

Actions vs. Words: How We Can Learn Both

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Abstract

In three experiments we investigated the relation between observing responses and incidental language acquisition by children ages 3 to 5 with and without disabilities. In Experiment I, participants heard the name of an object while observing an accompanying action with the object. The participants consistently acquired the actions associated with the objects, but learned few names. Experiment II compare responses to stimuli presented with and without actions, with the results indicating that the presence of an action hindered rather than facilitated incidental acquisition of names. In Experiment III, we selected participants who acquired listener responses when actions were present, but did not readily acquire the speaker responses. Following a multiple exemplar intervention, participants acquired both speaker and listener responses along with the action responses for novel stimuli. The findings suggest that when children are provided with a specific instructional history, they can acquire multiple benefits from a single language exposure experience.

Keywords: Observing Responses, Stimulus Control, Conditioned Reinforcement, Sensory Dominance, Language Acquisition

Acciones vs. Palabras: Cómo Podemos Aprender Ambas

Resumen

En tres experimentos se investigó la relación entre respuestas de observación y la adquisición de lenguaje incidental por niños de 3 a 5 años con y sin discapacidad. En el Experimento I, los participantes escucharon el nombre de un objeto mientras observaban una acción que acompañó al objeto. Los participantes consistentemente adquirieron las acciones asociadas con los objetos, pero aprendieron pocos nombres. El Experimento II comparó las respuestas ante estímulos presentes con y sin acciones. Los resultados indicaron que la presencia de una acción dificultó en lugar de facilitar la adquisición incidental de los nombres. En el Experimento III, se seleccionaron participantes que adquirieron respuestas de oyente cuando las acciones estaban presentes, pero que no habían adquirido las respuestas de hablante. Después de una intervención múltiple ejemplificada, los participantes adquirieron tanto las respuestas de oyente como las de hablante conjuntamente con las respuestas de acción para estímulos novedosos. Los resultados sugieren que cuando se provee a los niños con una historia instruccional específica adquieren beneficios múltiples de una sola exposición de experiencia con el lenguaje.

Palabras Clave: Respuestas de Observación, Control de Estímulos, Reforzamiento Condicionado, Dominancia Sensorial, Lenguaje, Adquisición

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In our everyday experiences, each of our senses is simultaneously bombarded by a variety of stimuli. In order to function, humans have developed a capability to selectively attend to some aspects of the environment and filter out others. Although we are immersed in constant stimulation, we only contact a select few stimuli. Two individuals in the same setting can have entirely different experiences. Both are presented with the same information, but their attention is turned in different directions. This is the same phenomenon by which we “suddenly notice” something. Although it has been present in our environment, it does not catch our attention until it becomes relevant (Keohane, Luke, & Greer, 2008; Skinner, 1974).

As young children contact environmental experiences, they encounter objects and actions that they do not yet know the names of. At the same time, they are only selectively aware of limited environmental stimuli in the vast array of available stimuli. As language develops, these objects and actions become connected to the arbitrarily applicable words for things that have evolved in a given culture. Learning actions, and words for actions and things, develops as a function of which of the available environmental stimuli attract the child’s attention. While phylogeny contributes a great deal to the process (i.e., visual acuity, auditory acuity, and neurophysiology), environmental experiences play a key role, especially at the cultural level and in the development of language (Christiansen & Chater, 2008; Kenneally, 2007; Tomasello, 2008). Different disciplines approach the contributions of experience to this phenomenon from different perspectives. We believe that combining findings from different disciplinary approaches to development can lead to a more complete understanding of learning and development. To that end, when a child is drawn to a movement, the object moving, and the word for that object, the discipline of the behavioral analysis of language or verbal behavior uses the term stimulus control (Catania, 2003; Dinsmoor 1983, 1985, 1995; Skinner, 1957). Stimulus control develops from a history of positive and negative experiences and contributes to how we individually contact our world (Keohane, Luke, & Greer, 2008; Skinner, 1974).

In the behavior analytic literature on language development (Greer & Ross, 2008; Novak & Pelaez, 2004), the acts of noticing are referred to as observing responses. Observing responses incorporate the afferent sensory pathways with which we attend to the stimulus (Wykoff, 1952). Different stimuli will select out our observing responses depending, in part, on prior experiences. Our history of prior experiences contributes to what we observe (Keohane et al., 2008). When an individual encounters a multi-sensory event, some evidence suggests that we are either listening or looking; humans rarely devote equal attention to both experiences (Sinnott, Soto-Faraco, & Spence, 2008). Although we respond to stimuli with multiple senses, the dominance of vision over the other senses has been consistently replicated. In a frequently cited experiment, Colavita (1974) reported that participants consistently attended to a visual rather than an auditory stimulus when both were presented simultaneously, and this finding has been consistently replicated in the four decades since the initial publication (See Spence, 2009 for a summary). The implications of these findings are far reaching, especially for the development of language, which involves auditory stimuli as

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