurrence, risk assessment and eco-toxicological data for the most emerging contaminants, so their route to the aquatic environment is unknown. The reason why their fate can't be predicted is that we don't have access to a diversity of analytical methods, so as to determinate them at trace concentrations. The diversity of chemical properties of emerging contaminants, their generally low concentrations (usually at part per billion (ppb) or part per trillion (ppt) levels) and the complexity of matrices make the analysis of these compounds really difficult and demanding.

Student b: As far as emerging contaminants are concerned ,antibiotics are deemed to be a matter of utmost concern. One should bear in mind that their levels of emission are quite high and can result in an outgrowth of resistant bacteria populations in the environment. Although, quite hazardous may also be other emerging compounds specifically polar ones like acidic metabolites of non-ionic surfactants which can't be separated by any filtration technique or human-made treatment due to their physico-chemical properties (for example they are highly soluble in water and have poor degradability levels) and their being quite frequently detected in drinking water supply,too. Extremelly low rates of elimination can be a distinctive characteristic of various categories of emerging contaminants mostly surfactant degradates, pharmaceuticals , personal care products and polar pesticides.However, for the majority of them, information about their existence in the aquatic environment is unavailable and not very easy to predict. This is partially because of the lack of analytical methods being able to trace them in hard-to-detect concentrations.

Student c: According to the book "Analysis and removal of emerging contaminants in wastewater and drinking water" ,it is believed that, antibiotics are the most significant out of all emerging contaminants ,as their emission in the environment can maximize the appearance of resistant bacteria 1. Attention should also be given to some other emerging compounds and particularly polar ones, namely acidic pharmaceuticals, acidic pesticides and acidic metabolites of non-ionic surfactants. They are penetrable through all natural filtration steps and artificial processing , due to their physicochemical properties ,for instance elevated water solubility and low degradability, and consequently running the risk of being presented in drinking water supply23. Various types of emerging contaminants ,such as surfactant degradates , pharmaceuticals and personal care products (PPCPs) and polar pesticides were spotted to have quite low elimination rates and have been exposed in WWTP eluents and in the receiving surface waters. Still, for most emerging contaminants, occurrence, risk assessment and eco-toxicological data are unavailable, and it is hard to foresee their fate in the aquatic environment. The main cause for this ,is the shortness of analytical techniques for their determination at trace concentrations. Due to the variety of chemical properties of these compounds and the practically trifling concentrations ,that is ,ppb (parts per billion) or ppt (parts per trillion),and the complexity of matrices the analysis of emerging contaminants seems to be a challenging. (Original is taken from Mira Petrović*, Susana Gonzalez, Damià Barceló).

Student d: In this text, Mira Petrovic presents the danger in water potability resulting from the emissions of emerging contaminants in the environment. At first point, antibiotics are mentioned as the most hazardous, due to the fact that they can render bacteria more resistant. Moreover, acidic chemicals such as medicines and pesticides may cause hazards in drinking water as they are easily soluble and they hardly degrade, which can lead to failure in removing them through percolation. Then some emerging contaminants that re eliminated in small percentages are pointed out. In this category are included surfactant degradates, cosmetics and polar pesticides. Unfortunately, information on the frequency and the places that emerging contaminants appear, the danger that they cause and eco-technological data are not provided. As a result, it is difficult to forecast their effects at the wetlands. But if we search deeper, we will find out that this is stemming from the insufficient analysis on these compounds, as they occur in small concentrations and they have a variety of chemical properties.

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[1] C.G. Daughton A.T. Ternes; Environ. Health Perspect 107 (1999) 907.
[2] T. P. Knepper, F. Sacher, F.T. Lange, H.J. Brauch, F. Karrenbrock, O. Roeden, K Linder, WasteManag. 19 (1999) 77.
[3] I. Janssens, T. Tanghe, W. Verstraete, Wat. Sci. Technol. 35 (1997) 12.

Notes

Reference Note

Licensing Note

Preservation Notices

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