

*ANALYZING THE INFLUENCE OF TIC-RELATED
TALK ON VOCAL AND MOTOR TICS IN
CHILDREN WITH TOURETTE'S SYNDROME*

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This study examined the effect of tic-related talk on the vocal and motor tics of 2 boys with Tourette's syndrome. Using ABAB withdrawal designs, the boys were alternately exposed to conditions with and without talk of their tics. For both boys, vocal tics markedly increased when talk pertained to tics and decreased when talk did not pertain to tics, but motor tic covariance was less consistent.

DESCRIPTORS: habits, tics, Tourette's syndrome, functional assessment

Tourette's syndrome (TS) is a neurobehavioral disorder that consists of multiple motor and vocal tics and has a prevalence rate of 0.04% to 0.05% (American Psychiatric Association, 1994). Although environmental variables are rarely viewed as the primary cause of TS (neurochemical or genetic factors are usually cited; Leckman & Cohen, 1999), a growing body of survey and case report research has described several variables that may exacerbate the tics in TS. Examples include watching television, being alone, attending social gatherings, experiencing stressful situations, and exposure to or participation in tic-related talk (Leckman & Cohen,

1999). Each of these variables has potential clinical significance, but tic talk is particularly important because it almost always occurs in the clinical assessment of tics. If tic talk is indeed reactive, some cases of TS could be overinterpreted and potentially lead to over-treatment. At present, no experimentally derived data on the relationship between tics and tic talk in TS have been published.

METHOD

Participants

Ryan was a 16-year-old Caucasian boy of normal intelligence who had been exhibiting symptoms of TS since the age of 2 years. According to the Hopkins Motor/Vocal Tic Scale (HMVTS; Walkup, Rosenberg, Brown, & Singer, 1992), Ryan fell in the moderate range of tic severity. Ryan had co-

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morbid diagnoses of obsessive compulsive disorder (OCD), attention deficit hyperactivity disorder (ADHD), major depression, and nicotine dependence. Throughout the study, Ryan was taking haloperidol (1 mg) and fluoxetine (20 mg).

Gary was a 6-year-old Caucasian boy of normal intelligence who had been exhibiting symptoms of TS since the age of 4 years. He fell within the mild to moderate range of tic severity on the HMVTS. Gary had comorbid diagnoses of OCD and ADHD. Throughout the study, Gary was taking fluvoxamine (37.5 mg) and divalproex (375 mg). Both boys were reported to exhibit numerous motor and vocal tics throughout the day.

Procedure

Data collection. All data collection took place in a room (3 m by 3 m) with a table and two chairs. All sessions were recorded with a videocamera placed behind a one-way mirror. Participants were aware of the videotaping. For both phases, motor and vocal tics were scored separately using a partial-interval scoring method. A 10-s interval was used for Ryan, and a 15-s interval was used for Gary. For Ryan, motor tics were defined as rapidly bringing the elbows together, foot stomping, and arm flapping above the head. Vocal tics were defined as shouting, swearing, and making socially inappropriate comments. For Gary, motor tics were defined as hard eye blinking, shoulder jerking, and finger stretching. Vocal tics were defined as throat clearing, sniffing, and grunting. The percentage of intervals with motor and vocal tics was separately calculated by dividing the number of intervals with tics by the total number of intervals and multiplying by 100%.

Interobserver reliability. A second observer scored all sessions. Reliability was calculated for each category of tic (motor or vocal) under each condition. For each segment, reli-

ability was calculated by dividing the smaller number of intervals with tics by the higher number of intervals with tics and multiplying by 100%. Motor tic reliability was 95% (range, 66% to 100%) for Ryan and 95% (range, 91% to 100%) for Gary. Vocal tic reliability was 89% (range, 97% to 100%) for Ryan and 90% (range, 84% to 100%) for Gary.

Conditions. Although different withdrawal designs were used for each boy, the within-condition procedures remained the same. During each condition, 5 to 7 min of data were collected. In the A conditions the clinician discussed a non-tic-related topic with each boy. Examples of questions asked during these conditions included "What types of things do you do after school?" or "Tell me about your family pet." This was followed by the tic-talk condition, in which the client and clinician discussed tic-related topics including, but not limited to, descriptions of motor and vocal tics, a description of antecedents to the tics, and the negative social effects of the tics. Examples of questions asked during these conditions included "Try to tell me what your tic looks like," and "Do you have any feelings right before you tic? Please tell me about them." During both conditions, the clinician ignored any tics exhibited by the boys. All trials were embedded within therapy sessions for other issues and were conducted at varying times throughout the session. For Ryan this AB sequence was conducted twice during the 1st of 3 days. On Days 2 and 3, the AB sequence occurred only once. For Gary, an ABAB design was conducted in one session.

RESULTS AND DISCUSSION

The top panel of Figure 1 shows that vocal tics were substantially increased during tic-talk conditions and decreased during non-tic-talk conditions for both boys. The bottom panel, however, does not show a

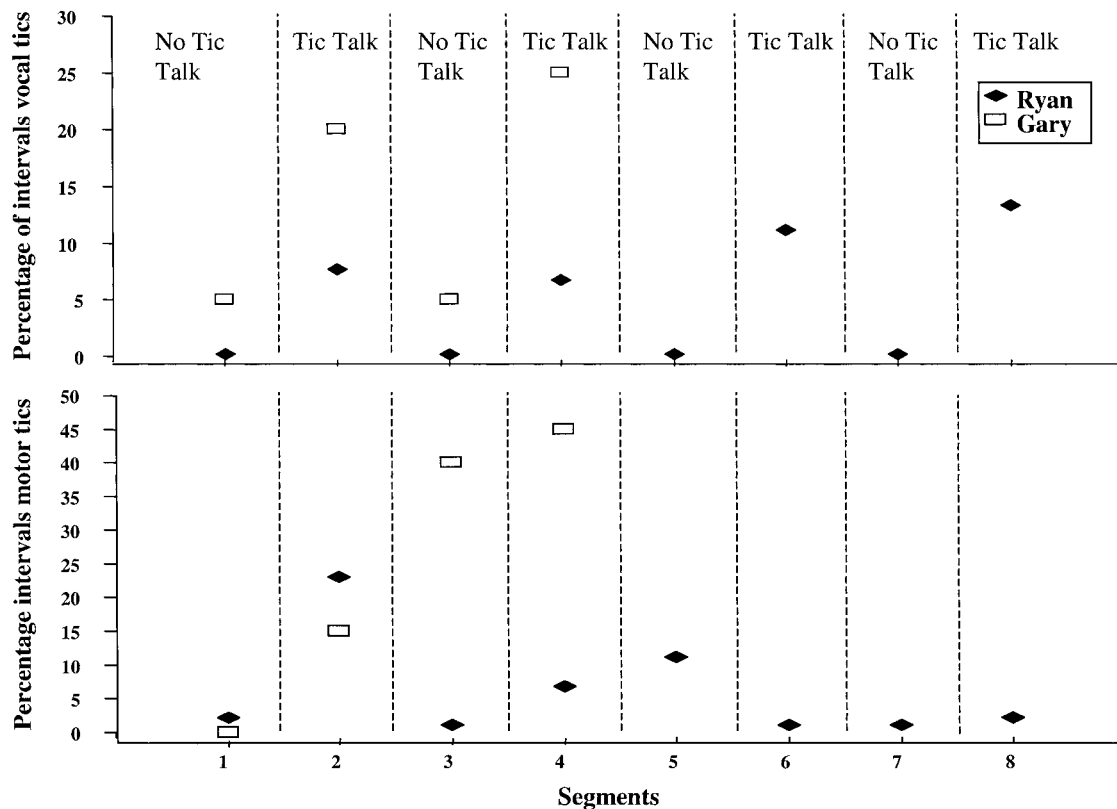


Figure 1. Percentage of intervals with vocal and motor tics across 5- to 7-min observational segments recorded under tic-talk and no-tic-talk conditions for Ryan and Gary.

clear relationship between tic talk and motor tics for either boy. These data support the reactive effect of tic talk on vocal tics, but the effect of tic talk on motor tics remains unclear.

This study contributes to the literature on TS in at least three ways. First, it adds experimental data supporting the relationship between environmental variables and the expression of tics in TS. Second, the findings may be useful to clinicians who are either uninformed or uncertain about the potentially reactive effects of tic talk on tics in TS. Although this study involved only 2 participants, the reactive effects of tic talk on vocal tics were readily apparent in both. If these findings are replicated in larger studies, they may serve as a source of caution for clinicians who rely on observations or reports of

vocal tics that occur in situations accompanied by tic talk. Third, the experimental methods used here provide a template for other investigations of environmental influences on TS symptoms. As indicated, these methods can be conducted efficiently within an outpatient therapy setting.

Evaluation of these contributions should be tempered by consideration of some limitations in the study. For example, the study included only 2 participants, which limits its generality. It obtained only one data point per session, which prohibits an analysis of trends within conditions. The study did not address the question of how tic talk influenced tic expression, which limits us to mere speculation about why the talk influenced vocal tics more than motor tics. For example, perhaps the differential effects were due

to the topographical similarity between tic talk and vocal tics. Lastly, the study did not systematically collect information on clinician behavior. Although clinicians did not react to tics in either condition and the time available for participant responses appeared to be equal across conditions, data on procedural integrity would bolster confidence in our findings.

In conclusion, this study provides some modest experimental evidence of the reactive role of tic talk on tics in TS, which was previously based solely on clinical impressions and surveys. Through its use of the ABAB design, the study contributes experimental data to the small literature on the relationship between environmental events and TS and introduces behavior analysis as a means

of studying tics in TS. In a small but potentially valuable way, the study adds to the clinical picture of TS and to the armamentarium of the scientific methods used to study it.

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