COM 32
Writing in English

Week 9 Notes

June 1, 2010

Phil Hubbard

Outline

- Review from last class
- Review of Williams
- Quiz on revising
- Discourse functions
- Course review
- Final questions

Review from Last Class

- Comments on Assignment 4
- Spot the errors
- Review of introductions
- Notes on conclusions
- Williams 8 homework
- Williams 10 & 11 intro

Williams Review

- Style and correctness
- Clarity
  - verbal over nominal style
  - main character as subject
  - control of passives
- Cohesion: flow of one idea to the next; given/new structure
- Coherence: logical development of the text; sequence of topics

Williams Review

- Emphasis: placing important information last
- Concision: eliminating unnecessary elements; controlling negation
- Controlling long sentences—dealing with interruptions; modifiers
- Motivating coherence and maintaining global coherence

Williams - Quiz

- Look for mistakes in grammar, word choice or punctuation (spot the errors)
- Diagnose the stylistic problems and try to improve the sentence, following Williams' principles
- You have 20 minutes—you may refer to your book if you wish for inspiration.

Discourse Functions

- Background: Discourse functions are the *meanings* presented at the discourse level (rather than individual words), especially those that connect or comment on ideas/information presented or provide transitions between them.
- Presentation of examples taken from a single science thesis
- Handout of examples

Discourse Functions

- Expressing necessity or advisability
  - *For enforcement **it is important** to analyse field samples immediately*.
  - *Two requirements **should** be satisfied in formulating a successful vitrification solution (Fahy et al., 1984; Rall, 1987):*
- Expressing comparison
  - *This indicates that **both** types of chilling injury are related to the yolk and they may have a **similar** injury mechanism*.
  - *However, the results showed that the dechorionated embryos at prim-6 stage appeared to be **more sensitive** to 10 M methanol at 0℃ **compared with** intact embryos.*

Discourse Functions

- Expressing contrast
  - *Steponkus et al. (1990) reported the first successful case of cryopreservation of Drosophila embryos by using copper grids and N_2 slush in vitrification, **although** no embryos survived using polypropylene straws as specimen containers in the same procedure.*
- Expressing emphasis
  - ***Even the simplest** enzyme-catalysed reactions involve several coupled steps, each of which is likely to have a different activation energy.*

Discourse Functions

- Attributing (citing)
  - *Recently, **Kimmel et al. (1995) described** the series of stages in development…*
  - *The essential features of cold shock **have been outlined** as follows **(Morris, 1987):***
  - ***It is generally agreed** that it is the thermotropic behavior of membrane lipids which is the factor determining cold shock injury **(Morris, 1987).***
  - ***The above results demonstrate** that zebrafish embryos…*

Discourse Functions

- Hedging
  - *one **possible** explanation **suggested** for the effect of anoxia **could be** that oxygen deprivation **is expected to** bring about the cessation of oxidative phosphorylation, which…* [original]
  - *… one explanation for the effect of anoxia **is** that oxygen deprivation **will** bring about the cessation of oxidative phosphorylation, which…* [revision without hedging]
- Defining
  - *Morphologically intact embryos **were defined as** those that possessed an intact membrane, and normal yolk and embryo structure.*
  - *Recently, Toner et al. (1990, 1993) have proposed that IIF is catalysed heterogeneously by the plasma membrane in the presence of external ice, a mechanism **referred to as** surface-catalysed nucleation*.

Discourse Functions

- Expressing conditions
  - ***If*** *a method could be developed for partial removal of yolk without major loss of viability,* ***then*** *it is proposed to investigate the cryobiological properties of the yolk-reduced embryos…*
- Using concessives
  - ***Whilst*** *considerable progress has been made over the last two decades in the cryopreservation of mammalian embryos, the successful cryopreservation of fish embryos has remained elusive.*
  - ***Although*** *eggs or embryos have been shown to survive for a short time after cooling to subzero temperatures, successful cryopreservation of fish eggs and embryos remains elusive.*

Discourse Functions

- Using purposives
  - ***In order to determine*** *the optimal dilution method for removal of 10 M methanol, intact 6-somite embryos were transferred…*
  - ***To determine*** *ice content with reference to the freezing enthalpy (ΔH_{freeze}), corrected values of heat fusion (L_f) were used…*
- Expressing and interpreting results and findings
  - *All embryos **were found** to become opaque during cooling, and temporarily whiten during warming.*
  - *Embryos at the 1-cell stage also **showed** high sensitivity to 2 M methanol.*
  - *These findings **are similar to** those obtained by Fahy (1984) for DMSO…*

Discourse Functions

- Expressing chronological order
  - For chilling sensitivity tests, flat-bottomed test tubes containing 1-cell stage embryos in 2 ml EM **1** were placed in wet ice (0°C) for 3, 5, 7, 10, 15, 20 or 30 min. *After* chilling, test tubes **2** were placed into a 26°C water bath for 30 min. Embryos **3** were *then* transferred to 100 ml beakers containing 50 ml EM and **4** kept in the fish room (26 ± 1°C). Surviving embryos **5** were checked and dead embryos **6** were discarded daily until the fifth day. To evaluate 2 M methanol toxicity to 1-cell stage embryos, embryos **7** were immersed in 2 M methanol for 10, 20, or 30 min at room temperature (23 ± 2°C). *After* equilibration, methanol **8** was removed and the embryos **9** were washed three times using EM and **10** *then* incubated in the fish

(Boldfaced numbers are provided for descriptive purposes—they were not in the original. Words in italics mark the sequence.)

Discourse Functions

- Using passives for coherence
  - Twenty to thirty intact *embryos* were placed in Eppendorf tubes containing 1 ml EM, loaded in the chamber of the KRYO 10 controlled rate cooler, and cooled with a slow (0.3 or 1°C/min), or intermediate (30°C/min) cooling rate from a starting temperature of 20°C to either 0 or -5°C. *The embryos* were maintained at these final temperatures (0 or -5°C) for different periods of time (Table 2.5). Occasionally, *the embryo medium* froze [note this one is not passive] during chilling at -5°C and *these frozen samples* were discarded. After chilling, *the embryos* were warmed immediately in a 26°C water bath, followed by 3 day culturing in EM at 26 ± 1°C for survival assessment (Section 2.2.3). For rapid cooling, *embryos* were mounted on gold electron microscope grids and then plunged into a pre-chilled beaker at 0 or -5°C. After being held at these temperatures, *the embryos* were warmed and survival assessed in the same way as *those embryos* cooled by a rate of 1°C/min or 30°C/min.

Discourse Functions

- Introductory moves
  - Previous studies (Zhang and Rawson, 1995) showed that chilling sensitivity of zebrafish embryos is stage-dependent and survival of embryos decreased with storage time and temperature **[establishes the territory or topic]**. However, no published data are currently available on whether or not the chilling injury of zebrafish embryos is associated with the rate of cooling, or whether the embryos are susceptible to cold shock injury arising from rapid cooling **[establishes the niche, a space or gap where additional research is needed].** This study is intended to help fill these information gaps **[begins to fill the space by giving an objective for the study--the methodology for the experiment then follows]**

See Hubbard, P. (Forthcoming). "Teaching Discourse Functions Using a Science Thesis." *Journal of Writing and Pedagogy*: 1.2.

Conclusion

- Course Review: handout
- Final assignment feedback
- Questions?