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# Factor structure of the Behavior Flexibility Rating Scale (BFRS)

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## Abstract

The Behavior Flexibility Rating Scale (BFRS) is designed to assess insistence on sameness or lack of behavioral flexibility, which is often associated with autism and other developmental disabilities. This study was designed to assess the factor structure of this scale for a sample of 968 individuals with autism, Asperger's syndrome, and Down syndrome. To establish factorial validity, an exploratory factor analysis (EFA) was conducted with half of the sample, with a confirmatory factor analysis (CFA) conducted with the remaining cases to cross-validate the model obtained with the EFA. The factor analyses supported the presence of two factors—Interruption/Disruption and Position/Location. However, further analysis suggested the presence of a third factor, Interpersonal Mishaps, for the Asperger's syndrome group.

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## 1. Introduction

The obsessive insistence on sameness and resistance to change have been key features of autism ever since Kanner's first descriptive account (Kanner, 1943). Individuals with

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autism appear to have great difficulty with adjusting to any unexpected physical or procedural changes in their environment (Lewis & Bodfish, 1998; Prior & MacMillan, 1973; Wahlberg & Jordan, 2001). This ‘insistence on sameness’ or ‘resistance to change’ is often included within the broader umbrella of repetitive behaviors, for example, the stereotyped manipulation of objects, self-injury, motor stereotypies, and dyskinesias (Lewis & Bodfish, 1998; Turner, 1999). Wahlberg and Jordan (2001) argued that the obsessive insistence on sameness seen in individuals with autism represents a lack of behavioral flexibility. That is the individual shows a lack of ability to adjust their behavior and tolerate or cope with unpredictable changes in the environment. While descriptions of this key feature of autism abound, little empirical work has been done in relation to the assessment of behavioral flexibility in individuals with autism.

One notable exception is the Sameness Questionnaire developed by Prior and MacMillan (1973). This questionnaire included 28 items that described limited play patterns, intense object attachments, unusual preoccupations, and rigid routines. In addition, a few items in this questionnaire focused specifically on the rating of insistence on sameness and resistance to change. Correlational analysis showed that eight of the items successfully discriminated between autistic individuals—who were diagnosed using Rimland’s Check List E-2, (1971), and non-autistic individuals. Objections to interruptions and an insistence on objects being in the same place were two of the most discriminating items. Although the authors did not report any factorial analysis, their correlational analysis suggest that these two specific areas of behavioral flexibility may be worthy of additional investigation. The behavior flexibility rating scale (BFRS) was developed as a potential measure of behavioral flexibility in children with autism and other developmental disabilities (Green et al., *in press*). An important aspect of scale development is to determine its potential usefulness in informing practitioners as they seek to develop intervention procedures that target specific aspects of a behavior. In order to determine whether behavioral flexibility is a one dimensional or multi-dimensional construct this paper was designed to assess the factor structure of this newly developed scale.

## 2. Method

### 2.1. Scale construction

A systematic review of literature that included descriptions of the insistence on sameness and/or resistance to change in individuals with autism was conducted in order to select items for the scale (Prior & MacMillan, 1973; Wahlberg & Jordan, 2001). Items were selected that described any general situations related to changed routines that may prove problematic for the individual. The scale items covered five areas: (a) an item is unavailable or may have been broken, moved, or misplaced; (b) a desirable event or activity is interrupted, cancelled, or delayed; (c) the person is subjected to unexpected sensory stimulation (e.g., human contact, noise, or sounds); (d) the person fails at a task; or (e) a task is left unfinished (e.g., a sibling has left some dirty dishes in the sink). A four-point Likert scale, ranging from 0 (not a problem at all) to 3 (the situation causes severe problems) was used to rate the severity of each potentially problematic situation. The rater was provided with a description for each of the four points on the scale (see Appendix A).

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