

Metalinguage among Families in a Marine Science Museum

Carol B. Brandt, Doris Ash
University of California Santa Cruz, Department of Education
1156 High Street, Santa Cruz, CA 95060
Email: carolb@ucsc.edu, dash5@ucsc.edu

Abstract: Metalinguage, talking about talk or talk about text, is a heightened awareness of language, and how language functions in a socio-cultural setting. Using video and audio data from 20 Spanish-speaking families in a marine science center in north-central California, we describe our system for identifying metalinguage in dialogue as families visit the science museum. Our goal is to understand ways in which metalinguistic practice contributes to meaning making around biological concepts.

Introduction

In our research with bilingual families in science museums, we are interested in how parents and children move from everyday language and appropriate scientific language. As these family members talk about talk, or talk about text, they are engaged in metalinguage (Coupland & Jaworski, 2004). O'Connor and Michaels (1996) have also referred to this practice as "revoicing" and a strategy to establish mutual understanding in dialogue. We describe our system for identifying metalinguage in bilingual dialogue, the coding scheme that we applied to our data, and look at how metalinguistic practice contributes to, or detracts from, meaning-making about biological concepts. Our research questions are: What metalinguistic features can we identify in dialogue among families as they use a marine science museum? How do exhibit texts appear in metalinguage? And similarly, are dialogues about science taken up metalinguistically?

Research Methods

Our analysis is centered on a large, naturalistic data set of 20 Spanish-speaking families in a marine science center in north-central California. Each visit consists of at least two children and one parent, plus a bilingual mediator who translates English signage and answers questions. We rely on a socio-cultural theoretical framework rooted in dialogue and in activity (Engestrom, 1981; Wells, 1999). Meaning is built over time by successive dialogic episodes that can be discontinuous in time (Ash, 2004). Using video data, observation, interviews, stimulated recall methods (Gass and Mackey, 2000). Our research follows families as they make sense of science dialogically.

Examples of our coding scheme

Our identification of metalinguage follows a systemic-functional approach (Halliday & Hassan, 1985). We coded dialogue by indicating: the person who was the Speaker, the person who was the Respondent, the type of Metalinguage (see below), Gestural References (e.g. pointing), and the Object of the metalinguistic reference (text or dialogue). Types of Metalinguage include (metalinguistic markers in italics):

- A. Claiming authority (A1), transferring authority to another speaker (A2), or hedging (A3)
Son: (Flipping through photographs and referring to sea lions) Look, come, let's see, look, here are the other types, look. I thought, I didn't think that they had hair, then *my mom says* that they do have hair. Look, there it is, there are others, look at the other types of seals there are. (B Family visit 1, line 1422)
- B. Intertextuality – bringing other sources of information into the conversation
Son: The whale like.... *I have read in a book that* when it goes to sleep it goes up to the edge of the sea.... (indicating with his hand near the surface of the water). (B Family stimulated recall, line 500)
- C. Clarifying information – rephrasing or repeating what another person has said
Bilingual Mediator: *So, when you said that*, that it had...that it looked like a shark but it could be that it has the shape of a shark....
Dad: Ah, hah, it has, it has.... because it's not, it's not, it's not the same. To me this one is.... not, not, I don't know how, how, how to explain to you, but to me it's not a fish. (B Family visit 2, lines 324-328)

- D. Conversation continuity – usually involves repeating the other speakers words
 Daughter: [Speaking about whales] I don't know. I just like that sound they make.
 Mediator: Oh, *you like the sound they make.* Okay. Okay.
 Oh, *you like the sound they make.* Okay. Okay. [Turns to Mother] What did you think, Senora,
 when your daughter was talking to you about ---- Did it surprise you that she knew so much
 [about whales]? (J Family visit 1 stimulated recall, lines 48-50)

Results: The Qualities of Metadiscourse

Preliminary observations from our research show that even with the translation by a bilingual mediator and their English-speaking children, families rarely re-voice or reference exhibit text. Metadiscourse is most often shared between the mediator and parents recount their museum visit in the stimulated recall session, and less metalanguage occurs between parents and children, or among all participants on the science museum floor. In these results we compare the occurrence of metalanguage relative to the dialogue across the entire visit at the museum.

Conclusions and Significance

Our study is one of the first times metalanguage has been applied to naturalistic studies of dialogue in science museums. Metalanguage is valuable for understanding how authority is constructed among speakers and is one way that parents tentatively incorporate more “scientific” terms into their lexicon. In our research we found that by rephrasing or using “clarifying” phrases through metalanguage, helps to negotiate the meaning of science content. The opportunity to practice using science terms and concepts has metalinguistic features, especially as one adopts new terminology and the set of values that are attached to science. In museums docents can use metalinguistic skills to more effectively scaffold learning for diverse audiences.

References

- Ash, D. (2004). Reflective scientific sense-making dialogue in two languages: The science in the dialogue and the dialogue in the science. *Science Education*, 88, 855-884.
- Coupland, N., & Jaworski, A. (2004). Sociological perspectives on metalanguage: Reflexivity, evaluation, and ideology. In Jaworski, A., Coupland, N., & Galasinski, D. (Eds.), *Metalanguage: Social and ideological perspectives*, pp. 15-51. Berlin: Mouton de Gruyter.
- Engeström, Y. (1999). Activity theory and individual and social transformation. In, Y. Engestrom, R. Miettinen, & R. Punamaki (Eds.), pp. 19-38. *Perspectives on activity theory*. Cambridge, UK: Cambridge University Press.
- Gass, S. M., & Mackay, A. (2000). *Stimulated recall methodology in second language research*. Mahway, NJ: Lawrence Erlbaum.
- Halliday, M.A.K., & Hasan, R. (1985). *Language, context, and text: aspects of language in a social-semiotic perspective*. Oxford: Oxford University Press.
- O'Connor, M., & Michaels, S. (1996). Shifting participant frameworks: Orchestrating thinking practices in group discussions. In D. Hicks (Ed.), *Discourse, learning, and schooling* (pp. 63-103). New York, NY: Cambridge University Press.
- Wells, G. (1999). *Dialogic inquiry: Towards a sociocultural practice and theory of education*. New York: Cambridge University Press.