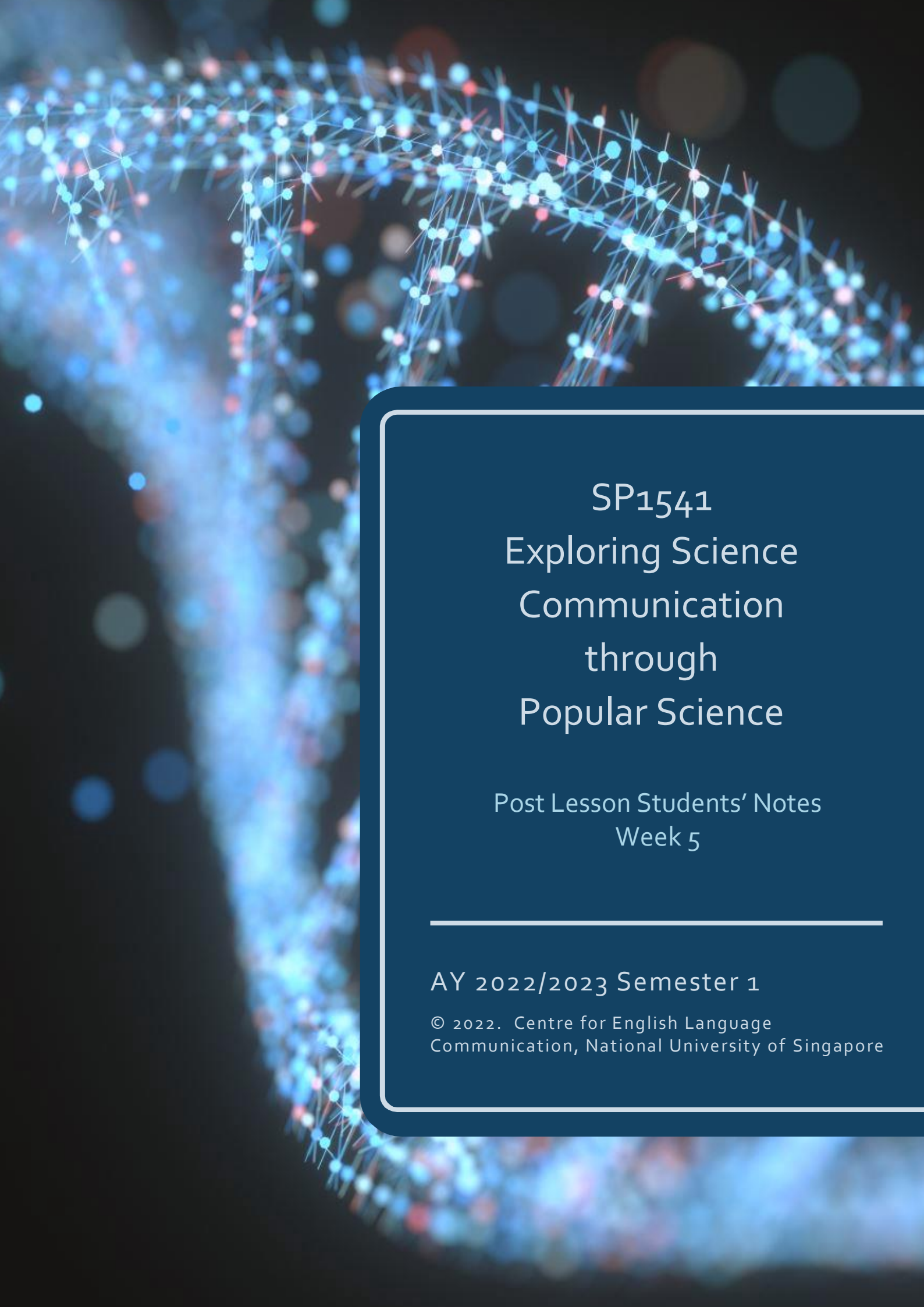

SP1541
Exploring Science Communication through Popular Science

Post Lesson Students' Notes
Week 5

AY 2022/2023 Semester 1

Tutorial 1: Learning Outcomes

By the end of Tutorial 1, you should be able to:

- analyse and describe **Moves 6-8** that are conventional to introducing a news article;
- analyse and apply the use of **explanatory strategies** (exemplification and functional recontextualisation) to explain scientific concepts and ideas for non-specialist readers;
- analyse and apply the use of **cohesive devices** to present ideas coherently and logically;
- analyse and apply the writer's use of **evaluative language** and appeals for promoting the news article; and
- apply your learning to revise and improve your pre-course news article.

I. Moves in science news articles

Move 6: State the methods & findings

Move 6 in a science news article describes the **method or procedures which lead to the findings and the findings obtained through the procedures.**

Section 3 and 4 state the method and the finding. The author only includes the part of the experiment that is relevant to the key finding (introduced in Move 1). The news author does not explain all 4 possible scenarios of the Go/No-Go experiment and what it means for each scenario. Instead, he explains only 1 scenario (*pressing the lever when signalled to leave it alone was seen as a sign of impulsiveness*) and states what was found.

The description of the methods is necessary for this news article. Stating the finding alone without describing how it was obtained can make the result questionable. The readers may not find the result credible or believable. By briefly describing the method, it allows the readers to judge for themselves whether the conclusion drawn from the experiment is valid. This information helps enhance the reliability of the news article.

Move 7: Explain the result

The author tries to describe the findings regarding potential reasons 'why' rats behave impulsively when they are given the hormone ghrelin. The author **explains this study** by describing that this hormone has an impact on a particular part of the brain which controls the reward system. This information can be found in the 'Discussion' section of the research article.

Move 8: Evaluate the result

In Section 8, the author predicts a potential reaction from the readers. As it is a common topic, he assumes that the readers may not find that there is anything new in the study. Thus the author puts extra effort in addressing potential resistance and highlights the new insight gained from the study and how the readers may benefit from it.

What's important to note is that the **news author's evaluation of the study/findings should be supported by evidence or logical explanation** in order to help readers appreciate the significance of the study. By highlighting the positive evaluation of the study without a justification of such evaluation, the appraisal may seem 'forced'; thus, having the opposite effects on readers.

In Sections 9 – 11, another study is also introduced. The author probably predicts that some readers may have heard of the 2014 paper and may think that this study contradicts the result of that study. Perhaps he also includes it to help him introduce the limitation of the study (section 10). A good science writer should be mindful of the limitation of the study and make it known to the readers. In this case, the point of including the limitations (the study was conducted on rats, not human) is to warn readers not to start blaming their hunger hormone for all the rash decisions they make. While it is important to show that there are such limitations, news authors also need to emphasise that despite the limitations, the study is still valid. In this study, the author does it in section 11 where a logical explanation is used to resolve the contradicting findings.

In the previously studied news articles, we have also witnessed the evaluation of the results by the news author. In the CRISPR article, a quote from the lead researcher is used while in the Cicada article, a quote from a mathematician who is not involved in the study is used to evaluate how believable the results are and whether the applications are practical.

II. Explanatory strategies

Exemplification

The author exemplifies the concept "*impulsiveness*" by providing a specific example "*(like eating a chocolate when dinner is almost ready)*". This example makes this concept clearer to the readers.

Functional recontextualisation

Functional recontextualisation strategy is used to explain dopamine-related genes and enzymes. It is quite effective in explaining the result and emphasising how the hungry hormone, i.e. ghrelin, affects the brain. Instead of going into detail of what genes or enzymes are, the author chose to focus on what they do (*controlling the reward and pleasure centres of the brain*). This concept was introduced in Week 2 Tutorial 2 as the strategy that Dawkins used to describe genes.

III. Evaluative language and appeals

In the news article discussed, various techniques are used to appeal and engage readers.

Evaluative language

Section 1: *... and now there's **new evidence** to back up that feeling* (Importance)

Section 2: *Now, for the **first** time* ... (Importance)

Teleological appeal

Section 7: *Further study into the effects of ghrelin could potentially lead to better treatments for these disorders, the researchers suggest.*

The author consistently shows that he is aware of the readers' presence through various means:

- the use of **pronouns-** we, you- to address the readers;

- the use of **non-academic cohesive devices**: *in that case, so, now, in the same way* instead of *thus, therefore,* and *similarly;* and

- the use of **less formal language** when presenting his own voice/ideas.

    - Section 8: *So we're probably telling you something you already know, but seriously, don't try to make decisions on an empty stomach, because it's probably not good for you.*
    - Section 8: *(aka 'hangry')*

Tutorial 2: Learning Outcomes

By the end of Tutorial 2, you should be able to:

- review and evaluate the explanation of the '**Context of the study'** in helping readers understand why this particular study is needed or what has led the researchers to conduct the study;
- review and evaluate the explanation of '**The reported study'** in supporting the key finding introduced in Move 1;
- review and evaluate the '**Significance of the key finding'** through the author's appraisal, evaluation and implication of the study;
- review and evaluate the '**Reader engagement'** through the author's writing style, appeals and language features; and
- apply your learning to revise your Pre-course News Article.

I. The context of the study

The **context of the study** helps readers understand why this study is needed or what has led the researchers to conduct the study. This context includes, but **it is not limited to Move 3 (the background of the study) and Move 4 (the rationale leading to the objective(s) of the study).**

In the Statistics article, the author explained the context of the study very well. The explanations of Cholera and how it spreads which leads to the difficulty in collecting

'ground' data in Sections 3-5 greatly helps the reader understand why there is a need to conduct this study.

The author also shows a logical link between the problem (*communities do not realise an epidemic is underway until infected individuals swarm hospitals*) and the proposed solution (*advanced warning for impending epidemics could help health workers prepare for the onslaught*) in Section 2. These ideas help readers understand the objective of the study (*use of satellites to develop a prediction model of cholera*).

II. The reported study

The **reported study** refers to information pertaining to the study that supports the key finding or the main claim introduced in Move 1. The reported study includes, but **it is not limited to Move 6 (the methods and the results obtained through the methods) and Move 7 (the explanation of the results).**

Even though the author explained the context of the Satellite study well, the explanation of the key concept is missing. In a study about the use of Satellite data to create a prediction model, the author needs to make a clear connection on how this type of data can lead to a powerful prediction model. However, the author did not explain how "*satellites data on temperatures, water storage, precipitation and land around the country*" can help scientists predict a cholera outbreak in this article.

Specialist readers may be able to make a connection between the method and results (Move 6) and the background information of cholera- *a waterborne disease* (Move 3) to explain the relationship between satellite data and the outbreak, but non-specialist readers who lack background knowledge will need more information to understand how statistics play a role in this new innovation (Move 7).

In terms of logical links, there were some links that were not explicit resulting in readers having to stop once or twice to establish links between ideas. For example, in section 8 the author wrote "… because they had built the algorithms—and calibrated and validated them—on data from the Bengal Delta in southern Asia as well as parts of Africa.". However, he did not explain how a model which is developed from the data in one region be applied to another region? The author introduces Yemen which is a country in the Middle East (Move 1). If the author wanted to demonstrate that the new model is very 'powerful' with its predictions, this point should be made more explicit to readers.

III. Significance of the key finding

The author highlighted the significance of the key finding very well.

Her appraisal of the significance of the key finding (the model) is specific to this particular model and appropriate, i.e. **not over-sensational.** In Section 10, she wrote, **"**With a fast-moving disease like cholera, advanced warnings matter, especially in remote places. They offer a **major advantage** …". The author did not just use the word 'major' to elevate the significance of the news, but the reason why this model is considered a major advantage is also explained. This is because Cholera is a fast-moving disease, and it is deadly (… *infects millions of people each year, leading to thousands of deaths*-Section 2). This also leads to the specific implication of the model. By having an advanced warning, healthcare providers can be more prepared, which can save more lives and reduce the spread. Finally, the author's evaluation of the finding supported by an expert's voice regarding the validity of the model also helps readers appreciate the significance of the finding (Section 9).

IV. Reader engagement

The writing style is mostly appropriate to the popular science news genre with only a few parts employing an academic style of writing. For example, to explain how cholera spreads, the author wrote "Cholera can spread two ways: endemically or epidemically". Nonetheless, she successfully employs teleological appeal to entice the readers to read the article (Section 1: Scientists are also using data satellites to solve a worldwide problem: predicting cholera outbreaks.; Section 2 explains why Cholera is such a big problem in case readers are not aware of it).

Regarding immediacy with readers, the author generally shows dialogic involvement and immediacy with readers. However, the range of language features is limited. The author could afford to employ a wider range of language features to be more engaging. For example, she could use some questions to provoke thoughts or include an unexpected aspect of this key finding.

Images from Microsoft Word