Situating Rich Demonstrations in Conversation

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I investigate a phenomenon I call "rich demonstration", wherein a demonstrative gesture is used to communicate an entire thought, as in (1) and (2):

(1) a. X: My parents are going to be furious.
b. [*X turns their arm, revealing a fresh tattoo*]
c. Y: But they have tattoos themselves!

(2) a. I moved the table into the living room this morning.
b. [*The speaker nods toward some scratches on the wall*]
c. I had to buy some new paint.[1]

Intuitively, the gestures in (1) and (2) have assertion-like effects on their discourses. I argue that standard neo-Gricean pragmatic frameworks fail to explain the phenomenon's features, and present an analysis based in discourse coherence theory. My analysis has two parts. The first has to do with the discourse contribution a rich demonstration has. On my view, a rich demonstration's complex interpretation is due entirely to how it coherently relates to prior discourse, and receives no semantic interpretation of its own. I present a simple formalism to illustrate the ways in which rich demonstrations are similar to and distinct from linguistic assertions—they are similar in that their coherence effects are the same, but distinct in that they have no further denotation. A conversation state $K = \langle M, R, C\rangle$ is a triple consisting of a list of moves $M = \langle m_1 \dots m_n\rangle$, a record of coherence relations between moves $R = \{\langle r_a, m_i, m_j\rangle \dots \langle r_b, m_o, m_p\rangle\}$, and a context set $C = \{w_h \dots w_k\}$. I distinguish between two kinds of move, assertion $A(s)$ and demonstration $D(\delta)$ (where s is a sentence and δ is a perceptually available scene) to explicitly characterize their different kinds of update $[\cdot] : K \to K$:

(3) $K_1[m] = K_2$:
a. $M_2 = \langle m_1 \dots m_n, m\rangle$ for all $m_n \in M_1 \approx$ add the new move to the list of moves,
b. $R_2 = R_1 \cup \{\langle r, m, m_i\rangle\}$ for some $m_i \in M_1 \approx$ add the new move's (pragmatically-determined) coherence relation with some prior move to the record,
c. If $m = A(s) : C_2 = [\![r(m, m_i)]\!] \cap C_1 \cap [\![s]\!] \approx$ ensure that all worlds in C are compatible with the semantic value of s and of its coherence relation,
d. If $m = D(\delta) : C_2 = [\![r(m, m_i)]\!] \cap C_1 \approx$ ensure that all worlds in C are compatible with the semantic value of the demonstration's coherence relation.

The advantage of this approach is that it separates the semantic content of a linguistic segment $[\![s]\!]$ from the semantic content of a coherence relation between two moves $[\![r(m_1, m_2)]\!]$. What the semantic content is for any particular coherence relation may be debatable, but plausible contents exist, e.g. *Narration* has as content that one event preceded another or that *Result* is a causal relationship [1].

The main difference between the two kinds of update $[A(s)]$ and $[D(\delta)]$ is that the only former shrinks C to include only those worlds where both s's content and the coherence relation's content are true. For a demonstration, C only shrinks to accommodate the coherence relation (which is intuitive, since assigning semantic content to a gesture itself is notoriously difficult).

I contrast this with the analysis provided by [2, 3], who utilize coherence theory to assign full (SDRT) propositional content to gestures and nonlinguistic events generally. The second part of the analysis has to do with the constraints on how rich demonstrations can coherently relate to prior discourse—they can only do so via subordinating coherence relations.

References

[1] N. Asher and A. Lascarides. *Logics of Conversation*. Cambridge University Press, 2003.

[2] J. Hunter, N. Asher, and A. Lascarides. "A Formal Semantics for Situated Conversation". In: *Semantics and Pragmatics* 11.10 (Sept. 2018).

[3] J. Hunter, N. Asher, and A. Lascarides. "Integrating Non-Linguistic Events into Discourse Structure". In: *The 11th International Conference on Computational Semantics (IWCS)*. 2015, pp. 184–194.

[1] From Hunter et al. [2]