# The Constructional Approach to Zoo Animal Training: Enhancing Welfare Through Emerging Evidence-Based Behavioral Science

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The constructional approach is an evidence-based framework for behavior change that emphasizes building functional, desirable behavioral repertoires rather than eliminating problem behaviors. Rooted in over 50 years of behavioral science and first described by Israel Goldiamond (1974), it has been advanced by T.V. Joe Layng, Paul T. Andronis, and Jesús Rosales-Ruiz, and is gaining significant traction in zoological settings.

Unlike traditional hierarchical training models, the constructional approach employs five critical elements: identifying terminal and current repertoires, selecting appropriate change procedures, establishing naturally maintaining consequences, and monitoring progress. Central to the framework is Nonlinear Contingency Analysis (NCA), which moves beyond simple antecedent-behavior-consequence models to examine competing contingencies, functional reinforcers, and emotional behavior patterns. This enables practitioners to identify when an intervention merely superimposes a new contingency rather than addressing the one maintaining the behavior—a common failure point in traditional approaches.

Key distinguishing features include appropriate application of both positive and negative reinforcement based on functional assessment, incorporation of genuine choice through degrees of freedom, and treatment of emotions as contingency descriptors rather than internal causes of behavior.

The poster features links to video examples of case studies from Copenhagen Zoo, OC Zoo, and a private facility that illustrate successful applications across diverse taxa—including tigers, rabbits, giraffes, and bears—addressing fear, aggression, non-compliance, and medical training challenges. Outcomes are frequently achieved in minutes that traditional methods failed to accomplish over months.

This poster is based on a peer-reviewed paper published in Animals (MDPI, 2025) and includes a QR code linking to the full open-access article for attendees seeking a deeper exploration of the framework and its applications.