The Effectiveness of Repair Strategy Intervention with a Hearing-Impaired Adult

Efficacité des techniques de rétablissement de la communication auprès d'un malentendant adulte

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Abstract

This study investigated the effectiveness of an aural rehabilitation program on a hearing-impaired adult's management of communication breakdowns through effective usage of repair strategies in natural conversations with a normally hearing partner. A second hearing-impaired subject who did not receive intervention served as a control. One pre-therapy and two post-therapy videotaped conversational samples between each hearing-impaired adult and the normally hearing partner were collected. Conversations were analyzed for the occurrence of repaired and unrepaired communication breakdowns, nonspecific versus specific requests for clarification, and types of responses provided by the partner. About 30% of the communication breakdowns experienced by each subject prior to intervention were not repaired. Following communication therapy, the intervention subject left fewer breakdowns unrepaired and increased her usage of specific requests for clarification. This was not observed for the control subject. Although an increase in the proportion of specific requests for clarification was noted for the intervention subject, not all types of specific requests introduced in therapy were used in conversation. Also of interest was the observation that changes in the partner's use of repair strategies were exhibited only with the intervention subject.

Résumé

On a tenté de voir avec quelle efficacité un programme de réadaptation auditive permettait à un malentendant adulte de rétablir la communication par l'usage des diverses techniques apprises, au cours d'une conversation normale avec un partenaire entendant. On a utilisé comme témoin un second malentendant qui n'avait bénéficié d'aucune intervention. Pour l'analyse, on a enregistré des bribes de conversation sur bande vidéo entre chaque malentendant et son partenaire entendant avant (un échantillon) et après le traitement (deux échantillons). On a analysé les conversations selon la fréquence de rétablissement ou non de la communication, au moyen d'éclaircissements spécifiquement ou non réclamés, et le genre de réponses offertes par le partenaire. Avant l'intervention, environ 30p.100 des coupures de communication n'étaient pas rétablies. Suite à l'intervention, le sujet a laissé passer un moins grand nombre de ruptures de communication et a plus souvent demandé des éclaircissements, contrairement au témoin. Bien qu'on ait relevé une augmentation du nombre de demandes d'éclaircissement précises formulées par le sujet qui avait bénéficié de l'intervention, ce dernier n'a pas exploité toutes les stratégies apprises durant le traitement. Un autre aspect intéressant est que le partenaire n'a modifié son usage des techniques de rétablissement de la communication qu'avec le sujet qui avait fait l'objet de l'intervention.

Adults with significant hearing impairment are easily challenged by communication breakdowns resulting from the misperception of their conversational partner's spoken messages (Erber, 1988). They may experience increased difficulty in conversation due to the communication environment, the structure or content of the spoken message, and/or their partner's speech. For example, excessive background noise, unfamiliar topics or vocabulary, and/or a communication partners' rapid speech rate or soft voice, can all adversely affect communication between hearing-impaired adults and their conversational partners (see Sanders (1993) for a review). As a result, conversational turn-taking rituals may be disrupted, topics may be intentionally avoided or unintentionally introduced, non-verbal cues may be exaggerated, and conversations may be shortened because of one or both partners' frustration (Erber, 1988). The repeated communication difficulties may further result in deterioration of the person's self-concept and social adjustment (Erber, 1988; Nowell, 1986). Feelings of powerlessness, frustration, anger, self-pity, suppressed aggression, or withdrawal from social interaction with family and friends may develop (Erikson-Mangold & Erlandson, 1984).

The success of a communicative interaction is in part dependent on a person's ability to use repair strategies to resolve gaps in conversational fluency (Brinton and Fujiki, 1989; Brinton, Fujiki, Loeb & Winkler, 1986; Erber and Greer, 1973; Gagné, Stelmacovich, & Yovetich, 1991; Tye-Murray, Purdy, Woodworth, & Tyler, 1990; Tye-Murray, 1991). Repair strategies may be implemented by the hearing-impaired listener to request clarification when he or she has

failed to understand the speaker's message. Repair strategies, such as repeating, rephrasing or simplifying misperceived sentences, may also be initiated by the speaker when his or her hearing-impaired partner's misperception of the spoken message is evident.

Requests for clarification may be nonspecific or specific (Brinton and Fujiki, 1989; Brinton et al., 1986; Erber, 1988; Gagné et al., 1991; Gallagher, 1981). Nonspecific requests for clarification (e.g., "What?" or "Pardon me?") provide no information as to what portion of the message was misunderstood, and are hence believed to be less helpful in resolving gaps in conversational fluency. In contrast, specific requests for clarification (e.g., requests for the repetition of a specific constituent or requests for confirmation) are considered more effective for resolving communication breakdowns because they tend to direct the speaker to which component of his or her message was misperceived (Brinton et al., 1986; Erber, 1988; Gagné and Wyllie, 1989; Owens and Telleen, 1981). Tye-Murray, Purdy, Woodworth, and Tyler (1990) however, are among the few researchers who did not demonstrate the increased effectiveness of such requests. These authors found their subjects' visual recognition of simple sentences to improve regardless of whether the subjects used specific as opposed to nonspecific requests for clarification.

Moreover, it appears that the types of request for clarification expressed may influence a person's perception of their hearing-impaired conversational partner. People with normal hearing have been found to react more favourably toward hearing-impaired individuals who used specific as opposed to nonspecific requests for clarification (Gagné et al., 1991). Generally however, people with hearing impairment tend to use nonspecific requests for clarification when attempting to resolve communication breakdowns (Gagné and Willie, 1989; Owens and Telleen, 1981; Tye-Murray, 1991; Tye-Murray, Purdy, & Woodworth, 1992).

The types of repair strategies expressed by conversational partners may also influence the ease with which communication breakdowns are resolved during interaction with hearing-impaired individuals. For example, paraphrasing a misperceived message has been found to be a more effective repair strategy than simply repeating the message (Gagné and Wyllie, 1989).

Given that certain repair strategies are believed to be more effective in resolving communication breakdowns than others, that the type of repair strategy selected appears to influence a person's perception of the hearing-impaired individual, and that hearing-impaired individuals tend to primarily use nonspecific requests for clarification when experiencing difficulty in conversation, learning to effectively use appropriate requests for clarification emerges as an important and necessary skill. Many adult aural rehabilitation programs, such as the one developed by Erber (1988), provide training in the use of specific repair strategies while promoting the hearing-impaired individual's active participation in the communicative interaction. One of the underlying assumptions is that by learning to select appropriate requests for clarification, hearing-impaired adults may be able to exercise some control over the types of responses received from their partners, and thereby guide them in using more helpful repair strategies.

Few studies, however, have examined the effectiveness of such intervention. One study by Abrams, Hnath-Chislom, Guerreiro, and Ritterman (1992) showed that, following participation in a counselling-based aural rehabilitation program having a component on repair strategies, subjects exhibited reductions in self-perception of hearing handicap on the Hearing Handicap Inventory for the Elderly. Benefits of intervention in conversational repair strategies have also been demonstrated with structured clinical tasks. Using computerized activities, Tye-Murray (1991) showed that hearing-impaired subjects primarily requested the simple repetition of misperceived sentences prior to and during communication therapy but used a greater variety of requests for clarification following intervention.

No studies to date have explored whether hearing-impaired adults who have received intervention in the use of repair strategies are able to apply their newly-acquired skills to daily conversational exchanges. It is also not clear whether changes in the manner with which hearing-impaired adults request clarification yield changes in the types of responses expressed by untrained conversational partners, or whether partners continue to use their preferred repair strategies regardless of the type of requests for clarification expressed by the hearing-impaired person.

The present study was therefore conducted to determine if, following intervention in the use of requests for clarification, a hearing-impaired adult will use her new skills during natural conversations with a normally hearing partner. In addition, this study investigated whether intervention with the hearing-impaired person has any effects on the conversational partner's expression of repair strategies to solve communication breakdowns.

Method

Subjects

One intervention and one control subject participated in this study. They were female university students, aged 24 and 27 years respectively, each with a bilateral sensorineural hearing loss present from childhood. Both subjects wore amplification consistently, and used verbal language as their

primary means of communication. Neither had received prior communication therapy targeting the management of communication breakdowns. The audiological profile of each hearing-impaired subject is depicted in Table 1.

Table 1. Pure-tone thresholds for each subject.

Subjects	Age	Ear	Thresholds (db HL)					
Frequency (Hz)			250	500	1000	2000	4000	8000
Intervention	24	R	70	90	100	85	85	85
Subject		L	80	95	105	120	NR	NR
Control	27	R	75	80	80	65	65	55
Subject		L	55	65	80	70	65	60

A normally hearing 25 year-old, university educated woman also participated in the study. The normal hearing status was established by passing a hearing screening test at 20 dB HL at audiometric frequencies between 250 and 4000 Hz. This individual served as an unfamiliar conversational partner for both hearing-impaired subjects. She was a stranger to each subject prior to their introduction at the initial session. She had never received information pertaining to strategies that may be used to facilitate communication with hearing-impaired adults.

Procedure

The hearing-impaired subjects were each required to attend three sessions where they were videotaped engaging in a 30- to 40-minute dyadic conversation with the normally hearing partner. The participants were introduced to each other and then simply instructed to talk as they would normally do. During the videotaping sessions, the members of each dyad sat facing one another, approximately one meter apart. The video camera was mounted on a tripod, and no one besides the two interactants were present in the room while videotaping was taking place.

Following the collection of each subject's initial conversational sample, the intervention subject received training in the management of communication breakdowns as outlined by Erber (1988). Participation in the communication therapy necessitated attendance at an additional four, 1-hour weekly, intervention sessions. Neither the control subject nor the conversational partner participated in the intervention program.

The weekly sessions of communication therapy progressed as follows: During the first session common sources of communication breakdowns were explained, and the subject reported examples of situations where she typically experienced difficulty communicating. An explanation of the different types of requests for clarification was provided, and the advantages of using specific requests when asking for clarification were discussed. The types of specific requests for clarification that were introduced included request for repetition of a specific constituent, request for confirmation, forced-choice request, and request for a change in the manner of presentation of the message (Definitions and examples for each of these categories can be found in Appendix A). The subject was given a handout contrasting specific versus nonspecific requests for clarification, highlighted by many examples.

Exercises requiring the repetition of sentences presented by the experimenter, and initiation of specific requests for clarification when necessary, were introduced toward the end of the first intervention session. The experimenter varied the manner of presentation of the stimuli (e.g., she slurred her speech, spoke with a soft voice, concealed her mouth, or spoke rapidly) in order to increase perceptual difficulty, and hence create situations for the hearing-impaired subject to practice using requests for clarification. Verbal reinforcement for each usage of specific requests for clarification was provided.

The second and third intervention sessions involved providing the subject with opportunities to practice implementing specific requests for clarification using QUEST?AR, ASQUE>>>, and TOPICON activities (Erber, 1988). The purpose of the fourth therapy session was primarily to provide the subject with further opportunity to practice using specific requests for clarification in less structured activities (i.e., during more naturalistic conversation with the experimenter).

A second videotaped conversational sample between each of the two hearing-impaired subjects and the conversational partner was collected within one week of the intervention subject's completion of communication therapy. A third videotaping session with each subject occurred one month post-intervention.

Coding Categories

Each of the 30- to 40-minute pre-intervention, immediate post-intervention and one month post-intervention videotaped conversational samples was orthographically transcribed, and particular aspects of the conversational exchanges were coded following the guidelines suggested by Caissie and Rockwell (1993). The coding categories identified the occurrence of communication breakdowns, the types of requests for clarification used by the hearing-impaired subjects to resolve these breakdowns, as well as the types of repair strategies provided by the normally hearing partner.

Communication breakdowns were defined as interruptions in the flow of conversation resulting from the hearing-

impaired subjects' misperceptions of the partner's message. This included speaking turns where the subjects' misperceptions were evidenced by either their use of requests for clarification, inappropriate responses to the partner's turn, abrupt topic shifts, or inappropriate laughter. A distinction was made between those communication breakdowns which were followed by requests for clarification (repair) and those that were not, that is, where the subjects did not attempt to resolve apparent disruptions in conversational fluency (nonrepair).

The types of requests for clarification initiated by the hearing-impaired subjects to resolve communication breakdowns were identified as either *Nonspecific Requests for Clarification* or *Specific Requests for Clarification*. Specific Requests for Clarification were further divided to include *Requests for Repetition of a Specific Constituent, Requests for Confirmation, Forced-Choice Requests,* and *Requests for a Change in Manner of Presentation of the Message* (Appendix A).

The partner responses elicited by the requests for clarification were classified as follows: *Exact* or *Partial Repetition, Repetition of a Specific Constituent, Confirmation, Elaboration,* and *Paraphrase*. Occasions where the subjects' obvious misperception of a spoken message was not spontaneously repaired by the partner were coded as Lack of Spontaneous Repair. Definitions and examples may be found in Appendix B.

Reliability

A point-by-point interjudge reliability was determined by having a second observer view and code 20% of each conversational sample. The percentage of interjudge agreement for the coding of communication breakdowns, types of requests for clarification expressed by the hearing-impaired subjects, and the conversational partner's types of responses was 89%, 87%, and 84%, respectively.

Results

Communication breakdowns

The frequency of occurrence of communication breakdowns for each sample was calculated by dividing the subjects' number of speaking turns that conveyed communication breakdowns by their total number of turns. Prior to intervention, communication breakdowns affected 6.6% and 7.9% of the intervention and control subjects' speaking turns, respectively (Table 2). Following intervention, an increase was noted in the frequency with which communication breakdowns interrupted conversational fluency between the intervention subject and the normally hearing partner. That is, the proportion of communication breakdowns was 8.7% and 9.6% in the two subsequent post-intervention samples. The control subject on the other hand tended to experience slightly fewer communication breakdowns during the second and third conversational samples.

Table 2. Total number of speaking turns expressed by the hearing-impaired subjects and frequency of occurrence of communication breakdowns.

	Intervention Subject			Control Subject		
	Pre-intervention	Immediate post-intervention	One month post-intervention	Pre-intervention	Immediate post-intervention	One month post-intervention
Total Turns Total	287	254	251	215	215	224
Breakdowns	19	22	24	17	15	15
Proportion Breakdowns	6.6%	8.7%	9.6%	7.9%	7.0%	6.7%

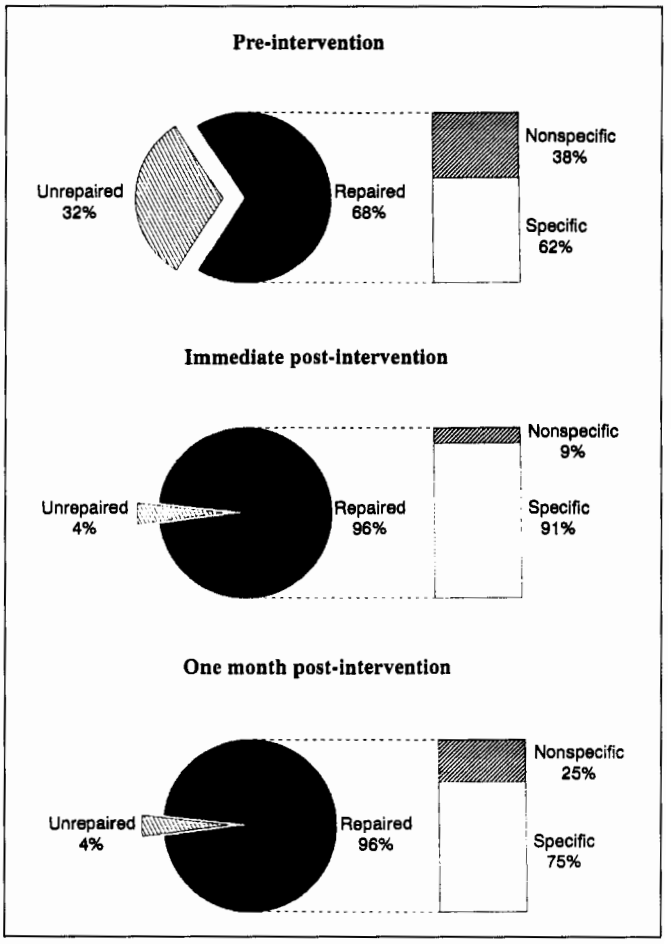

Figure 1. Proportion of unrepaired and repaired communication breakdowns, and types of requests for clarification expressed by the intervention subject.

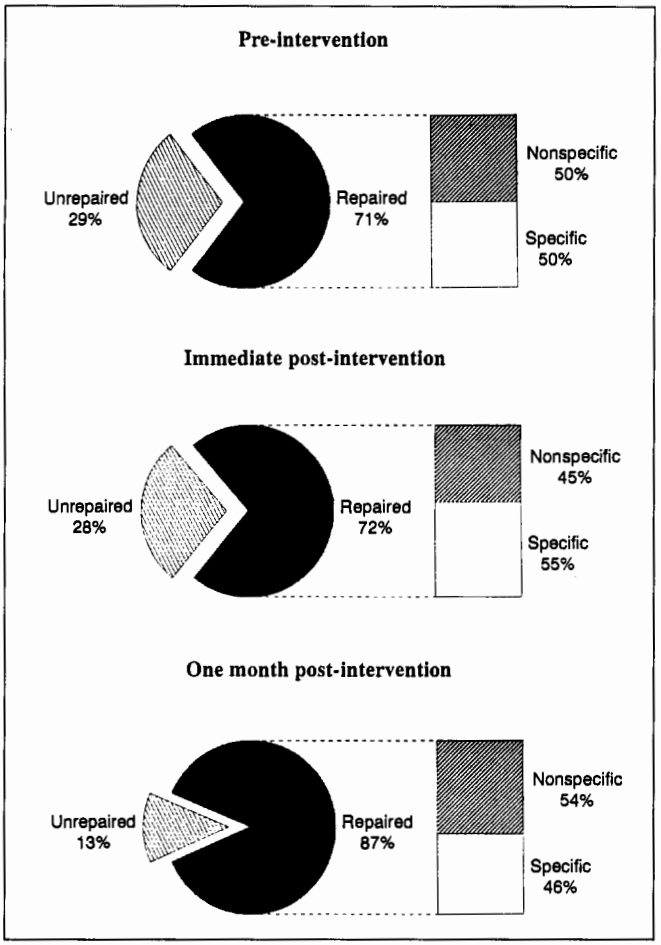

Figure 2. Proportion of unrepaired and repaired communication breakdowns, and types of requests for clarification expressed by the control subject.

As illustrated in Figures 1 and 2, about 30% of the communication breakdowns experienced by each hearing-impaired subject were left unrepaired during the first communicative exchange with the normally hearing partner, that is they were followed by an inappropriate response rather than a request for clarification. Immediately following communication therapy, the percentage of unrepaired breakdowns for the intervention subject dropped to 4%, and remained stable one month post-intervention. The control subject did not show as remarkable a decrease in the frequency of occurrence of unrepaired breakdowns during the second and third conversational samples.

Requests for clarification

The types of requests for clarification used by each hearing-impaired subject to repair communication breakdowns are also shown in Figures 1 and 2. The proportion of nonspecific and specific requests was calculated out of the total number of requests for clarification used during each conversational sample. Results showed an increase in the intervention subject's usage of specific requests for clarification following communication therapy, although this increased usage of specific requests was largest immediately post-intervention, compared to one month post-intervention. That is, prior to therapy, the intervention subject initiated specific requests for clarification in attempt to resolve 62% of the communication breakdowns she experienced. Her usage of specific requests increased to 91% and 75% immediately post-intervention and one month post-intervention, respectively.

The control subject initiated specific and nonspecific requests for clarification equally often when challenged by communication breakdowns during the initial conversational sample. During the second and third conversational samples her usage of specific and nonspecific requests for clarification remained comparable.

The relative frequency of occurrence of each type of specific request for clarification was obtained out of the total number of specific requests for clarification for each sample (Table 3). Both subjects primarily used the categories Request for Repetition of a Specific Constituent and Request for Confirmation when requesting specific clarification during each conversational sample. The intervention subject consistently requested confirmation more frequently than she requested the repetition of a specific constituent in each sample. In contrast, the control subject tended to vary with regards to the frequency with which she expressed these two types of specific requests.

Table 3. Percentage (number) of occurrence of the types of specific requests for clarification used by the intervention and the control subjects.

	Request for specific constituent	Request for confirmation	Forced-choice request	Request for change in manner of presentation
Intervention subject				
Pre-intervention	37 (3)	62 (5)	—	—
Immediate post-intervention	32 (6)	63 (12)	5(1)	—
1-month post-intervention	41(7)	59 (10)	—	—
Control subject				
Pre-intervention	33 (2)	67 (4)	—	—
Immediate post-intervention	67 (4)	33 (2)	—	—
1-month post-intervention	33 (2)	50 (3)	17 (1)	—

Forced-choice requests for clarification were only expressed during the second videotaping session for the

intervention subject, and during the third session for the control subject. Finally, a change in the manner of presentation of the message was never requested by either subject.

Conversational partner responses

The relative frequency with which each type of partner response was used was calculated out of the total number of partner responses for each conversational sample (Table 4). When interacting with the intervention subject prior to communication therapy, the normally hearing partner primarily used Exact or Partial Repetition to repair communication breakdowns (42% of the time). The category Lack of Spontaneous Repair was the next most frequently occurring (26%). In the two videotaped samples obtained following intervention with the hearing-impaired subject, there was a sharp decrease in the partner's usage of these two categories, while other strategies increased in frequency. The frequency of occurrence of Paraphrase remained fairly low (9% or less) throughout all conversational samples.

Table 4. Percentage (number) of occurrence of the types of repairs expressed by the partner during conversation with the intervention subject and with the control subject.

	Exact or partial repetition	Repetition of specific constituent	Confirmation	Elaboration	Paraphrase	Lack of repair
Conversation with intervention subject						
Pre-intervention	42 (8)	5 (1)	21 (4)	5 (1)	—	26 (5)
Immediate post-intervention	14 (3)	23 (5)	41 (9)	9 (2)	9 (2)	4 (1)
1-month post-intervention	25 (6)	17 (4)	21 (5)	25 (6)	8 (2)	4 (1)
Conversation with control subject						
Pre-intervention	28 (4)	11 (2)	17 (3)	6 (1)	6 (1)	33 (6)
Immediate post-intervention	33 (5)	13 (2)	13 (3)	7 (1)	7 (1)	27 (4)
1-month post-intervention	40 (6)	7 (1)	13 (2)	13 (2)	13 (2)	13 (2)

When interacting with the control subject during the first videotaping session, the two most frequent types of responses provided by the partner consisted of Exact or Partial Repetition (28%) and Lack of Spontaneous Repair (33%). These two categories continued to be the most frequently expressed during the second conversational sample with the control subject. In the third sample, the category Lack of Spontaneous Repair decreased in frequency (13%) but Exact or Partial Repetition remained high (40%). Other types of responses were used between 6 and 17% of the time in all three samples.

Discussion

Interestingly, results of this study showed an increase in the proportion of communication breakdowns experienced by the intervention subject following training in the management of communication breakdowns. This increased occurrence of breakdowns however, does not necessarily mean that she was more frequently challenged by perceptual difficulties following intervention. Rather, it appears as though the intervention subject simply became more assertive in her management of communication breakdowns, and that she was more comfortable indicating her listening difficulties to her partner. That is, despite the observation that there were more communication breakdowns following intervention, fewer of them were left unrepaired. Prior to intervention, when faced with incomplete perception of her partner's message, she may still have been providing topically related responses, thereby hiding some of her perceptual difficulties from her partner. This would agree with Erber's (1988) statement that when hearing-impaired people experience difficulty understanding all elements of a spoken message, it is not uncommon for them to pretend that they are satisfied with incomplete understanding during conversation, and not to use requests for clarification. Thus, it is possible that the increase in the percentage of observed communication breakdowns resulted from the subject's persistence in initiating requests for clarification and, therefore, was a reflection of her increased assertiveness in managing communication breakdowns.

The hearing-impaired control subject, in contrast, tended to experience slightly fewer communication breakdowns in the second and third videotaping sessions. The subject's increasing familiarity with the speech patterns and expressions used by the conversational partner may have contributed to a reduction in the perceptual difficulties encountered during conversation.

The reason for initiating communication therapy was to increase the intervention subject's usage of specific as opposed to nonspecific requests for clarification. Results suggested that she was able to learn to employ more specific requests, to transfer this skill to typical everyday conversations as well as to maintain her newly-acquired skill one month following intervention. This is indicated by an increase in her frequency of use of specific requests for clarification in the two videotaped conversational exchanges following intervention, while the control subject's usage of specific and nonspecific requests remained fairly constant. Although the intervention subject's use of specific requests

for clarification showed a decrease during the one month post-intervention sample, as compared to the immediate post-intervention sample, her usage of specific requests remained higher than prior to receiving intervention.

It is interesting to note that, when using more specific requests for clarification, the intervention subject simply increased her frequency of use of those types of specific requests which she preferred to use prior to intervention (i.e., requests for confirmation and requests for repetition of a specific constituent) rather than increasing the size of her repertoire. Although, in structured activities, she demonstrated her ability to use forced-choice requests for clarification and requests for a change in the manner of presentation of the message on a number of occasions, she did not use these skills in the videotaped conversations. Previous findings by Tye-Murray (1991) have indicated that, in a structured setting, hearing-impaired individuals use a greater variety of repair strategies following therapy. The present investigation expanded on Tye-Murray's findings by demonstrating that although the hearing-impaired person may use a greater number of specific requests for clarification following intervention, the variety of specific repair strategies mastered in therapy may not be reflected in the individual's daily conversations.

The results also suggested that intervention targeting the management of communication breakdowns with a hearing-impaired adult can indirectly produce changes in the conversational partner's communicative behaviors. When conversing with the intervention subject prior to communication therapy, as well as when conversing with the control subject during each videotaping session, the partner was more likely to simply repeat her message rather than provide more helpful types of repairs. In addition, during these sessions she often failed to spontaneously repair obvious communication breakdowns. Following intervention with the hearing-impaired subject, the conversational partner was observed to increase the variety of her repair strategies, and especially to lower her usage of exact repetition and lack of spontaneous repair. However, the partner's use of paraphrase, which has been documented to have a facilitative role in the management of communication breakdowns (Gagné & Wyllie, 1989), remained low throughout all conversational exchanges with either hearing-impaired subject. This behavior may have persisted because the intervention subject did not apply her ability to request a change in the manner of presentation of the message to the videotaped conversational samples.

Thus the intervention subject, by modifying her clarification requesting behaviors, was able to yield changes in the partner's responsive behaviors. Such findings would indicate that hearing-impaired individuals can greatly benefit from having an active role in conversational management, especially when conversing with people who are not familiar with the communication difficulties encountered by the hearing-impaired population.

The present investigation was unique in that it employed analyses of typical everyday conversations, as opposed to contrived clinical tasks, to assess the effectiveness of adult aural rehabilitation targeting the management of communication breakdowns. Analysis of more natural communicative interactions was successfully used to measure changes in the hearing-impaired subject's usage of clarification requests in conversation following intervention, and to highlight changes in the partner's repair strategy usage. Similar methodology may be employed to expand the present findings with a larger group of subjects, or to further examine variables that may affect conversational performance of adults with hearing impairment.

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Appendix A

TYPES OF REQUESTS FOR CLARIFICATION

1. **Nonspecific Request for Clarification**

   Neutral and/or nonverbal request for clarification that did not give information as to which portion of the partner's message was misperceived (e.g., "Hmm?", "What?", leaning forward, and quizzical look).

2. **Specific Requests for Clarification**

   (a) **Request for Repetition of a Specific Constituent**
   Request that the conversational partner repeat the misperceived constituent (e.g., "Where did you go?").

   (b) **Request for Confirmation**
   Request intended to confirm the accuracy of misperceived portions of the partner's message (e.g., "Did you say you went to Italy?").

   (c) **Forced-Choice Request**
   Request asking the conversational partner to indicate which of two constituents was included in the original message (e.g., "Did you say you went to Germany or Italy?").

   (d) **Request for a Change in the Manner of Presentation of the Message**
   Request that the conversational partner rephrase or change the way the message was presented (e.g., "Could you please say that another way?". "Could you say that more slowly?").

Appendix B

TYPES OF RESPONSES TO REQUESTS FOR CLARIFICATION

1. **Exact or Partial Repetition**

   All or part of the conversational partner's original message was repeated with no new information being provided. For example,
   Partner: "I went to Italy last month."
   Hearing-impaired: "What?"
   Partner: "I went to Italy last month."

2. **Repetition of a Specific Constituent**

   The conversational partner repeated the misperceived portion of her original utterance or identified which of two constituents she had used. For example,
   Partner: "I went to Italy last month."
   Hearing-impaired: "Where did you go?"
   Partner: "To Italy."

   Partner: "I went to Italy last month."
   Hearing-impaired: "I'm sorry. Did you say you went to Germany or Italy?"
   Partner: "Italy."

3. **Confirmation**
   The conversational partner confirmed or disconfirmed the accuracy of the hearing-impaired partner's perception of the message. For example,
   Partner: "I went to Italy last month."
   Hearing-impaired: "Did you say you went to Italy?"
   Partner: "Yeah."

4. **Elaboration**
   The conversational partner clarified her message by adding new information to her original utterance. For example,
   Partner: "I went to Italy last month."
   Hearing-impaired: "What?"
   Partner: "I went to Italy last month to visit my mom."

5. **Paraphrase**
   The conversational partner rephrased her original message without providing any new information. For example,
   Partner: "I went to Italy last month."
   Hearing-impaired: "What?"
   Partner: "Last month, I travelled to Italy."

6. **Lack of spontaneous repair**
   The conversational partner failed to repair her message despite the hearing-impaired subject's obvious misperception. For example,
   Partner: "I love to travel. I went to Hungary last year."
   Hearing-Impaired: "Yeah, I'm hungry too."
   Partner: "Are you? Did you have lunch yet?"