Infants' Conceptual Understanding and Organization of Agents and Patients

Melissa A. Redford (mredford@utxsvs.cc.utexas.edu)
Leslie B. Cohen (cohen@psy.utexas.edu)
Department of Psychology
University of Texas at Austin
330 Mezes, Austin, TX 78712 USA

Semantic roles such as "agent" and "patient" are abstract linguistic categories that define relationships between objects in sentences. Many theorists assume: (1) a correspondence of varying degrees between semantic roles and general cognitive concepts; and (2) that these general concepts are fundamental to language learning as semantic roles are thought to be related to syntactic knowledge (e.g., Grimshaw, 1981; Pinker, 1989). For example, grammatical subjects are usually agents and tend to precede grammatical objects which are usually patients. Although we have known for quite some time that young children have semantic roles and use them to structure early speech (Bloom, 1973), it has not been adequately demonstrated that infants, prior to combining words, have formed the corresponding general cognitive concepts or that they organize these concepts in systematic ways.

The first study addressed whether infants have general cognitive concepts of agent and patient or whether they respond to role reversals at a perceptual level. Thirty two 10- and 14-month-old infants were habituated to an event in which the objects were either in an agent-patient relationship or were both independent agents. When tested on event sequences in which the order of the objects was switched, 10-month-olds were sensitive to a switch in both conditions indicating that at this age they discriminated between the test event and the familiar event on a perceptual basis. 14-month-olds, however, appeared to have acquired the concepts of agent and patient. They looked longer at a switched sequence if the switch entailed a reversal of roles, but not if the roles of the objects remained the same.

The second study examined whether or not infants' find agents more important than patients. A conceptual bias of this sort might provide the basis for the systematic ordering of linguistic agents prior to patients in early speech. Predictions were based on two hypotheses that might lead to an ordered relationship between agents and patients. The first prediction was that infants would be more sensitive to the introduction of a novel agent than a novel patient if agents are more important in causal sequences than patients. An alternative prediction would be that infants are more sensitive to the introduction of a novel object when that object is the first object to act in any action sequence. This alternative recognizes that the ordering of agents and patients in event sequences might be independent of their semantic content. Sixteen 14-month-olds were tested on event sequences in which a novel object was introduced into either the first position or the second position of a causal or noncausal event. The results indicated that infants were sensitive to the presence of a novel object in both the first and the second position and they showed no preference for one position or the other in either condition.

It is possible that the results from this last experiment indicate that infants were merely responding to the novel object and not to the position in which the object appeared. For this reason, in an ongoing study we have modified the habituation trials to include the third object so that when this object is introduced into either the first or second position we will be testing for a role or a position preference and not for a novel object preference.

The results from the completed studies provide evidence that infants have general cognitive concepts corresponding to semantic roles and that these concepts undergo development between 10 and 14 months of age. In addition, the results indicate that 14-month-old infants pay attention to objects that occur in both the first and second position of causal and noncausal event sequences. Whether or not 14-month-old infants also have a conceptual bias for one object role or position in event sequences that would lead to an ordered relationship between agents and patients continues to be investigated.

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