EXPERIMENTAL AVERSION THERAPY FOR STUTTERING: A CASE STUDY

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Of recent, great interest has been shown in the application of aversive stimulus contingent on stuttering blocks as a therapeutic strategy (Goldiamond 1965; Martin and Siegal 1966a; Martin and Siegal 1966 b). The assumption underlying these efforts are that stuttering blocks are subject to the control of the law of effect, hence an aversive stimulus would decrease the probability of their occurrence.

This is a report of experimental aversion therapy conducted along similar lines on a case who came with the complaint of stuttering behaviour.

The case, a male aged 25, reported to the Institute with the complaint of stuttering behaviour. He was of average intelligence, educated upto VIII std., and a general merchant. His stuttering was characterized by repetitions, prolongations and 'secondaries' like tongue protrusion, abnormal mandible depression, extraneous sounds, eye brow rising and rapid eye-blinking. Interestingly, he exhibited all these stuttering postures when asked to read the same passage without voice.

The aversive stimulus used was an unpleasant electric shock (85 volts) administered on the first finger of the case. The electro-shock instrument used was constructed in the electronic laboratory of the Institute, consisting of a variac to regulate the level of voltage of shock administered to the case, a manually operated switch which enables the shock to be delivered contingent on stuttering blocks.

The sessions were divided into (1) experimental aversive stimulus, contingent (ASC) condition (2) a control no shock (NS) condition. Each condition lasted 25 minutes, separated by a rest pause of 15 minutes each. Same reading passage was used in both the conditions. A different passage was selected for every session. To circumvent order bias and practice effects due to the use of the same passage the conditions were arranged temporally such that the condition which was last in one session was first in the next. Thus the temporal patterning of conditions were ASC—rest pause—NS in the first session, ASC—rest pause—NS in the second and so on. The number of blocks for each five minute was recorded separately. Total number of blocks for both the conditions were counted at the end of each session.

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The result of the experimental therapy comprising of 8 sessions is given below:

Sessions		*NS*	*ASC—NS*
1	. 213	224	—11
2	280	280	0
3	385	369	+ 16
4	511	451	+60
5	422	422	0
6	142	118	+24
7	250	101	+149
8	133	95	+38
			+276

The column 'ASC gives number of blocks under aversive stimulus-contingent condition. The column 'NS' gives number of blocks under no shock condition, and the column ASC-NS gives the difference between the two conditions in the sessions.

$$\text{Average difference (in favour of shock condition)} = \frac{+276}{8} = +34 \text{ blocks (nearly)}$$

Thus there is a general tendency for number of blocks to increase under ASC condition. Intra session analysis of the data in that condition showed that there is a systematic decrease in the first session, but similar tendency was not present in other sessions. An examination of the table reveals that there were more blocks in ASC condition as compared to NS condition in the session 1, but this difference was reversed in most of the other sessions (sessions 2 and 5 exhibit no difference in the conditions).

Because of the exhibited tendency of the case to stutter more under ASC condition, the therapeutic strategy was changed. He was put on prolongation therapy. In this therapy the case was instructed to read a passage for 25 minutes with prolongation of each sound. Within seven sessions the stutterer showed complete elimination of stuttering. An attempt is now being made to effect a carry over from clinic situation to the everyday situation by asking the case to use same strategy (Prolongation) in speaking situation. The case will be instructed to gradually decrease prolongation till he assumes normal rate in conversational speech.

There was a feature in this stutterer which may prove to be a hurdle to most of the existing theories on stuttering. When he was asked to read a passage without voice but with normal articulatory movements he exhibited abnormal articulatory postures akin to those seen in prolongation and repetitions. In addition he exhibited abnormal mandible depression, eyebrow rising, rapid eye blinks as under normal reading conditions. This puts the Cherry and Seyers (1956) auditory perceptual defect theory and their consequent emphasis on auditory feedback as a significant factor in etiology of stuttering in a difficult situation. This is because of the fact that all the essential aspects of stuttering were present in the absence

of auditory feedback. Similarly, Eisenson's (1958) perseverative theory cannot explain the presence of stuttering while reading without voice, as no communicative responsibility is implicated in the act.

However, the conception that stuttering is a fluency disruption occasioned by conditioned negative emotion (Brutten and Shoemaker 1967) can account for the observed feature adequately. This theory of stuttering emphasizes stimulus control of the behaviour. Hence reading normally with voice and reading without voice but with normal articulatory movements, the same passage should not make much difference in the response pattern, as stimuli in both conditions are similar.

It is hypothesized that anticipation phenomenon widely reported in the literature under silent reading conditions (i.e., reading without voice and without articulatory movements), stuttering while reading without voice but with normal articulatory movements as seen above, and fullblown stuttering block under normal reading conditions can be put along a 'Total-fractional response continuum'. According to this thinking a stuttering block under normal reading or speaking condition is a total response. Anticipation of the stuttering block under silent reading condition is a fraction of this total response. And the response of the present case shown while reading without voice but with normal articulatory movements is a fractional response of the same total response, but is a bigger fraction when compared to that seen in silent reading conditions. Such an analysis is suggested by Osgood's hypothesis of detachable components of a total conditioned response (Osgood 1964).

In summary, it may be said that an experimental electrical aversion therapy of a case with stuttering behaviour resulted in increasing number of blocks during the therapy sessions. Consequently, this method of treatment was discontinued. An interesting feature observed in the case was that he exhibited certain elements of stuttering even while reading without voice, but making appropriate articulatory movements. It is suggested that a number of existing theories would not be able to account for the observation while a learning theory based approach would.

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