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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 18(0)

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Publication Date

1996

Peer reviewed

The Decline of Communicative Competence after Closed Head Injury

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Neuropragmatics

Current theories of pragmatics are exclusively interested in the normal adult; most are also underdetermined from a psychological viewpoint, in that they make no attempt at falsification, limiting themselves to analytic considerations and/or formal or computational reformulations.

We aim at the neuropsychological validation of a cognitive theory of human communication (Airenti, Bara & Colombetti, 1993a, 1993b). Our ultimate goal is to sketch the evolution of communicative competence from its acquisition in the child to its decline in the normal and the brain-damaged individual. As a first step we explored some consequences of closed head injury (CHI) (Bara, Tirassa & Zettin 1996).

Experimental Setting

Our experimental subjects were 13 non-aphasic CHI patients. We tested them on five pragmatic phenomena: direct utterances, simple indirect utterances, complex indirect utterances, irony and deceptions; each inferential path was explored both in the successful and the failure case.

The whole protocol comprised 21 tasks. Most consisted in the presentation of a brief (10-15 seconds) videotaped scene, showing a simple verbal exchange between two actors. The subject was free to give her own interpretation of the actors' utterances. When she was satisfied, the subsequent scene was shown. A few tasks required simple planning, and a few others were presented *in the wild*, as predefined utterances nonchalantly interwoven in the brief conversation that preceded the formal experimental session.

The tape-records of the sessions were evaluated by two judges, blind with respect to the theoretical approach and to the goal of the research, who marked each task as passed if the subject showed a reasonable (however free) understanding of the dialogue.

Results

We expected a trend of increasing difficulty from successful direct and simple indirect utterances to complex ones, to irony, to deceptions; and a parallel, but poorer, trend on the corresponding cases of failure.

These expectations were systematically confirmed to a good or high degree of statistical significance. Since all the tasks were relatively simple, what our data show is that a *simple* irony is easier to CHI patients than a *simple* deception,

but harder than a *simple* indirect utterance, and so on; but it would be obviously absurd to infer that *any* irony is easier than *any* deception, and harder than *any* indirect utterance.

The subjects' success on two *theory of mind* tasks ("Maxi" and "Smarties") rules out any incapability to handle the mental states involved in communication. We also administered several standard neuropsychological tests: the main correlation here was with working memory.

The case against direct speech acts

We found a 100% performance on direct and simple indirect utterances (e.g., respectively, "Close the window" and "Could you close the window?"). This contrasts sharply with the previous literature on CHI (see Stemmer [1994] for an overview), but is in perfect agreement with our theoretical framework.

Gricean-Searlean, literal-based models of utterance comprehension would predict an increase in difficulty from direct speech acts to simple indirect ones to complex ones; the performance of inferentially damaged individuals should decrease correspondingly.

In our framework, there are no direct utterances: to understand an utterance *always* requires some inference. Thus, the breaking point is not between direct and indirect utterances, but between simple and complex ones: simple indirect utterances ("Can you close the window?") are as easily understood as direct ones ("Close the window"), whereas complex ones (such as "I don't want to die freezing") are harder. Our data tend to validate this approach.

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