Parents often use vocal responses to control their child's behavior; most analyses of vocal controls have only examined the verbal content of those controls. To examine the roles of content and form (pitch, loudness) within vocal controls, 32 parents responded to their child's apparent performance. Parents received information about their child's performance on a computer screen. Each performance message was repeated 12 times, resulting in 60 trials, and the parents' vocal responses were tape-recorded. As expected, the content of parents' responses was logically related to their child's performance. Pitch, loudness, and duration increased as errors and misbehaviors were repeated. Changes in the vocal effector system (fatigue) were eliminated as explanations of the observed results. Results indicated that form is an independent and important component of parents' vocal controls. (Author/MDM)
What parents tell their children:

More than words can say

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Parents often use vocal responses to control their child's behavior; most analyses of vocal controls have only examined the verbal content of those controls. To examine the roles of content and form (e.g., pitch, loudness) within vocal controls, 32 parents responded to their child's apparent performance. As expected, the content of parents' responses was logically related to their child's performance. Pitch, loudness, and duration increased as errors and misbehaviors were repeated. Changes in the vocal effector system (i.e., fatigue) were eliminated as explanations of the observed results. Thus, form is an independent and important component of parents' vocal controls.
Parents control their children's behaviors in various ways: vocal controls are among the most frequently reported (e.g., Kohn, 1960; Wood & Passman, 1985; Zahn-Waxler & Chapman, 1982). Parents often report using induction (e.g., Chapman, 1979; Grusec, Dix, & Mills, 1982), or explanations of their reasons for specific behavior. It has been suggested that induction is effective because it provides children with information and choice, both of which facilitate compliance by enhancing self-esteem (e.g., Walters & Parke, 1967). Parents have also reported, however, that one result of reasoning with a child "is a child who will reason back at you" (Kuczynski, Kochansak, Radke-Yarrow, & Girnius-Brown, 1987, p. 805). Thus, others have suggested that induction may be effective because of past experience or tone of voice (e.g., Henry, 1980; Schaffer & Crook, 1979). Tone of voice provides information about the speaker's emotional state (Scherer & Bergman, 1984) and it may be that children more readily respond to parental reasoning when their parents are angry.
To examine the contribution of tone of voice or vocal form, 16 mothers and 16 fathers responded to their child's apparent performance on problems that required the child to make choices until the problems were solved. Parents and children were separated and then parents received information about their child's performance (performance messages) on a computer monitor. Parents were asked to respond, via a headset with microphone, using a limited response set. The performance messages and responses are given in Table 1. Each performance message was repeated 12 times; thus parents received 60 trials. For the first and the last repetitions of each message (pre- and post-manipulations, respectively), parents were told that they were not responding to their child. The performance presented to parents during manipulations (10 repetitions per message) was a preprogrammed randomized sequence of successes, errors, and misbehaviors. Parents responses were tape-recorded and form was measured by mean fundamental frequency, $F_0$, mean intensity, $\text{dB}_x$, and duration.
It was expected that the content of parents' responses would be logically related to their child's performance. In previous research, the intensity of parents' nonvocal responses increased as their child made proportionately more errors (e.g., Passman & Mulhern, 1977); it was therefore predicted that $F_0$, dB, and duration would increase as children continued to make mistakes and misbehave.

The content of parents' responses was related to their child's performance. As can be seen in Table 2, parents always said "Very good" when informed that their child had solved a problem. Parents most often told their child, "Keep working" (84.1%), when informed that the child wanted to stop or, "Choose one" (75.6%), when informed that their child did not make a choice. The most frequent response for "Incorrect choice" was "That's incorrect" (68.4%) and for "Not attending", "Pay attention" (68%). Infrequent responses were also related to performance (e.g., 32% of the responses to "Not attending" were "Keep working" or "Choose one").

Given the likelihood of relationship among the vocal form measures, MANOVA techniques were employed to
analyze form. There were three major analyses of form, and alpha was adjusted accordingly (i.e., .05/3, or approximately .0165). Parents' pre- and post-manipulation responses were compared to provide a control for fatigue. This analysis yielded several significant results: some were trivial (i.e., mothers and fathers had significantly different $F_0$; $F(1, 28) = 57.14, p<.0165$), others were not (i.e., duration was longer for same-sex children than for opposite-sex children: $F(4, 122) = 5.58, p<.0165$), but none of the results were consistent with vocal system fatigue. Thus differences obtained during, or in comparison to manipulations could not be attributed to fatigue.

The second analysis compared mean pre-/post-manipulation responses and with mean manipulation responses; the means are given in Table 3. This comparison indicated that manipulation responses were longer, $F(1, 28) = 32.69, p<.0165$; louder, $F(1, 28) = 7.84, p<.0165$; and had higher $F_0$, $F(1, 28) = 47.60, p<.0165$; than pre-/post-manipulation responses. The third comparison examined parents' responses during
manipulations and indicated, as Figures 1 through 3 show, that parents' responses became louder,

\[ F(36, 983) = 3.62, p < .0165, \]
\[ F(36, 983) = 2.06, p < .0165, \]
\[ F(36, 983) = 3.25, p < .0165, \]

as errors or misbehaviors were repeated; no differences, however, were found for successes. Thus, parents responded differently when they believed they were actually responding to their children, parents responded differently to errors than successes, and the form of their responses to misbehaviors and errors changed as those errors and misbehaviors were repeated.

In summary, and consistent with the findings of others (e.g., Grusec et al, 1982), parents' responded differently to their child's successes than to their child's errors or misbehavior. As children continued to misbehave, despite their parents' efforts, parents used longer, louder, and higher pitched, or more intense vocal controls (Passman & Mulhern, 1977; Vasta & Coppitch, 1981). The information conveyed by increased intensity is independent of content (Scherer & Bergman, 1984) and the finding that intensity increased as misbehavior recurred supports the
suggestion that tone of voice is important. Intense inductions may not be inductive (e.g., Henry, 1980), but imperative (e.g., Kucynski et al, 1987). Thus, what parents tell their children is more than the words that parents use -- how those words are said may well be important.
What Parents Say

References


### Performance Messages and Responses

<table>
<thead>
<tr>
<th>Message</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Attending</td>
<td>Pay Attention</td>
</tr>
<tr>
<td>Problem Solved</td>
<td>Very Good</td>
</tr>
<tr>
<td>No Choice</td>
<td>Choose One</td>
</tr>
<tr>
<td>Incorrect Choice</td>
<td>That's Incorrect</td>
</tr>
<tr>
<td>Wants to Stop</td>
<td>Keep Working</td>
</tr>
</tbody>
</table>
Table 2

Response Frequency per Message: Manipulation

<table>
<thead>
<tr>
<th>Message</th>
<th>0</th>
<th>PA</th>
<th>VG</th>
<th>CO</th>
<th>TI</th>
<th>KW</th>
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</thead>
<tbody>
<tr>
<td>NA</td>
<td>4</td>
<td>219</td>
<td>0</td>
<td>28</td>
<td>0</td>
<td>69</td>
</tr>
<tr>
<td>PS</td>
<td>0</td>
<td>0</td>
<td>320</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NC</td>
<td>15</td>
<td>10</td>
<td>4</td>
<td>242</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>IC</td>
<td>4</td>
<td>5</td>
<td>0</td>
<td>33</td>
<td>240</td>
<td>38</td>
</tr>
<tr>
<td>WS</td>
<td>0</td>
<td>18</td>
<td>10</td>
<td>22</td>
<td>1</td>
<td>269</td>
</tr>
</tbody>
</table>

Note: Messages are abbreviated as follows: NA = Not Attending, PS = Problem Solved, NC = No Choice, IC = Incorrect Choice, WS = Wants to Stop. Responses are abbreviated as follows: PA = Pay Attention, VG = Very Good, CO = Choose One, TI = That's Incorrect, KW = Keep Working. 0 = No response.
Table 3

Mean Measurements by Condition of Parents' Responses to Performance Messages.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Measure</th>
<th>Pre M</th>
<th>Post M</th>
<th>Manipulation M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F0x</td>
<td>153.58</td>
<td>156.91</td>
<td>170.00</td>
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<td></td>
<td>Dbx</td>
<td>38.83</td>
<td>39.20</td>
<td>40.18</td>
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<tr>
<td></td>
<td>Duration</td>
<td>0.87</td>
<td>0.90</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Note: F0x is in cps, Dbx is in decibels (dBA SPL), and Duration in is seconds.
What Parents Say
What Parents Say

Figure 2

dB$_x$ by Performance Messages and Repetition during Manipulations

- Not Attending
- Problem Solved
- No Choice
- Incorrect Choice
- Wants to Stop
Figure 3

Duration by Performance Messages and Repetition during Manipulations

- Not Attending
- Problem Solved
- No Choice
- Incorrect Choice
- Wants to Stop