



## Correspondence between traditional models of functional analysis and a functional analysis of manding behavior

Robert H. LaRue<sup>\*</sup>, Kimberly N. Sloman, Mary Jane Weiss, Lara Delmolino, Amy Hansford, Jill Szalony, Ryan Madigan, Nathan M. Lambright

*Rutgers, The State University of New Jersey, United States*

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### ABSTRACT

Functional analysis procedures have been effectively used to determine the maintaining variables for challenging behavior and subsequently develop effective interventions. However, fear of evoking dangerous topographies of maladaptive behavior and concerns for reinforcing infrequent maladaptive behavior present challenges for people working in applied settings. The present investigation sought to evaluate the utility of an adjunctive functional analysis model that involved the reinforcement of mands rather than problem behavior and compared the results to traditional functional analyses. The results from the manding analysis yielded results similar to the traditional FA in 3 of 4 cases. These findings suggest that manding analyses may represent a useful assessment tool for difficult to assess problem behavior or for individuals in settings where consultative support is limited.

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Functional analysis is a powerful tool for determining the function of maladaptive behavior. Since the development of these procedures in the landmark study of Iwata, Dorsey, Slifer, Bauman, and Richman (1982/1994), the effectiveness for determining the causal factors for maladaptive behavior has been validated in hundreds of studies (see Hanley, Iwata & McCord, 2003 for a review) and has been linked to the development of effective, function-based interventions (e.g., Paclawskyj, Kurtz, & O'Connor, 2004).

While models for implementation of functional analysis in applied settings have found considerable support in the literature (Broussard & Northup, 1997; Iwata, Vollmer, & Zarcone, 1990; Steege & Northup, 1998) and training models for practitioners have been developed (Iwata et al., 2000; Moore et al., 2002), there remains a gap between *best practice* and *common practice* in applied settings Desrochers, Hile, and Williams-Mosely (1997). The gap between best practice and common practice may exist for multiple reasons. One possible reason is that traditional models of functional analysis require practitioners to temporarily reinforce maladaptive behavior. While the hypothesis testing process necessitates this step, reinforcing problem behavior may seem counterintuitive to practitioners and lead to fear of unintended consequences when implementing functional analyses. For instance, practitioners may be concerned with “creating” a new problem behavior or strengthening an existing one as a result of using functional analysis. Concerns may become more pronounced when the target behavior is potentially dangerous (e.g., self-injury that produces tissue damage, severe aggression) and can result in injury to staff, family members, and the individual. Finally, ethical and practical concerns may arise when reinforcing maladaptive behavior that happens intermittently (e.g., problem behavior that occurs weekly or monthly). Relatively few models of assessment have been proven to be viable for evaluating infrequent classes of behavior.

<sup>\*</sup> Corresponding author at: Graduate School of Applied and Professional Psychology and the Douglass Developmental Disabilities Center, Rutgers University, 151 Ryders Lane, New Brunswick, NJ 08901, United States. Tel.: +1 732 932 3017x154.

E-mail address: [larue@rci.rutgers.edu](mailto:larue@rci.rutgers.edu) (R.H. LaRue).

One possible model to circumvent the challenges associated with traditional functional analysis methods may be to conduct a functional analysis of manding (requesting) behavior. Carr and Durand (1985) published the seminal article regarding the use of functional communication training (FCT) over 20 years ago. The authors found that, following a functional analysis, they were able to teach an appropriate alternative behavior based on the identified functional reinforcer to replace aberrant responding. Specifically, their results showed that trained communication responses that matched the function of challenging behavior increased, while the rate of maladaptive behavior decreased during FCT. Simply put, they found that if an individual engaged in maladaptive behavior to escape demands, teaching the student to request help or breaks (i.e., a functional response) resulted in increases in communication and decreases in maladaptive behavior. If an irrelevant response was taught (e.g., teaching an attention request for escape-maintained problem behavior), communication did not increase and maladaptive behavior persisted. This study provided the basis for functional communication training and now represents one of the most effective intervention strategies for intervening with challenging behavior (for reviews, see Fisher et al., 1993; Hagopian, Fisher, Sullivan, Acquisto & LeBlanc, 1998).

Although FCT procedures are typically used for the treatment of maladaptive behavior, the procedures could theoretically be adapted as an assessment procedure. Presumably, it would be possible to teach different communication responses (e.g., a “break” response, an “attention” response) and conduct a functional analysis of these responses as an alternative to reinforcing maladaptive behavior. Based on the literature on FCT, the analysis of manding should yield comparable results to the traditional model of functional analysis. In other words, if functional communication training were conducted prior to the analysis, individuals should request the same reinforcers that maintain target behavior (e.g., they would touch a card to get attention if they would engage in maladaptive behavior for attention).

The purpose of the current investigation was to determine if a functional analysis of manding would yield similar results to a traditional functional analysis. Participants in the current investigation had functional analyses conducted using both a traditional model of functional analysis and the manding analysis. The primary difference in the FA procedures was that the manding analysis involved the reinforcement of trained communication responses rather than maladaptive behavior. If the models of assessment have a high degree of correspondence, the manding analysis may represent a viable assessment option for challenging behaviors that may hinder the ability to conduct traditional models of analysis in certain situations.

## 1. Methodology

### 1.1. Participants and setting

Four individuals aged 7–24 participated in the current investigation (Mike, Sarah, Paul, and Jeff). All participants were diagnosed with Autistic Disorder and intellectual disability. All participants attended the School or Adult programs of the Douglass Developmental Disabilities Center at Rutgers University. Participants had been referred for the assessment and treatment of maladaptive behavior. All participants in the current investigation were nonverbal and had no prior experience with functional communication training.

Sarah (a 7-year-old female) was referred for the assessment and treatment of inappropriate vocalization. Mike (a 24-year-old male) and Paul (a 15-year-old male) were referred for the assessment and treatment of self-injurious behavior. Jeff was a 10-year-old male referred for the assessment and treatment of self-injurious behavior and aggression.

Functional and manding analyses were conducted in therapy rooms equipped with tables, chairs, and any items necessary for functional analysis conditions. Trained classroom staff conducted sessions. The same materials were used in both the traditional functional analysis and the manding analysis. Preliminary descriptive data (i.e., ABC data collection) had indicated that participants engaged in socially mediated problem behavior.

### 1.2. Data collection

Individualized operational definitions were developed for each participant's topography of maladaptive behavior. *Self-injurious behavior* (Mike, Paul, and Jeff) was defined as head-to-object, hand-to-head or hand-to-body contact from a distance of 6 in. or greater. *Inappropriate vocalization* (Sarah) was defined as utterances above conversational level (i.e., screaming). *Aggression* (Jeff) was defined as hitting (contact between the student's hand and another person's body from a distance of 6 in. or greater), kicking (forceful contact between the student's foot and another person's body from a distance of 6 in. or greater), biting (contact between a student's teeth and skin or clothing of another person), throwing objects at others, and attempts to make contact that were dodged or blocked by others. During both the functional and manding analyses, instances of maladaptive behavior data were converted to responses per minute for all topographies of behavior. *Card touch* (Mike, Sarah, Paul, and Jeff) was defined as any contact between the hand (wrist to the tips of the fingers) and the communication card.

*Interobserver agreement.* Data were collected by trained observers in both traditional and manding analyses during the study. During the traditional functional analysis, a second observer independently collected data on each participant's behaviors during 37.0% of the sessions with a range of 30.2–54.5% across clients. Exact agreement coefficients for the five clients averaged 97.5% for maladaptive behavior with a range of 86.7–100%.

In the manding analysis, a second observer independently collected data on each participant's behaviors during 34.7% of the sessions with a range of 28.6–41.2% across clients. Exact agreement coefficients for the five clients averaged 100% for manding and 97.7% for maladaptive behavior with a range of 86.7–100%.

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