A comparative investigation of the speech-associated coping responses reported by adults who do and do not stutter

Martine Vanryckeghem*, Gene J. Brutten, Nizam Uddin, John Van Borsel

Department of Communicative Disorders, University of Central Florida, HPA-2 Suite 101, P.O. Box 162215, Orlando, FL 32816-2215, USA
Department of Statistics and Actuarial Science, University of Central Florida, Orlando, FL 32816, USA
Ghent University Hospital, Ghent, Belgium

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Abstract

The Behavior Checklist, a self-report test procedure, was administered to 42 adults who stutter and 76 who do not in order to investigate the number, frequency of usage, type and nature of the responses that they reportedly employ to cope with the anticipation and/or presence of speech disruption. As a group, the participants who stutter reported a significantly greater number of speech-associated coping responses and a greater use of them than their nonstuttering peers did. Moreover, factor analysis made apparent fundamental between-group differences in the type and nature of certain forms of the coping responses reported by those who stutter and those who do not. This suggests that the quantitative and qualitative differences in the coping responses of those who do and do not stutter are potentially useful with respect to differential diagnostic and therapeutic decision making.

Educational objectives: (1) The reader will be able to describe differences in the number, frequency and types of coping behaviors used by PWS and PWNS. (2) The reader will be able to list similarities and differences in the type and nature of coping behaviors used by PWS and PWNS. (3) The reader will be able to discuss the features and use of the Behavior Checklist, a self-report procedure for assessing the responses used by adults to cope with the anticipation and occurrence of speech disruption.

Keywords: Behavior Checklist; Secondary behaviors; Accessory behaviors; Speech-associated behaviors; Coping responses

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* Corresponding author.
E-mail address: martinev@mail.ucf.edu (M. Vanryckeghem)

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Froeschels (1921), Bluemel (1932) and Van Riper (1954) were among the first to describe the behaviors that characterize stuttering in an attempt to distinguish the ‘primary’ speech disruptions of sound and syllable repetition and prolongation from the ‘secondary’ adjustive responses that they thought reflected the attempts of those who stutter to cope with the anticipation and/or occurrence of speech disruption. Later, in a somewhat similar fashion, Wingate (1964, 1976) distinguished between the core aspects of stuttering and its accessory features.

Van Riper has described the so-called secondaries of persons who stutter as a collection of behaviors that are “as unique as their fingerprint” (Van Riper, 1982, p. 112). However, this contention was not supported by the data of the molecular studies of stuttering moments (Brutten, 1975). They have shown that the composition of the behaviors in stuttering moments is more like a mixture than a compound in that their elements and their order tend to differ each time stuttering occurs (Krych, 1978; Krych & Brutten, 1979; Zenner, 1971; Zenner, Webster and Fitzgerald, 1974).

It was Barr who pioneered research designed to descriptively investigate “the events observable during those discrete moments of behavior which are regarded as examples of stuttering” (Barr, 1940, p. 277). She sought to determine whether or not a given person’s pattern of stuttering is consistent from one moment to another and if individual differences exist among those who stutter with respect to the behaviors displayed during stuttering moments. In regard to these matters, Barr found that the behaviors that comprised stuttering moments were neither fully alike for any one of her participants who stuttered nor identical for any two of them. She noted that the stuttering moments of her participants involved a mixture of different behaviors whose composition varied from time to time. They were not composed of a constant and unique compound of behavioral elements.

Some three decades later, Prins and Lohr (1968, 1972) once more studied the elements that comprise stuttering moments. Frame by frame analysis of the visible phenomena evidenced in the oro-facial area during stuttering confirmed Barr’s findings. Specifically, they found that the audible and visible components of stuttering moments did not cluster or sequence in a way that was constant. In addition, Prins and Lohr’s factor analysis showed that the elements of stuttering moments fundamentally separated into two classes of behaviors. They pointed out that this finding was consistent with Brutten and Shoemaker’s (1967) Two Factor Theory which posited that stuttering moments are made up of combinations of involuntary speech disruptions (i.e. silent and oral repetitions and prolongations of simple and compound phones) and voluntary coping responses of avoidance and escape that are secondary to stuttering (e.g. head turn, arm swing, interjection, circumlocution) rather than a part of it.

Bakker and Brouwer (1983, 1984) noted that secondaries observed by Prins and Lohr were limited to those that occurred in the oro-facial region during stuttering. They felt the need to more broadly study the adjustments of those who stutter, since secondary coping responses can involve any part of the body and also occur in the absence of dysfluency. As a result, they administered the 95-item Behavior Checklist (Brutten, 1974) to 464 persons who stutter (PWS). Their analysis of the Behavior Checklist (BCL) items that described “movements or fixations of body structures that were not specific to the act of speaking” (Bakker & Brouwer, 1984, p. 3), such as head movement, finger tapping, arm swinging, showed that there were considerable individual differences in the quantity of the secondaries that the people who stutter reported. Moreover, Bakker and Brouwer found that the particular
secondaries that those who stutter used to cope with speech disruption differed from person to person. This led Bakker and Brouwer to conclude that the secondaries of those who stutter need to be seen in a behaviorally molecular way that distinguishes one coping response from another rather than in a molar fashion which masks the difference in their forms.

It has been held that the accessory behaviors of those who stutter are learned coping responses of avoidance and escape that are secondary to the anticipation or occurrence of stuttering rather than a constituent element of it (Bruten, 1975; Bruten & Shoemaker, 1971). However, Kraaimaat and Janssen (1985) have pointed out that support for this contention is somewhat limited since it rests predominantly on studies which have shown that secondaries can be brought under stimulus control (Bruten & Shoemaker, 1967; Martin & Siegel, 1966a, 1966b). In addition, Kraaimaat and Janssen (1985) pointed to both Lanyon’s (1978) suggestion that at least certain nonverbal accessory behaviors might be a result of speech-associated physical struggle and their own contention that some secondaries could be a physical result of classically conditioned speech anxiety (Janssen & Kraaimaat, 1986). In any event, Kraaimaat and Janssen’s (1985) investigation of the oro-facial structure of the segments of their participants’ speech that was fluent, normally disfluent or stuttered led them to conclude that “the actual function of the nonverbal behaviours emitted by stutterers is not fully clear” (p. 16).

The lack of clarity as to the role and function of accessory behaviors that are secondary to stuttering is undoubtedly a result of the fact that there have been relatively few relevant investigations of these behaviors. Conture (2001) has highlighted this by saying that the reason we still do not understand the amount and nature of the secondary behaviors associated with stuttering is because there is “very little objective information regarding these behaviors” (p. 89). We appear to know even less about the coping responses that those who do not stutter use to deal with the speech disruptions that occasionally occur in their speech (Conture, 2001; Conture & Kelly, 1991). This despite the fact that the between-group difference in the number, usage frequency, types and nature of the coping behaviors of people who stutter and those who do not (PWNS) might well be useful relative to differential diagnostic determinations (Schwartz & Conture, 1988) and might provide particularly meaningful insight into the differential effect of therapy tactics (Bruten & Shoemaker, 1971; Eichstädt, Watt, & Girson, 1998; Janssen & Bruten, 1973).

It was the limited knowledge about the number, frequency, types and nature of coping responses associated with speech disruption made by those who stutter and those who do not that led to the present study. Specifically, it was the purpose of this investigation to provide between- and within-group analyses of the particular secondary adjustments that they reportedly employ as a means of coping with the anticipation and/or presence of speech disruption. The focus of this study was on these speech-associated coping responses because they are commonly held to be the most typical forms of secondaries (Kraaimaat & Janssen, 1985).

1. Method

In order to comparatively investigate the speech-associated coping behaviors employed by people who stutter and those who do not, the Dutch version of the updated Behavior
Checklist (Brutten & Vanryckeghem, 2003a), was administered to 42 stuttering and 76 nonstuttering adults. In each group the age of the participants ranged from 17 to 50 and their mean age was 29 years 2 months (S.D. = 10 years 3 months and 9 years 9 months, respectively). Thirty-three of the PWS were male and nine were female. They came from private clinics and clinical centers throughout the Flanders region of Belgium, and each of them was in therapy at the time of data collection. According to their clinicians, the forms of therapy that the PWS received ranged from relaxation and desensitization to stuttering modification and fluency enhancing techniques. Reportedly, therapy very rarely involved any specific attention to secondary coping responses or direct means of eliminating them. The PWNS, 34 males and 42 females, were a representative sample of the population found in the different Flemish provinces. They came from various walks of life and background. None of them reported a history of speech and/or language disorders.

The BCL administered to the study’s participants is a test procedure that has long been used by clinicians and researchers (Bakker & Brouwer, 1983, 1984; Brutten, 1970, 1973; Brutten & Vanryckeghem, 2003a). Its items, which came from the case files of those who stutter in a wide variety of clinical settings, describe various forms and types of responses that clients reportedly have used to avoid the expectation of speech disruption or to escape its occurrence. On the face of it, therefore, there is reason to view the BCL as having content validity and to measure what it purports to measure. It may also be said that the BCL has criterion-related validity (Kerlinger, 1986) in that its scores have been shown to correlate significantly with measures of negative emotion and speech disruption (Brutten & Vanryckeghem, 2003a).

The coping responses listed in the BCL, examples of which are shown in Appendix A, cover all regions of the body and include both non-verbal and verbal behaviors. The BCL instructions, which are also found in Appendix A, are designed to make it clear to respondents that they have two different tasks. They are first to look at all of the items in column I of the checklist and to indicate which, if any, of the 95 behaviors described are ones that they currently use to help themselves when trouble producing a sound, syllable or word is anticipated or when they actually have difficulty getting them out. Then, the respondent is asked to move on to column II of the BCL and to indicate, along a five point scale, the relative frequency (1 = very infrequently, 5 = very frequently) with which they tend to use the particular coping responses that they checked-off in column I. As the instructions make clear, a scaled response indicative of frequency of usage should only be given for those coping responses that are reported in column I.

The participants of this investigation were individually administered the BCL. The same instructions were read aloud to both the PWS and PWNS by the administrator as they followed along silently. To put aside any doubts about what they were to do, the participants were told that they “should not check a behavior in column I as something you use when speaking if the reasons for its use are for the purpose of emphasis, to correct a mispronunciation or as a means of making your point in a clearer or more appropriate manner. In other words, the questionnaire is not asking if, like many people, you use your hands when you talk to illustrate your feelings, or purse your lips when in doubt about something or shake your head to indicate that you disagree. You are only to check behaviors described in column I if you use them as a speech aid or helper to get a sound, syllable or word come out or to try and stop them from being excessively repeated or prolonged”. Then they
were asked if they had any questions about what they were to do. If they indicated that they understood and did not have any questions, they were instructed to fill out the questionnaire in the manner described above.

2. Results and discussion

2.1. Data analyses related to column I of the Behavior Checklist

The BCL column I score, which can range from 0 to 95, reflects the total number of different coping adjustments reported by a respondent. In this investigation, the response of the experimental and control groups to the speech-associated adjustments that make up the items of the BCL differed numerically. Specifically, the median number of different coping behaviors secondary to the anticipation or occurrence of speech disruption reported by the adults who stutter was 18. It was only three for those who do not. Furthermore, the mode was 10 for the participants who stutter and but 2 for those who do not. The considerable difference in these central tendency measures of the total number of different coping responses reported by the members of the two samples is noteworthy, though not surprising, given that more speech disruption is generally found among those who stutter than those who do not (Table 1). That is to say, adults who stutter have a greater opportunity to use speech-associated coping behaviors than those who do not stutter simply because of the greater frequency with which their speech is disrupted.

The range of the participants’ BCL scores also helps highlight the between-group difference in the total number of coping responses that those who stutter and those who do not use to help themselves deal with the anticipation or occurrence of speech disruption. The total number reported by the participants who stutter ranged from a low of 6 to a high of 59. In contrast, the range for the PWNS was 0–28. Moreover, while none of the PWS reported that they used less than six different kinds of coping responses, nine of the PWNS (12%) reported that they did not use any speech aids.

To determine if the between-group difference in the total number of different coping responses was likely a real rather than a chance difference, the mean number reported by the sample of adults who stutter ($M = 20.79$, S.D. = 11.39) was compared with that of those who do not ($M = 5.38$, S.D. = 5.56) by means of a $t$-test for independent samples that have unequal variance. The difference in the average total number of coping responses reportedly used by the two groups of participants proved to be statistically significant ($t (113) = 7.977$,

<table>
<thead>
<tr>
<th>Table 1</th>
</tr>
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<tbody>
<tr>
<td>Measures of central tendency and variation for the total number of speech-associated coping responses reported by people who stutter and people who do not stutter</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Mean</td>
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<tr>
<td>Standard deviation</td>
</tr>
<tr>
<td>Median</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
</tbody>
</table>
Table 2
A comparison of the Top 10 coping behaviors of people who stutter and people who do not stutter

<table>
<thead>
<tr>
<th>Rank</th>
<th>Item number</th>
<th>Description</th>
<th>Percent</th>
<th>Item number</th>
<th>Description</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>83</td>
<td>Substitute one word for another</td>
<td>82</td>
<td>83</td>
<td>Substitute one word for another</td>
<td>28</td>
</tr>
<tr>
<td>2</td>
<td>69</td>
<td>Pause before trying to say a feared word</td>
<td>72</td>
<td>1</td>
<td>Touch your hair</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>33</td>
<td>Avoid eye contact</td>
<td>64</td>
<td>33</td>
<td>Avoid eye contact</td>
<td>21</td>
</tr>
<tr>
<td>4</td>
<td>76</td>
<td>Repeat a syllable, like ‘ah, ah, ah’ or ‘the, the, the’ before saying a feared word</td>
<td>64</td>
<td>79</td>
<td>Pretend that you are thinking about something</td>
<td>20</td>
</tr>
<tr>
<td>5</td>
<td>77</td>
<td>Use a starting phrase, like ‘let me see’, or ‘well now’ before saying a feared word or sentence</td>
<td>59</td>
<td>8</td>
<td>Wrinkle your forehead</td>
<td>17</td>
</tr>
<tr>
<td>6</td>
<td>74</td>
<td>Silently rehearse a sound, word or phrase</td>
<td>56</td>
<td>32</td>
<td>Look away</td>
<td>17</td>
</tr>
<tr>
<td>7</td>
<td>78</td>
<td>Pretend that you don’t know the answer</td>
<td>56</td>
<td>49</td>
<td>Move your hand(s)</td>
<td>17</td>
</tr>
<tr>
<td>8</td>
<td>37</td>
<td>Take a deep breath before speaking</td>
<td>54</td>
<td>76</td>
<td>Repeat a syllable like ‘ah, ah, ah’ or ‘the, the, the’ before saying a feared word</td>
<td>17</td>
</tr>
<tr>
<td>9</td>
<td>82</td>
<td>Omit (a) particular word(s)</td>
<td>51</td>
<td>77</td>
<td>Use a starting phrase like ‘let me see’ or ‘well now’ before saying a feared word or sentence</td>
<td>17</td>
</tr>
<tr>
<td>10</td>
<td>32</td>
<td>Look away</td>
<td>49</td>
<td>43</td>
<td>Sigh</td>
<td>14</td>
</tr>
</tbody>
</table>

This result is consistent with the fact that the average number of speech-associated coping responses reported by PWS was essentially three standard deviations above that of their nonstuttering peers. The extent of this between-group difference in the number of helpers used to cope with speech disruptions suggests that we are looking at the response of members of two different populations rather than at a response continuum among members of one population.

Despite the significant statistical difference in the total number of coping responses reported by our two samples, Table 2 makes it evident that the groups tended to employ at least some of the same adjustive tactics. Among the ten most reported coping responses that the members of the two groups used to help themselves, five were alike in kind. Both the PWS and the PWNS reported that they substituted words (82% versus 28%), avoided eye contact (64% versus 21%), looked away (49% versus 17%), interjected the sound ‘ah’ or the word ‘the’ (64% versus 17%) and used a phrase like ‘let me see’ or ‘well now’ (59% versus 17%).

1 This statistically significant difference cannot be attributed to the fact that there were more men in the sample of PWS than there were in the sample of PWNS because, on average, the nonstuttering women reported more in the way of speech aids than the men did.
Coping responses like substituting one word for another or the use of a postponing phrase such as ‘let me see’, have long been known as some of the common ways in which normally fluent people deal with their occasional speech disruptions. Interjected sounds, words and phrases are also a part of the communicative repertoire that people use as a means of ‘holding the floor’. They indicate that the person talking has not yet given up his/her turn as the speaker. These tactics may be particularly useful to those who stutter because they can provide the time needed to cope with speech disruption. In any event, people who stutter are thought to imitate these and other coping responses that are commonly used by nonstutterers because they help camouflage the difficulty they are having with their speech (Bloodstein, 1995).

Although the PWS and the PWNS used some of the same coping responses, albeit to a different extent, they differed with respect to those that they most often used as a means of dealing with the anticipation or presence of speech disruption. In this regard, Table 2 makes it apparent that five of the coping responses that were most reported by those who stutter were not among the ten most reported by the PWNS. These include pausing before a feared word (72% versus 12%), silently rehearsing a sound, word or phrase (56% versus 12%), pretending not to know an answer (56% versus 9%), taking a deep breath before speaking (54% versus 9%) and omitting particular words (51% versus 1%). That is to say that the difference between the two groups of participants involved more than the total number of different aids they used. They also showed a notable difference in the type of coping responses that they were most likely to use as an aid in speaking.

2.2. Analysis related to column II of the Behavior Checklist

The responses of the participants to column II of the BCL highlights the relative frequency with which they used the coping behaviors reported in column I. The difference in usage frequency was made apparent by an analysis in which a zero was assigned to BCL items that were not used as a coping response and a 1 (very infrequently) to 5 (very frequently) depending on the extent to which they were employed. The results of this analysis indicated that, in general, the most frequently used coping responses of the PWS were substituting one word for another (2.97), pausing before trying to say a feared word (2.45) and repeating an interjected syllable like “ah” or “the” before saying a feared word (2.26). In contrast, the speech aids that the PWNS tended to use most frequently were word substitution (.63), hair touching (.58) and hand movement (.57). In other words, except for word substitution, the type of coping behaviors that they most frequently depended upon were different from those of the PWS sampled. Moreover, it is noteworthy that those who do not stutter tended to rarely employ even their most commonly used coping responses.

2.3. Factor analyses: underlying dimensions of the coping responses of the subject groups

Clearly, the difference between those who stutter and those who do not may involve more than the total number of coping responses they employ and the relative frequency with which different types of them are used. The dimensions that underlie the coping responses of the two groups might also differ. Factor analysis using a principal component procedure and a
3% inclusion criterion was used to examine this possibility. That is to say that a factor was retained if it accounted for at least 3% of the variance found among the coping responses. With this inclusion criterion, factor analysis of the speech aids that PWS used to cope with the anticipation or presence of speech disruptions led to the uncovering of 11 factors that accounted for 64.12% of the total variance. Varimax rotation was then employed to find the variance explained by each of the 11 orthogonal factors.

For the adults who stutter, two broad factors appear to account for most of the variance. General body movements of one kind or another (factors 1 through 4 as well as 6 and 7) accounted for 40.15% of the total variance while coping responses that related to manner of speaking rather than body movements (factors 5 and 8 through 11) explained 23.97%.

As it relates to coping responses that involved body movements, Factor 1, which accounted for 9.97% of the variance, primarily involved the head, fingers and body. Factor 2, which explained 7.07% of the variance, predominantly reflected the use of hand and leg movement. Factor 3, which primarily involved nose, tongue, foot and toe movements, accounted for 6.49% of the variance. The coping responses brought together in Factor 4, which primarily involved the sideways movements of the jaw, tongue, lips and hand, accounted for 5.81% of the variance. Tongue clicking, arm swinging, head raising or shaking and movement of the leg(s) to the side clustered together to form factor 6 while touching of hair, chin and nose came together to form factor 7. The latter two factors explained 5.65 and 5.18, respectively, of the total variance present among the coping responses of PWS.

Factors 5 and 8 through 11, differed from the aforementioned clusters of coping responses in that they did not involve general body movements. Factor 5, which explained 5.73% of the variance, brought together speech-associated coping responses like pretending to be thinking about what to say, indicating that the answer to the question asked is not known or by using a starter phrase like ‘let me see’ in order to avoid or postpone saying a reportedly feared word or sentence. Factor 8, which accounted for 5% of the variance, was characterized by changes in manner of speaking. Here the coping responses of those who stutter included speaking in a sing-song fashion, talking loudly and whispering. Factors 9 and 10, which accounted for 4.57 and 4.37% of the variance, respectively, also involved a change in the speaker’s normal manner of talking. Lip smacking and lip protrusion were the predominant coping responses that clustered together in the former of these two factors while in the latter one they primarily involved letting air out before speaking, pushing air out by tightening the abdomen and breath holding. Factor 11, the last cluster of coping responses that met our inclusion criterion, also accounted for 4.31% of the variance. It brought together speech aids like sound and word omission and the breaking up of words into separate parts.

In contrast to the factor analysis findings that relate to the secondary responses of the PWS, the speech aids that PWNS reported using in order to cope with speech disruption

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2 A 3% criterion was used as an acceptable alternative to an eigen-value of one, because it accounted for a desirable proportion of the sample’s total variance, a heuristic approach consistent with applied research (Johnson & Wichern, 1982) and because an eigen-value or Kaiser criterion of 1 (Kaiser, 1960) would have resulted in 25 rather than 11 factors. Moreover, the increase in 14 factors would provide only a 28% increase in accounted for variance and lead to questionable hypothetical factors.

3 Five out of 95 items had zero variance and thus were not included in the factor analysis of the coping responses reported by the PWS.
separated into factors that only involved different families of body movements. Though the body movements that clustered together on each of the separate factors loaded less strongly among the PWNS than they did for the participants who stutter, the factors were descriptively similar for the two groups. For the PWNS, six factors explained 44.06% of the total variance in the coping responses.

To understand more fully the between-group difference made evident by the factor analyses, it is important to note that while the 11 dimensions of the coping responses of the PWS accounted for 64.12% of the total variance, the factors that came to the fore among the PWNS explained only 44.06%. This difference in explained variance is to a great extent the result of the fact that 20.06% of the variance found among the PWS related to coping responses other than those involving body movements. They related to a change in manner or way of speaking (e.g. pretending not to know an answer or interjecting a starter phrase to avoid a feared word), that did not factor out for the PWNS. Thus, it was the presence or absence of coping responses brought together by factors 5 and 8 through 11 that most clearly distinguished the underlying dimensions of those who stutter from those who do not. The forms of coping responses, which came together only for those who stutter, appear to reflect an approach to the avoidance and escape from speech disruption that is more closely related to the act of speaking than to the use of body movements. In any event, the findings of the present study are not fully in keeping with the preliminary suggestion that it might possibly be “the number rather than the nature of the associated behaviors of people who stutter that represents the main difference between them and . . . their normally fluent peers” (Conture, 2001, p. 90). The current findings suggest that the difference between those who stutter and those who do not involves more than the number of their coping responses. PWS and PWNS also differ in the frequency with which they use them and in their type and underlying nature.

2.4. Suggestions for future investigations

The present study came about both because of the relative void in data that deal with the coping responses of PWS and the absence of information about the speech-associated accessory behaviors of PWNS. It was not designed as an applied investigation that relates directly to diagnostic or remedial matters, important as they obviously are. These issues were outside the basic purpose and design of this investigation. Nevertheless, the results obtained are clinically suggestive. They point to the need for applied research specific to speech-associated coping responses. This is because the current findings imply, in part, that the type and nature of these responses would likely be useful in differential diagnostic and severity determinations. Moreover, the data point to a difference between the type of coping response that involves body movements, that is possibly indicative of a physical attempt to aid in the production of speech and those, like postponing a verbal response or interjecting a phrase such as ‘let me see’, speaking in a sing-song, loud or whispering fashion, that are linguistic in nature and more closely related to the act of speaking.

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4 Seventeen of the BCL items were not reported by the PWNS as describing coping responses that they used to avoid or escape speech disruption. Because of their zero variance they were not included in the factor analysis of this group’s secondaries.
It has long been evidenced that the frequency of the body movements secondary to stuttering like arm swings (Bastijns, Brutten, & Stes, 1978), head turns (Brutten & Shoemaker, 1971) and nose wrinkling (Martin & Siegel, 1966a) can be directly limited or extinguished by response contingent stimulation. However, it is open to question whether or not this tactic is equally effective and efficient with the linguistically-based coping responses related to the act of speaking (Janssen & Brutten, 1973). Direct elimination of these secondaries may require different or additional behavior change procedures since their type and underlying nature appears to be different from those that are body-specific.

Further study is also needed to determine if the present findings with adults are reliable. In addition, it would appear worthwhile to determine if the between-group difference in number, usage, type and nature of the speech-associated coping responses found among adults who stutter and those who do not are also found among children. Toward this end, it would seem worthwhile to consider using the children’s form of the Behavior Checklist (Brutten & Vanryckeghem, 2003b). It would add meaningfully to the measures that are currently being used in the expanding exploration of the secondary responses that children who do or do not stutter make in the anticipation or presence of speech disruption (Conture & Kelly, 1991; Lasalle & Conture, 1991; Schwartz, Zebrowski, & Conture, 1990).

Both the adult and children’s form of the BCL provide a view, from within, of the speech-associated coping responses that speakers employ. As such, it can bring attention to the covert secondaries of speakers that might well be missed by only observing overt responses. The use of the BCL also serves to help put aside the fact that “the act of observation can produce changes in the phenomenon being observed” (Liebert & Langenbach Liebert, 1995, p. 195). That is to say that the direct observation of secondaries by a clinician or researcher can have an effect on its occurrence and form. The possible influence of an outside observer on the measurement of these speech-associated responses would not be an issue if the BCL, a self-report measure, was used. These reasons, among others, point to the utility of the BCL as a means of confirming, broadening and more fully understanding the quantitative and qualitative differences in the secondary responses that might well exist among adults and children who do and do not stutter.

All told, the findings that have resulted from this investigation highlight the importance of responses secondary to stuttering, behaviors that have not previously been given the full attention that they deserve from both a theoretical and clinical point of view. Though these responses are secondary to stuttering, rather than a constituent element of it, the frequency with which they occur, their often aberrant and attention getting nature and the fact that they can interfere with communication all point to the need for a better understanding of their nature and use.

CONTINUING EDUCATION
A comparative investigation of the speech-associated coping responses reported by adults who do and do not stutter

QUESTIONS
1. The secondary coping responses of PWS:
   a. remain relatively constant from moment to moment
   b. do not differ for PWS and PWNS
c. differ from time to time
d. form a compound rather than a mixture
e. are uniquely related to the oro-facial region

2. The frequency with which individual PWS use coping responses:
   a. is always higher than with individuals who do not stutter
   b. is almost the same than with PWNS
   c. is typically lower than among PWNS
   d. none of the above

3. Self-reports of coping responses by those who stutter are:
   a. less likely than direct observation to make covert secondaries apparent
   b. more likely than direct observation to make covert secondaries apparent
   c. objective means for obtaining information relative to coping responses
   d. a good means of obtaining an inventory based on the perception of the PWS
   e. b + d

4. The secondary coping responses of PWS:
   a. differ in amount from PWNS
   b. differ in type from PWNS
   c. differ in their underlying nature
   d. differ in frequency of usage
   e. all of the above

5. Secondary coping responses are:
   a. a fundamental part of stuttering
   b. a behavior accessory to stuttering
   c. according to the two-factor theory: voluntary behaviors
   d. only related to the occurrence of stuttering and not its anticipation
   e. b + c

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Appendix A. Behavior Checklist©, 2003 Gene J. Brutten

People may do various things in order to help their speech. Sometimes they might use speech aids or helpers because they expect trouble with a sound or word or are having difficulty getting them out. By means of this questionnaire you are being asked whether or not you currently use the speech aids described, when you are getting ready to speak or are speaking, in order to help the sounds or words come out. If you do, put a check in the first column. You are NOT to CHECK behaviors in column I that you do not currently use as a speech aid. Remember, at this point you are only to respond to the items in column I.
Only after you have completed checking the behaviors in column I that you currently use as a speech aid are you to move to column II. There you are to circle the number that best indicates how frequently you use each of the speech aids during a typical day. For each of the speech aids that you have checked in column I you are now to circle if you use them either:

1. very infrequently
2. infrequently
3. somewhat frequently
4. frequently
5. very frequently

<table>
<thead>
<tr>
<th>Column I: As an aid in speaking do you...?</th>
<th>Column II: How frequently do you use the checked speech aid?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1=very infrequently 2=infrequently 3=somewhat frequently 4=frequently 5=very frequently</td>
</tr>
<tr>
<td>Column I</td>
<td>Column II</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>9. Raise your eyebrows</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>18. Purse your lips</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>36. Click your tongue</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>37. Take a deep breath before speaking</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>49. Move your hand(s)</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>67. Tap your foot/feet</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>69. Pause before a word that has often been difficult for you to say</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>74. Silently rehearse a sound, word or phrase</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>77. Use a starting phrase, like ‘let me see’, or ‘well now’ before saying a word or sentence</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>78. Pretend that you don’t know the answer</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>82. Omit a particular word or words</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>83. Substitute one word for another</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>95. Speak in a manner that is different from your normal way</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
References


