Unit 5 Results & Discussion

Part II Discussion

1 Elements of the Discussion and Conclusion section

1) Restate your objective/purpose of the study, reminding the readers of your research questions or hypotheses. 2) Summarize the major findings, telling the reader whether they have successfully answered the research questions or whether it has confirmed or rejected the hypotheses. 3) Compare your findings with those of the previous studies of the same topic, telling whether they are consistent or inconsistent. 4) Provide possible explanations for/speculations about your findings as to why your results are the way they are (e.g., why they are unexpected or unsurprising). 5) Discuss the theoretical or practical implications of your findings. For example, in which way do your findings make contribution to the related field? 6) Point out limitations of the study that restrict the extent to which the findings can be generalized. 7) Recommend for future research and practical applications (e.g., what suggestions are pertaining to the problems and what direction should further research on this topic take?)

Notes:

1. Most scientific papers do not have a separate Conclusion section. The elements of a conclusion might be incorporated into the Discussion section. However, some research articles have a Conclusion section to address the following elements: 1) summarizing the findings; 2) mentioning the strong points and the limitations of the study (e.g., suggesting that the results obtained may not be generalizable to other contexts); 3) claiming the contribution or stating the implications or applications, and 4) suggesting further research.
2. Some points might be kept in mind: 1) avoid simple repetition of the information already presented in the Discussion section; 2) avoid speculating too much or providing suggestions which are not based on the data/evidence in the article; 3) avoid alluding to work that has not been completed; and 4) avoid stating too many limitations and problems of your study.

Moves of the Discussion and Conclusion section

Move 1	Points to consolidate the research space (obligatory)
	Step 1: A reference to the purpose or hypothesis of the study
	Step 2: A review of the most important findings
	Step 3: Explanations for or speculations about the findings
Move 2	Points to indicate the limitations of your study (optional but common)
Move 3	Implications of the study (optional)
Move 4	Recommendations for further research and practical applications (optional and only common in some areas)

Exercise 1

Directions: Identify the functions of each paragraph in the following Discussion section.

The effects of food deprivation on concentration and perseverance

[1] The purpose of this study was to test how different levels of food deprivation affect concentration on and perseverance with difficult tasks.We predicted that the longer people had been deprived of food, the lower they would score on the concentration task, and the less time they would spend on the perseverance task. In this study, those deprived of food did give up more quickly on the puzzle, but only in the 12-hour group. Thus, the hypothesis was partially supported for the perseverance task. However, concentration was found to be unaffected by food deprivation, and thus the hypothesis was not supported for that task.

[2] The findings of this study are consistent with those of Green et al. (1995), where short-term food deprivation did not affect some aspects of cognition, including attentional focus. Taken together, these findings suggest that concentration is not significantly impaired by short-term food deprivation. The findings on perseverance, however, are not as easily explained. We surmise that the participants in the 12-hour group gave up more quickly on the perseverance task because of their hunger produced by the food deprivation. But why, then, did those in the 24-hour group fail to yield the same effect? We postulate that this result can be explained by the concept of "learned industriousness," wherein participants who perform one difficult task do better on a subsequent task than the participants who never took the initial task (Eisenberger & Leonard, 1980; Hickman, Stromme, & Lippman, 1998). Because participants had successfully completed 24 hours of fasting already, their tendency to persevere had already been increased, if only temporarily. Another possible explanation is that the motivational state of a participant may be a significant determinant of behavior under testing (Saugstad, 1967). This idea may also explain the short perseverance times in the 12-hour group: because these participants took the tests at 10 p.m., a prime time of the night for conducting business and socializing on a college campus, they may have been less motivated to take the time to work on the puzzle.

[3] Research on food deprivation and cognition could continue in several directions. First, other aspects of cognition may be affected by short-term food deprivation, such as reading comprehension or motivation. With respect to this latter topic, some students in this study reported decreased motivation to complete the tasks because of a desire to eat immediately after the testing. In addition, the time of day when the respective groups took the tests may have influenced the results: those in the 24-hour group took the tests in the morning and may have been fresher and more relaxed than those in the 12-hour group, who took the tests at night. Perhaps, then, the motivation level of food-deprived participants could be effectively tested. Second, longer-term food deprivation periods, such as those experienced by people fasting for religious reasons, could be explored. It is possible that cognitive function fluctuates over the duration of deprivation. Studies could ask how long a person can remain focused despite a lack of nutrition. Third, and perhaps most fascinating, studies could explore how food deprivation affects learned industriousness. As stated above, one possible

explanation for the better perseverance times in the 24-hour group could be that they spontaneously improved their perseverance faculties by simply forcing themselves not to eat for 24 hours. Therefore, research could study how food deprivation affects the acquisition of perseverance.

[4] In conclusion, the results of this study provide some fascinating insights into the cognitive and physiological effects of skipping meals. Contrary to what we predicted, a person may indeed be very capable of concentrating after not eating for many hours. On the other hand, if one is taking a long test or working long hours at a tedious task that requires perseverance, one may be hindered by not eating for a short time, as shown by the 12-hour group's performance on the perseverance task. Many people—students, working mothers, and those interested in fasting, to mention a few—have to deal with short-term food deprivation, intentional or unintentional. This research and other research to follow will contribute to knowledge of the disadvantages—and possible advantages—of skipping meals. The mixed results of this study suggest that we have much more to learn about short-term food deprivation.

2 Beginning of the Discussion section

The Discussion section could begin by reviewing the research purposes, the hypotheses or predictions, the methods, referring to papers cited in literature review, or restating the most important points from the Results section. The author may begin with any of the elements mentioned above, or perhaps use them all in combination. Next, the author may present to the reader a very brief statement of what can be concluded from the findings. In fact, the Discussion section can also begin with interpreting your findings and comparing them to what is already known in literature. In other words, since Move 1 (Background information) may be optional, our Discussion section can begin with Move 2 (Summarizing and reporting key results) or even the implications of the findings.

Exercise 2

Directions: Read the following beginnings from different papers, and discuss the ways to begin the Discussion section with your partner.

1) The present study focused on how second language writers enact, construct, and invent themselves through writing. The findings of the study revealed that identity in academic writing transpires through social interaction in the academy.

2) As in previous research, greater environmental concern was related to higher levels of the Big Five personality traits of Agreeableness and Openness (Hirsh, 2007). These relationships appear to be relatively robust, given that they were replicated using different measures, obtained from an adult rather than student population. Additionally, these effects were observed despite the removal of error variance through structural equation modeling.

3) Our study pointed out a large diversity of bird species and guild responses to edges, even among species or guilds with the same general habitat requirements. We actually found different types of species responses along the habitat gradient at both sides of forest edges. Forest edges appeared as important habitats in terms of conservation

value, as a consequence of higher total abundance and species richness in bird assemblages using this habitat as well as higher occurrence of sensitive species exhibiting particular traits.

4) In the present study, we found that light availability at the rosette stage of the first year in the obligate biennial plant *P. torta* had significant effects on most reproductive traits and on plant size at maturity in the second year.

5) Our results explain the spatial variation in buffalo population recovery across the protected area and elaborate on the work of Hilborn et al. (2006), which confined itself to the time trends of the whole buffalo population. Buffalo population changes are best explained largely by hunting but model fit was improved with the addition of predation mortality.

6) In this paper, the AFLP fingerprinting method was applied to poplar rust. It is known that AFLP has a certain error margin with regard to its reproducibility.

3 Hedging devices

Hedging, also called cautious language, tentative language or vague language, is a way of softening the language by making the claims or conclusions less absolute.

Example

With hedges	Without hedges
Although duration of smoking is also important when considering risk, it is highly correlated with age, which itself is a risk factor, so separating their effects can be difficult; however, large studies tend to show a relation between duration and risk. Because light smoking seems to have dramatic effects on cardiovascular disease, shorter duration might also be associated with a higher than expected risk.	Although duration of smoking is also important when considering risk, it is undoubtedly correlated with age, which itself is a risk factor, so separating their effects is just impossible; however, there is a strong evidence of a relation between duration and risk. Because light smoking definitely has dramatic effects on cardiovascular disease, shorter duration is certainly associated with a higher than expected risk.

Different types of hedging devices

Devices	**Example**
introductory verbs	tend to; assume; indicate; imply; estimate; seem to
adverbs	probably; possibly; seemingly; apparently; arguably
adjectives	likely; probable; possible; uncertain; unsure
modal verbs	may; might; would; can; could
nouns	probability; likelihood; possibility; potentiality
other phrases	in general; approximately; roughly; in our opinion
reference to model/theory	If (this theory) is true, then…; If we…

Exercise 3

Directions: Fill in the blanks with appropriate hedging devices to soften the claims.

1) The results _____ that life-style modification alone can significantly reduce blood pressure.

2) Dr. Shotton believes that video games speed up one's neutral pathways, and as decisions and judgments speed up, playing video games _____ lead to a higher IQ.
3) Cigarette smoking _____ increase risk of a wide range of cancers, and early onset of smoking is _____ related to risk of lung cancer and colon cancer.
4) Mothers caring for their children on their own _____ to find outside employment, and the strain of the dual role may result in a chaotic lifestyle.
5) Lack of good, affordable pre-school and out-of-school childcare, and responsibility for the care of elderly relatives means that part-time work often _____ the only practical option.
6) It is _____ to assume that the daughters, particularly the elder ones, of such families will have been brought up to share in household chores.

4 Tenses in the Discussion section

1) Facts are usually presented in the past tense, as most of the facts are related to things that happened in the past.
2) Claims, or explanations for findings, or limitations of the findings, can be presented in the past or present tense.
3) Modal auxiliaries are also used to indicate the speculative nature of the statements.
4) Present tense is generally used in comparison between your findings with those other researchers, thus establishing the link with the existing body of research.
5) Simple present tense and modal auxiliaries are frequently adopted when you move from the specific points of your study to broader and more general implications or significance of the research area as a whole.

Exercise 4

Directions: Read the following sentences carefully and then find out the specific conditions in which each tense should be used.
1) There <u>are</u> some particular strengths of the case study practice that can be mentioned.
2) Moreover, for the previously inexperienced local government and community regarding participatory planning approaches, it <u>is</u> important to build the action research over "capacity building."
3) However, some barriers <u>were</u> observed for the effectiveness of the collaborative local action such as insufficient financial resources at local level, lacking legislation support, and problems in timing management.
4) The development of the alternative tourism market <u>has</u> significantly <u>increased</u> in recent times, in particular regarding the volunteer and backpacker markets.
5) Human populations <u>have increased</u> considerably in the past 30 years and buffalo numbers in the north and the far west <u>reflect</u> these changes in human populations along the boundaries.
6) The US Forest Service and Southern Group of State Foresters <u>developed</u> a "Changing Roles" program designed to assist agency foresters who acquire a skill set effective in the WUIF.