

# THE USE OF MOVIE AND SPOT DUBBING IN STUTTERING TREATMENT

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## SUMMARY

We propose a novel use of movie and spot dubbing in the rehabilitation path of the people who stutters (PWS). In particular, in dubbing the PWS faces relevant technical difficulties such as the control of the verbal fluency and the time pressure caused by the sharp timing in pronouncing the lines. This provides a fundamental training instrument. Here we identify, describe and analyze an effective methodology to use this tool, consisting of different levels of gradually increasing difficulty for the PWS. Moreover, we present the results of an empirical study of the use and the efficacy of this methodology.

## 1. Introduction

The stuttering therapy chronically weaves between two dimensions: work on symptoms and work on the syndrome. Yet in the 1960s, West (cited by Murray, 1980) made a distinction between the above two variables, highlighting the relevant differences, but at the same time emphasizing the need for an integrated treatment approach to the two dimensions of the problem. In West's opinion, the syndrome was under the influence of "complex psychological forces" (Murray, 1980), including, *inter alia*, stutterers' conditioned fears and states of anxiety (Borkovec et al., 1998). The awareness of the disfluency, plus the recollection of any previous negative experience of verbalization, represents, especially for the adult PWS, a potential conditioning factor affecting the verbal performance. This conditioning may occur at the moment that immediately precedes the verbal act, for the fears of the upcoming verbal blockage, during the act of verbalization, and/or at the moment immediately following it, influencing self-evaluation. In the three moments, the problem is connected to the already experienced loss of control of his/her own articulators (Perkins, Kent, & Curlee, 1991). Deterioration of fluency may be conditioned by anxiety level and by the PWS's ability to manage the communicative pressure (Craig, 1990; Murray, 1980; Smith & Kelly, 1997). This anxiety is reinforced by limitations of time, which generate on PWS a specific time pressure (Lugo-Neris, 2005). Several studies (Conture, 1990; Perkins et al., 1991; Postma & Kolk, 1993; Scott Trautman & Cairns, 2003; Starkweather, 1987; Susca, 2001) identified, described and explained the correlation existing between time pressure and stuttering. Some works (e.g., Kent, 1984), that fit into the trend of approaches aiming at the identification of genetic causes of disfluency, have focused on the cognitive dimension of time and time pressure, and proposed the hypothesis that stuttering may be the evidence of a malfunction of the speech timing, thus being the expression of a more general and deeper temporal disorder. Other authors (such as Sheehan, 1970) concentrated their analysis instead on the role played by psychologically conditioning factors in the verbal performance. Two types of time pressure have been identified in the international literature (Lugo-Neris, 2005; Perkins et al., 1991; Starkweather & Givens-Ackerman, 1997):

- an external pressure, as reaction to the environmental stimuli;
- an internal pressure, as reaction to the internal stimuli of the PWS, fuelled by factors such as the difficulties experienced during the verbalization, frustration and anxiety (Van Riper, 1973).

The two different types of time pressure can be strongly correlated in PWS, who absorb and internalize the time pressure accumulated from the outside with time, by transforming it into a constantly present internal one, even when the external conditions are not really pressing. Therefore, they tend “*to put pressure on themselves and to operate from a built-in time pressure system*” (Sheehan, 1970, p. 123). This type of pressure is clearly independent from the incidental external one. Time pressure reaches the highest level as the individual is supposed to pronounce specific words, in a certain way, at a given moment of time (Murray, 1980) and can become a factor which negatively conditions the PWS’ verbal performance.

Consequently, the treatment for PWS cannot disregard a specific work aimed at the management of the time pressure (Lugo-Neris, 2005). This goal can be reached by inducing PWS facing situations of verbalization with a high communicative and time pressure, situations they would rather avoid because of the difficulties of the task, the lack of control (Bloodstein, 1995) and the high anxiety given by demanding speech situations (Craig, 1990) felt as a menace (Gaudry & Spielberger, 1970). The avoidance of feared situations protects the patient from anxiety and from the risk of failure, but at the same time does not allow him/her to change attitude towards verbalization, nor to learn how to face difficult situations of verbalization, from both a psychological and a technical point of view (verbal facilitation, phono-articulatory techniques, and so on). For these reasons a specific training focused on time pressure situations can be useful within a multimodal global intervention (Tomaiuolo, 2005).

## 2. The Use of Dubbing as Rehabilitation

Dubbing has never been considered a therapeutic activity, but it can be somehow interesting for logopedists: in fact, it requires dubbers to respect an imposed script, with the proper interpretation and, most of all, in a given very short communication time, in order to overlap with the original sound. Starting from this observation, we identified it as a potentially useful training for PWS (Tomaiuolo, 2001) in order to face time pressure, and more. In fact, the use of dubbing can allow the speaker to achieve therapeutic targets connected to both the symptom and to the wider syndrome:

- (a) First-level therapeutic targets, i.e., symptom-related targets:
  - Training to manage temporal pressure in the communication, through the systematic exposure of the PWS to a situation characterised by a strong and constant pressure due to the necessity of respecting imposed communication times, connected to the frames;
  - Training in the use of the verbal facilitation techniques in order to improve their use;
  - Performance of specific exercises of phono-articulatory type;
  - Acquisition of the contextual use of the voice volume and intonation;
  - Improvement in the coordination between verbal, para-verbal and non-verbal tones of communications (for the necessities of the text interpretation), with the resultant improvement in the overall communicative efficacy;
  - Training to get used to a higher concentration during the verbal performance;
  - Training in the fearless use of pauses in the speech flow;
  - Greater awareness of the personal voice, pronunciation and communication by means of a regular repeated listening of each test recording;
  - Greater capacity of observation, self-observation, analysis and self-evaluation of the communication.
- (b) Second-level therapeutic targets, i.e. syndrome-related targets:
  - Systematic exposure of the PWS to a dreaded situation of verbalization, characterized by a high time pressure, thus challenging the negative convictions that he/she has developed with the passing of time and associated with this type of situation. This can help in

preventing avoidance behaviours, increasing self-control rise and reduce anxiety (Barlow, 1988) connected to verbalization;

- Test of roles being other than everyday personal roles;
- Modification of the personal defensive structure.

Films and spots meet the targets stated above in (a) and (b). The advertising spot represents an initial testing exercise due to its shortness and to the reduced range of communicative registers that it can offer. After efficaciously testing it, it is possible to switch to the film. Dubbing does not appear to be free from difficulties for the PWS. The greatest difficulties lie in the replacement of the actor's voice trying to match the beginning of the dialogue and respecting the times of the script and of the actor performance. The induced communicative pressure is high. At the same time, thanks to the interest connected with the fascinating world of spots and movies, it becomes a particularly attractive and stimulating therapeutic tool, able to generate a motivational activation of PWS, who are inclined to consider actors and dubbers as perfect models of fluency.

### 3. Experiment

The study focused on the identification, description and examination of the effects of training based on dubbing schemes applied to a group of adult disfluent individuals. Verbal fluency, avoidance and emotional reactions, and anxiety levels were measured.

#### Methods

The participants in the study were 10 disfluent adult-age individuals with an average age equal to 25.4 years: six male PWS (from 19 to 31 years old) and four female PWS (from 23 to 52 years old); seven of them suffered from serious tonic-clonic stuttering and the other three from serious clonic stuttering<sup>1</sup>. All the PWS, at the moment of dubbing, had already benefited from a twelve months rehabilitation programme for disfluency integrating logopedic therapy and art-therapy. Seven out of ten PWS in the sample had previously had other therapeutic experiences.

PWS in the sample underwent a seven months dubbing training, led by a professional dubbing director and two logopedists. The first two months of the course were devoted to work on the interpretation in dubbing, paying particular attention to the articulation, volume and tone of the voice. The second part of the training, taking four months, was arranged according to growing complexity levels:

*Level 1:* dubbing of an advertising spot or of a short sequence in a film, without having any written script to stick to, but trying to respect the times fixed by the movement of the actor's mouth;

*Level 2:* dubbing of an advertising spot or of a sequence in a film, trying to follow a script with the only task to meet the Sync;

*Level 3:* dubbing of a spot or of a sequence in a film, trying to meet the Sync, sticking to the script, using adequate tone and voice and following the instructions from the dubbing director. This last part of the course consisted in ten three-hour sessions and lasted one month<sup>2</sup>.

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<sup>1</sup> Clonic stuttering consists in the repetition of a phoneme, a syllable or a word, especially at the beginning of the verbal production or even during the enunciation of the phrase; tonic stuttering consists of sound or silent blockages which prevent the patient from beginning the emission of the word or interrupt the verbal flow. It is also identified by a third type of stuttering, which is a mixed tonic-clonic form, in which the symptoms of both the forms sum up and mingle, thus causing a noticeable alteration in the rhythm, which presents explosions, repetitions and interruptions (Van Riper, 1973). The inhomogeneity of the sample is the result of a selection made with a view to highlighting any possible correlation between the type of stuttering and the anxiety levels and any noticeable attitudes.

<sup>2</sup> PWS were called before the microphones in groups of two or three, according to the number of actors in each scene. Even though individual training differed according to the length of the speech of his/her characters, director and logopedists tried to balance the training time and the difficulties for each participant to the study.

During this phase PWS exclusively worked on films, thus living a professional experience in a real dubbing room<sup>3</sup>. This setting location added another difficulty to the training, connected to the technical working modalities typical of professional dubbing and specifically to the presence of two additional stimuli:

- a time-code, i.e., a numeric code flowing on the screen together with the film and that identifies all frames with a number in order to verify moment when the actor starts talking;
- a red light that turns on to communicate the beginning of the track recording, informing the dubber of the fact that the recording of his/her performance has begun.

The use of these two tools requires the dubbers to raise their attention levels and induces a higher time pressure.

The film the PWS were called to dub was “Heat”<sup>4</sup>. The choice was due to several reasons. First of all, it had been a blockbuster, with famous starring actors and dubbed into Italian by well-known professional dubbers, which made the challenge more stimulating for the PWS. Secondly, in it many actors play different (even mutually opposing) roles. The film alternates sequences with different plots, rhythms and communicative styles. Some of them are short and quite excited; others are richer in dialogues, with quite long gags and demanding speeches. So the PWS were asked to adapt the use of the techniques of verbal facilitation, articulation, tone and volume of the voice to different situations and various characters and roles. Besides, gags and speeches generate a high time pressure on PWS, because they are often:

- overlapping, that is the communicative exchange is not arranged on a regular shifting;
- locked on, because the actor speaks full-face to the camera: so, the dubber has to be very accurate in the superimposition of his/her words on to the picture on the screen.

Participants were tested with the Systematic Disfluency Analysis (SDA; Campbell & Hill, 1994); an adaptation of Schindler’s (1980) self-evaluation of verbal conditions and Spielberg’s (1983) State-Trait Anxiety Inventory (STAI). The adaptation of Schindler’s (1980) self-evaluation test of situations of verbalization consists of 27 items corresponding to as many situations for which the individual is to rate his/her own emotional reaction and avoidance level, on a scale from 1 to 5. Both SDA and Schindler’s test were administered three times: the first administration ( $a_{11}$ ) was at the moment of the beginning of the rehabilitation program; the second ( $a_{12}$ ) was after a twelve-months integrated therapy, before the tested PWS started the dubbing program; the third ( $a_{13}$ ) at the end of the dubbing program. STAI had two administrations: the first one ( $a_{21}$ ) at the beginning of Level 3, just before the PWS faced the first dubbing session, that is, entering the professional dubbing room for the first time; the second one ( $a_{22}$ ) just before facing the last dubbing session at the end of the program<sup>5</sup>.

## Results

### *Systematic Disfluency Analysis (SDA)*

The outcomes of the three tests of verbal fluency (Table 1) highlighted a remarkable improvement in the average percentage of pronounced words (that increased) and of the stuttered words (that decreased) between  $a_{11}$  and  $a_{12}$ , namely as a result of the therapeutic programme. A further, although moderate, improvement had been reported between  $a_{12}$  and  $a_{13}$ , i.e., as a result of the dubbing programme, especially in the number of stuttered words (total number – 7.90) and in the average duration of disfluences (0.48).

<sup>3</sup> Previous training was conducted in a traditional group-setting room with a TV and a DVD player.

<sup>4</sup> This action thriller film was produced in the USA in 1995, directed by Michael Mann, featuring Al Pacino and Robert De Niro. The film runtime was 172 minutes.

<sup>5</sup> STAI was administered in groups and no defined time limit was given for its compilation. When it is used for investigation reasons, STAI can be administered also before a task, in order to measure anxiety levels related to the task at that moment (Spielberg, 1983). In our study we chose to administer STAI before patients entered the dubbing room in order to evaluate their state of anxiety level and consequently to what degree they felt as menacing the task they were going to carry out.

Table 1. Results from Systematic Disfluency Analysis (SDA)

	a <sub>t1</sub>	a <sub>t2</sub>	a <sub>t3</sub>	a <sub>t1</sub>	a <sub>t2</sub>	a <sub>t3</sub>	a <sub>t1</sub>	a <sub>t2</sub>	a <sub>t3</sub>	a <sub>t1</sub>	a <sub>t2</sub>	a <sub>t3</sub>
<b>Reading test</b>	<b>Duration in minutes</b>			<b>Number of pronounced words</b>			<b>Number of stuttered words</b>			<b>Average duration of disfluencies</b>		
Mean	2.03	1.87	1.81	245.20	246.40	246.40	45.80	14.90	12.90	7.15	2.80	2.15
SD	0.39	0.36	0.35	2.90	1.90	1.90	17.63	10.83	9.22	11.03	3.38	2.31
Variation with respect to previous administration	-	-0.16	-0.06	-	1.20	0.00	-	-30.90	-2.00	-	-4.35	-0.65
<b>Monologue test</b>	<b>Duration in minutes</b>			<b>Number of pronounced words</b>			<b>Number of stuttered words</b>			<b>Average duration of disfluencies</b>		
Mean	2.00	2.00	2.00	162.70	170.50	173.10	37.20	16.10	13.60	8.50	2.75	2.30
SD	0.00	0.00	0.00	44.20	37.30	32.01	17.16	6.40	4.81	12.98	3.85	2.78
Variation with respect to previous administration	-	0.00	0.00	-	7.80	2.60	-	-21.10	-2.50	-	-5.75	-0.45
<b>Conversation test</b>	<b>Duration in minutes</b>			<b>Number of pronounced words</b>			<b>Number of stuttered words</b>			<b>Average duration of disfluencies</b>		
Mean	2.00	2.00	2.00	138.50	151.30	169.90	32.40	16.20	14.30	6.25	2.70	1.60
SD	0.00	0.00	0.00	37.68	20.61	32.23	14.56	9.00	12.39	8.44	3.88	1.81
Variation with respect to previous administration	-	0.00	0.00	-	12.80	18.60	-	-16.20	-1.90	-	-3.55	-1.10
<b>Aggregate values of the three tests</b>	<b>Duration in minutes</b>			<b>Total number of pronounced words</b>			<b>Total number of stuttered words</b>			<b>Total average duration of disfluencies</b>		
Mean	2.00	2.00	2.00	545.10	571.40	573.60	116.90	45.20	37.30	7.77	2.49	2.01
SD	0.00	0.00	0.00	74.27	43.93	84.98	41.22	20.05	13.93	11.72	3.04	2.40
Variation with respect to previous administration	-	0.00	0.00	-	26.30	2.20	-	-71.70	-7.90	-	-5.28	-0.48

*PWS self-evaluation test of situations of verbalisation: Avoidance*

The test has highlighted certain initial values, corresponding to a<sub>t1</sub> (in Figure 1), with SD equals to 15.7, which diminishes in a<sub>t2</sub> (SD = 9.19) and in a<sub>t3</sub> (SD = 8.41). A reduction in the number of avoidances responses between a<sub>t1</sub> and a<sub>t2</sub>, and a more moderate reduction between a<sub>t2</sub> and a<sub>t3</sub> were reported for all the PWS in the sample, in a differentiated manner. The percentage variation in the average values reported between a<sub>t1</sub> and a<sub>t2</sub> was equal to -31.43% of the avoidance responses, and to -14.42% between a<sub>t2</sub> and a<sub>t3</sub>.

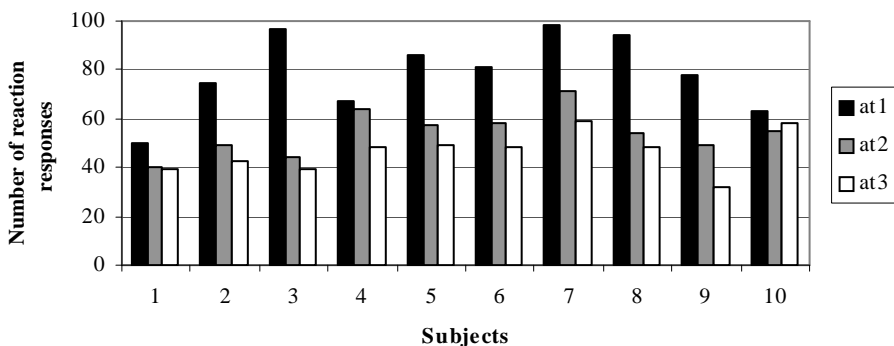


Figure 1. Avoidance

*PWS self-evaluation test of situations of verbalisation: Emotional reactions*

The initial distribution of emotional reaction responses in  $a_{t1}$  ( $SD = 9.69$ ) was, instead, more homogeneous with respect to data concerning avoidance responses that reports a slight decrease during  $a_{t2}$  ( $SD = 9.17$ ) to increase then again in  $a_{t3}$  ( $SD = 9.85$ ). With respect to  $a_{t1}$ ,  $a_{t2}$ , data show a reduction in the average number of emotional reaction responses, equal to 35.70%. A further decrease by 8.56% was reported in  $a_{t3}$ .

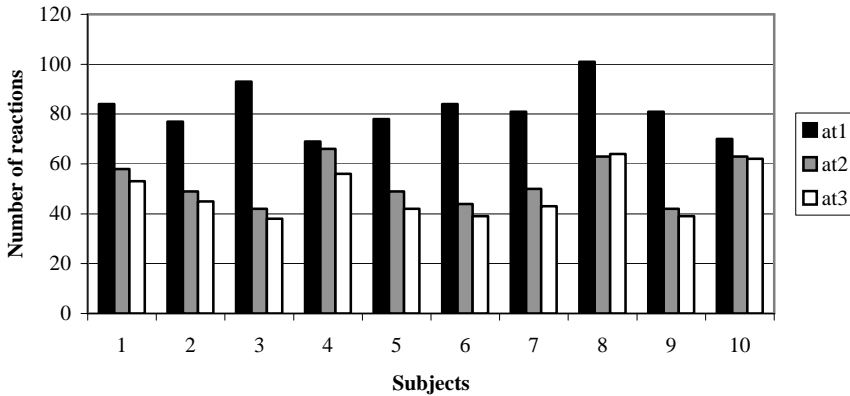


Figure 2. Emotional reactions

*STAI*

As Figure 3 shows, between the first and the second administration, all the PWS, except for the first one, reported a remarkable reduction in their state anxiety (S-Anxiety) levels connected to the task of dubbing. The average reduction (Table 2) between the two administrations was -18.3.

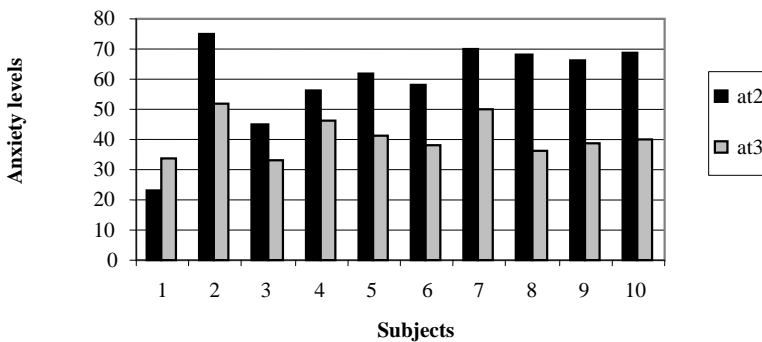


Figure 3. Longitudinal analysis of the S-Anxiety

Table 2. Summary of S-Anxiety data

	$a_{t1}$	$a_{t2}$
Mean	59.2	40.9
SD	15.34	6.49
Variation with respect to previous administration	-	-18.3

Comparison between the genders (Table 3) shows some differences between males and females. The results of  $a_{11}$  were lower for males than for females, with an average value of 51.67 versus 70.50. *SD* for females is very low compared to the *SD* for males, showing a substantially homogeneous distribution close to the average value of the female participants responses. Both males and females reduced their levels of S-Anxiety. Also the average levels of S-Anxiety reported in  $a_{12}$  were lower for males, even though the average reduction was higher for females (-26.00 vs. -13.17). The standard deviation drastically reduces for males, showing a more homogeneous distribution, while it increases for females.

Table 3. *S-Anxiety of males and females PWS*

	Male			Female		
	$a_{11}$	$a_{12}$	$a_{12} - a_{11}$	$a_{11}$	$a_{12}$	$a_{12} - a_{11}$
Mean	51.67	38.50	-13.17	70.50	44.50	- 26.00
<i>SD</i>	15.73	4.76	- 10.97	3.11	7.72	4.62

#### 4. Discussion and Conclusions

The scores obtained during the three administrations of fluency tests highlight that the training based on the dubbing techniques resulted in a further moderate improvement (especially regarding the recorded duration of disfluences) of a fluency that had already considerably ameliorated upon the completion of the therapeutic programme undergone by the PWS in the sample. This is due to the dubbing training aimed at improving PWS ability to use the verbal facilitation techniques and the exercise of the phono-articulatory apparatuses. As far as the reactions to situations of verbalisation are concerned, at the end of the training period the PWS in the sample showed as well that they had partially reduced the level of emotional reactions and the level of avoidance of high time pressure situations, they feared the most. Also S-Anxiety connected to time pressure typical of the situation diminished in the second administration. This result could be referred to as a possible adaptation to the task of dubbing. However, for the situations of the study, it can only represent a very low impact factor. In fact, it is possible to observe that the reduced number of sessions (ten), the short time of sessions distribution (one month), and the absence of repetition of the task, because of the progressive differentiation of each session (in terms of task length, characteristics and difficulties for PWS) are factors that cause any significant adaptation effect. Training based on dubbing experience seems therefore to produce some positive effects on the dimensions connected to the symptom (verbal fluency, improvement in the use of verbal facilitation techniques, exercises involving the phono-articulatory apparatuses and management of the temporal pressure) and still more positive effects on the aspects connected to the syndrome (S-Anxiety, limitation of levels of avoidance and emotional reactions with respect to most dreaded situations).

Considering the limited number of participants, this study represents a first exploratory step aiming at the identification of the effects that the dubbing can have as a group activity within a therapeutic multimodal program having an integrated approach both on symptom and syndrome. Future investigations may be designed to test the proposed instrument on a larger sample of PWS.

#### References

- Barlow, D. H. (1988). *Anxiety and its disorders: The nature and treatment of anxiety and panic*. New York: Guilford Press.
- Bloodstein, O. (1995). *A handbook on stuttering* (5<sup>th</sup> ed.). San Diego: Singular Publishing Group.
- Borkovec, T. D., Ray, W. J., & Stöber, J. (1998). Worry: A cognitive phenomenon intimately linked to affective, physiological, and interpersonal behavioral processes. *Cognitive Therapy and Research*, 22, 561-576.

- Campbell, J. G., & Hill, D. G. (1994). *Systematic Disfluency Analysis*. Evanston, IL: Northwestern University.
- Conture, E. G. (1990). *Stuttering*. Englewood Cliffs, NJ: Prentice-Hall.
- Craig, A. (1990). An investigation into the relationship between anxiety and stuttering. *Journal of Speech and Hearing Disorders*, 55, 290-294.
- Gaudry, E., & Spielberger, C. D. (1970). *Anxiety and educational achievement*. New York: Wiley.
- Kent, R. D. (1984). Stuttering as a temporal programming disorder. In R. F. Curlee & W. H. Perkins (Eds.), *Nature and treatment of stuttering: New directions* (pp. 283-303). San Diego: College-Hill Press.
- Lugo-Neris, M. J. (2005). *The effects of time pressure on discourse organization of adults*. Florida State University D-Scholarship Repository, Article #84. Retrieved March 11, 2007 from <http://dscholarship.lib.fsu.edu/undergrad/84>
- Murray, F. P. (1980). *A stutterer's story*. Chicago, IL: Interstate.
- Perkins, W. H., Kent, R., & Curlee, R. (1991). A theory of neuropsycholinguistic function in stuttering. *Journal of Speech and Hearing Research*, 34, 734-752.
- Postma A., & Kolk, H. H. J. (1993). The covert repair hypothesis: Prearticulatory repair processes in normal and stuttered disfluencies. *Journal of Speech and Hearing Research*, 36, 472-487.
- Schindler, O. (1980). *Handbook of communication disorders, Vol. I*. Turin, Italy: Omega Edizioni.
- Scott Trautman, L., & Cairns, D. (2003, November). *Investigating the effects of time pressure on fluency and language*. Paper presented at the annual meeting of the American Speech-Language-Hearing Association, Chicago, IL.
- Sheehan, J. G. (1970). *Stuttering: Research and therapy*. New York: Harper and Row.
- Smith, A., & Kelly, E. (1997). Stuttering: A dynamic, multifactorial model. In R. F. Curlee & G. M. Siegel (Eds.), *Nature and treatment of stuttering* (pp. 97-127). Boston: Allyn & Bacon.
- Spielberger, C. D. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Starkweather, C. W. (1987). *Fluency and stuttering*. Englewood Cliffs, NJ: Prentice-Hall.
- Starkweather, C. W., & Givens-Ackerman, J. (1997). *Stuttering*. Austin, TX: Pro-ed.
- Susca, M. (2001). *Perception of brief time-interval durations in people who do and do not stutter*. PhD dissertation, the University of Nebraska.
- Tomaiuolo, D. (2001, July). *The role of movie and spot advertisement dubbing in the stuttering patient rehabilitation*. Paper presented at the 6<sup>th</sup> World Congress for People Who Stutter.
- Tomaiuolo, D. (2005, October). A theatrical approach to treating stuttering. *ASHA Leader*, pp. 20-21.
- Van Riper, C. G. (1973). *The treatment of stuttering*. Englewood Cliffs, NJ: Prentice Hall.