

Summary

What Are Nonequivalence Relations? Why Do They Matter?

1. *Stimulus relations* are arbitrary associations between stimuli, with “association” meaning that how one stimulus is responded to is intertwined in some way with how other stimuli are responded to.
2. Stimulus equivalence is only one of a wide variety of stimulus relations. Not all stimuli are related via “same as,” and nonequivalence relations are integral to many everyday experiences.

The Vocabulary of Nonequivalence Relations

3. Key ways of talking about stimulus equivalence do not work for nonequivalence relations, so a substitute vocabulary is needed.
4. What’s called *symmetry* in the stimulus equivalence literature is subsumed under the term *mutual entailment*, which means the converse of any A-to-B relation. For example, if the original relation is “A is greater than B,” the converse will be “B is less than A.”
5. What’s called *transitivity* in the stimulus equivalence literature is subsumed under the term *combinatorial entailment*, which means any derived relation in which the function of stimuli depends on the other stimuli to which they are indirectly related.
6. What’s called *transfer of function* in the stimulus equivalence literature is subsumed under the term *transformation of function*. This means that the stimuli in a relational class do not all acquire the same behavioral functions; however, the functions acquired by any stimulus depend on the functions acquired by others in the class.

Some Types of Nonequivalence Relations

7. Structured protocols similar to those used in equivalence-based instruction have been successful in establishing nonequivalence repertoires of everyday importance.
8. The notion that there are many ways of relating the same stimuli implies the existence of *contextual stimuli* that signal which way of relating is appropriate to a given situation. Explicit contextual stimuli are recommended as part of applied interventions focusing on derived stimulus relations.
9. *Distinction relations* involve relative stimuli being judged as different. *In opposition relations*, stimuli are opposites. *In comparison relations*, stimuli differ along some definable dimension.
10. Stimuli can also be related in terms of spatial or temporal juxtaposition and in terms of cause-effect relations.
11. Structured tools are just beginning to become available for programming derived stimulus relations like those described here.

Theoretical Foundations

12. Most research on nonequivalence relations has been guided by *relational frame theory*, which assumes (a) that verbal processes are bound up in derived stimulus relations, and (b) that given enough reinforced experience with multiple exemplars, people develop a higher-order ability to derive relations among sets of stimuli, even in the absence of further reinforced experience.
13. The role of verbal behavior in derived stimulus relations is not fully understood, but assuming a close connection has led to interesting research. For example, as the theory would predict, providing reinforced multiple-exemplar experience has been shown to create generalizable relational abilities. This may be an example of what relational frame theory calls *arbitrarily applicable relational responding*, a generalized repertoire that allows new classes to form without new reinforced experience.
14. It has also been found that, for some learners, the baseline relations of stimulus classes can be built simply by telling learners about them. Among other things, this finding could imply that verbal experience is functionally similar to the largely nonverbal match-to-sample experience provided in many stimulus equivalence protocols.

Nonequivalence Relations and Big-Picture Psychological Constructs

15. Categorical knowledge: Establishing a type of nonequivalence relation called *hierarchical relations* produces several effects seen in cognitive psychology studies of categorization.
16. Self-concept: A type of nonequivalence relation called *deictic relations* may underlie important self-related and social repertoires, a primary example of which is perspective shifting, in which an individual experiences the world as another person would.
17. Intellectual development: Normatively speaking, various types of derived stimulus relations tend to emerge gradually during child development. Importantly, systematically training stimulus relations has been found to boost scores on standardized intelligence tests.

Derived Stimulus Relations and General Well-Being

18. "Well-being behaviors" are those on which a person's most valued reinforcers are contingent. Many challenges to general psychological well-being involve the constraining of well-being behaviors by private events that include emotional responses and self-generated rules.
19. *Acceptance and commitment therapy* is a behavior therapy based partly on relational frame theory and research on derived stimulus relations (including nonequivalence relations). It focuses on promoting general well-being. In many cases, the therapy does not target public behaviors relevant to the referring problem. Instead, to undermine the control of behavior by problematic private events, the therapy employs verbally guided exercises that are very different from most ABA interventions.
20. The therapy has been shown to lessen symptoms of certain clinical disorders and to enhance performance in nonclinical situations. Another important application has been to reduce stress and alleviate depression in parents and caregivers of persons with disabilities. In some documented cases, improving caregiver well-being has been followed by improvements in client behavior.

Summary

Imitation

1. Imitation entails four criteria: (a) The imitative behavior is occasioned by another person's model of the behavior (or symbolic representation thereof), (b) the imitative behavior has formal similarity with the model, (c), the imitative behavior follows the modeled behavior closely in time, and (d) the model is the primary controlling variable for the imitative behavior.
2. A model is a live or symbolic demonstration of the target behavior that shows the learner exactly what to do.
3. Formal similarity occurs when the imitator's behavior physically resembles the model and is in the same mode.
4. A brief latency between the model and the learner's behavior is an important feature of imitation.
5. Most instances of *delayed imitation* may be better understood with other behavioral principles and processes.
6. The most important property defining imitation is the controlling relation between a model's demonstration and a learner's performance of topographically similar behavior.
7. Imitation training is a systematic, research-based set of steps for teaching a non-imitative learner to imitate models of novel behaviors.
8. Generalized imitation refers to a learner imitating a wide variety of unprompted, untrained, non-reinforced modeled behaviors in different settings and situations.
9. Striefel's (1974) imitation training protocol for practitioners has the following components: (a) assess, and teach if necessary, prerequisite skills for imitation training; (b) select models for training; (c) pretest; (d) sequence models for training; and (e) conduct imitation training.
10. Guidelines for imitation training include the following:
 - Keep sessions active and brief.
 - Reinforce both prompted and imitative responses.
 - Pair verbal praise and attention with tangible reinforcers.
 - If progress stalls, back up and move ahead slowly.
 - Fade out verbal response prompts and physical guidance.
 - Measure and record the learner's performance and review the data after each session.
 - Terminate imitation training when the learner meets specified performance criteria such as: imitates the first presentations of five consecutive novel models across three sessions, imitates several untrained behavior chains (e.g., washing hands, brushing teeth, fingerspelling).

Modeling

11. Modeling is a behavior change strategy in which learners acquire new skills by imitating demonstrations of the skills by live or symbolic models.
12. Video modeling is a technique that involves the demonstration of desired behaviors through visual representations of the behavior.

13. In video self-modeling, the learners observe a video of themselves successfully performing the target behavior and imitates their self-model.
14. The effectiveness of modeling may be enhanced by:
 - Models with characteristics similar to those of the learner.
 - Models the learner considers to have prestige or social status.
 - Models' emphasis on critical aspects of the target behavior.
 - Instructions orienting and prompting the learner to attend to the model.
 - Model demonstrating the target behavior in an authentic context.
 - Rehearsal and feedback.
 - The learner observing the model receiving reinforcement for the target behavior; the learner receiving reinforcement for imitating the target behavior.

Observational Learning

15. Observational learning entails another person's behavior and its consequence(s) and using that information to determine whether or not to imitate the behavior. Observational learning typically involves imitation but does not require it.
16. Three requisite skills are central to developing an observational learning repertoire: attending, imitating, and discriminating. If any of the skills are lacking, they can be taught separately and then combined.