A STUDY OF EXPERIENCED REALITY OF AUDITORY HALLUCINATIONS IN SCHIZOPHRENICS

A. Ramanathan, M.D., D.P.M.

SUMMARY

30 Schizophrenics having verbal auditory hallucinations and satisfying the criteria of Feighner et al. (1972) were examined for the experienced reality of auditory hallucinations and the influence of certain variables on such reality. Number of hallucinating days per month, fast movement of time during hallucination, presence of running commentary voices, interference in self-care and social activities due to the voices and degree of success in manipulation and avoidance (coping themes) appreciably influenced the experienced reality. The voices were more real than unreal.

The experienced reality of auditory hallucinations in schizophrenics shows variations (Bleuler, 1950; Aggrenaes 1972; Ramanathan et al., 1981; Ramanathan, 1982a). Aggrenaes et al. (1976) described eight qualities of experienced reality with positive and negative values-positive values for reality and negative values for unreality. Some of the variables associated with the reality of auditory hallucinations were discussed earlier (Ramanathan, 1982a) and reality was found to be related to behaviour during hallucinations (Ramanathan, 1982b).

There are many variables associated with auditory hallucinations. The duration of illness, the details of auditory hallucinations, presence of other varieties of hallucinations, level of insight into illness, interference in daily life due to voices, the degree of success in coping behaviour and the details of treatment should be considered. Psychoticism scores, anxiety prior to the voice, reality-testing ability, noise-level of the environment (Slade, 1975), social status (Linn, 1977), associated delusions (Lewinson, 1969) and anticipation of the voice (Arieti, 1975) have been mentioned.

The present study aims at examining the constellation of qualities of experienced reality of auditory hallucinations in schizophrenics and the influence of certain variables on such constellation. The sample for the present study was different from that for the previous study (Ramanathan, 1982a) and the variables included were more in number.

MATERIAL AND METHOD

30 schizophrenics who attended the outpatient department of the Institute of Mental Health, Madras in the months September-December, 1982 were selected for the study and the criteria for inclusion were as follows:—

1. Patient should be 'definitely' schizophrenic as per the criteria of Feighner et al. (1972).
2. He/she should be currently having verbal auditory hallucinations with or without hallucinations of other varieties and the last episode should have occurred within 24 hours prior to the interview.
3. He/she should not have undergone psycho-surgery.
4. He/she should not have been treated with electro-convulsive therapy in the month prior to the interview.
5. He/she should be an urban resident.
6. He/she should be co-operative for interview and testing.

36 patients fulfilled the first 5 criteria and 6 patients were excluded for lack of cooperation out of these 36 patients.
The lack of co-operation was in the form of unwillingness to reveal the contents of voices, irrelevant talk and irritability.

There were 21 males and 9 females. The samples consisted of 25 Hindus and 5 Christians. The range for age was 19-52 years. The mean age was 35 years and the median was 34.5 years. Their educational status ranged between 3rd Standard to graduation. The mean duration of illness was 7.21 years and the median was 5.5 years. The mean duration of hallucinations was 4.90 years and the median was 2.37 years. The voices were positioned outside the body for 23 patients and inside the body for 11 patients. There were visual hallucinations in 10 patients, olfactory hallucinations in 6 patients, non-verbal auditory hallucinations in 7 patients and tactile hallucinations in 5 patients. These 30 patients were undergoing treatment but continued to experience verbal auditory hallucinations and also other hallucinations. These verbal auditory hallucinations were 'Schneiderian' (1959) in 18 patients only. The present sample differed from that for the previous study (Ramanathan, 1982a) in inclusion of non-Hindus, longer duration of illness and hallucinations, presence of inner voices, non-verbal auditory hallucinations and other hallucinations, inclusion of patients with non-Schneiderian hallucinations and administration of drugs and electro-convulsive therapy.

To assess the reality of auditory hallucinations, the clinical technique described by Aggerenaes et al. (1976) was used. The qualities of reality as applied to auditory hallucinations were as follows:

1) Quality of sensation: A positive score was given if the patient reported the immediate feeling after the last episode of hallucination that the experience was a perception and not an idea, a thought, a memory, a fantasy or some other experience different from sensory perception

2) Quality of behavioural relevance: A positive score was given if the patient reported that the experience of the voice was of relevance for his emotions and/or needs and/or actions in the actual or in some potential situation.

3) Quality of Publicness: A positive score was given if the patient felt it to be certain at the time of or immediately after the hallucination that anybody else possessing normal hearing faculty would be able to hear the voice if he were within reach of it.

4) Quality of objectivity: A positive score was given if the patient felt at the time of or immediately after the hallucination that the voice or the 'speaker' with at least two modalities of sensation.

5) Quality of existence: A positive score was given if the patient felt at the time of or immediately after the hallucination that the voice or the 'speaker' would have existed even when he or others did not experience the same.

6) Quality of independence: A positive score was given if the patient felt at the time of or immediately after the hallucination that the experience was not the result of himself being in a 'quite unusual mental state.'

7) Quality of involuntarily of experience: A positive score was given if the patient felt at the time of or immediately after the hallucination that it was impossible or extremely difficult for him to alter or dismiss the experience simply by wishing it to be altered or dismissed.

8) Quality of involuntarily of experienced item: A positive score was given if the patient felt at the time of or immediately after the hallucination that it was impossible for him to alter the voice simply by wishing it altered.

The scores given for reality of the voice were positive, negative or doubtful.
Reality-testing ability was measured by F+% in Rorschach test as it is the best single indicator of reality-testing (Carr, 1975). For measurement of personality dimensions, Eysenck’s Personality Questionnaire (Eysenck & Eysenck, 1976) was used. Socio-economic status and educational status were scored with the help of the scale devised by Gupta & Sethi (1978). Insight into illness was measured with the help of Present State Examination Schedule (Wing et al., 1974). Ray et al. (1982) described six themes of coping based on the individual’s general orientation. Each theme had stronger and weaker versions. The six themes with their weaker and stronger versions in parentheses were rejection (resisting and aggressive), control (manipulating and monitoring), resignation (accepting and giving up), minimisation (rationalising and dismissing), avoidance (selective and blanket) and dependency (trusting and leaving). The scoring of the coping behaviour of the patients was done on the basis of these 6 coping themes. Intelligence was measured by Raven’s Progressive Matrices.

An interview schedule was constructed and each patient was interviewed along with one or more family members in order to elicit reliable information. Patients were instructed to score their level of anxiety prior to hallucination, interference due to the voice in self-care, occupation, social activities and leisure-time activities and the pre-occupation about the voice outside the hallucinatory episodes, the effects of drugs, electroconvulsive therapy and native treatment on hallucinations, the usefulness of individual coping themes and the emotional intensity during and outside the hallucinatory episodes on 4 point scales (0-3 scores). Loudness, pitch and clarity of the voice and environmental noise-level at the time of hallucinations were scored by patients on 3 point scales (1-3 scores). Socio-demographic variables, family history of schizophrenia, delusions related to hallucinations, duration of illness, duration of hallucinations, the interval between the onset of illness and onset of hallucinations, language of the voice, duration of each episode of hallucinations, number of episodes per day, hallucinating days per month, time-sense during hallucination, position of voice, sex and social status of the ‘speakers’, number of speakers in total, number of speakers each time, knowledge of the speakers, content of the voice, provoking agents like objects or situations, other hallucinations, effects of physical illness (e.g., fever) on hallucinations, number, variety and dosage of drugs, administration of electro-convulsive therapy, biological and psychological forms of native treatment, anticipation of the voice, interval between increase in anxiety level prior to the voice and the appearance of the voice, presence of suicidal ideas, history of suicidal attempts, types of emotions during and outside the voices, reaction to phenomenon of the voice differentiated from reaction to content and coping behaviour (emotions, overt activities and covert nonphysical mental activities during outside and immediately prior to the hallucinations) were recorded. Psychological testing was done following the interview. Each patient was engaged for 2 to 2½ hours in interview and testing.

As the number of variables chosen was more than the number of patients the statistical analysis was done in stages. Each variable mentioned already was tested for its association with the number of positive scores on reality qualities using parametric tests of significance. Those variables which were associated with the positive scores on reality qualities at 5% level of significance were isolated. Multiple regression analysis was perform-
ed keeping these isolated variables as explanatory variables and the number of positive scores on reality qualities as the dependent variable, with the help of IBM/370/155 computer at Indian Institute of Technology, Madras. The explanatory variables which were contributing appreciably were tested for their association with positive scores on individual qualities of experienced reality.

RESULTS

Table-I shows the constellation of positive, negative and doubtful scores of the 8 qualities of experienced reality of verbal auditory hallucinations in 30 patients. There were more positive scores than negative and doubtful scores. The quality publicness had the least number of positive scores.

| Quality of Experience | Positive | Negative | Doubtful |
|-----------------------|----------|----------|----------|
| Sensation             | 30       | 0        | 0        |
| Behavioural relevance | 30       | 0        | 0        |
| Publicness            | 7        | 20       | 3        |
| Objectivity           | 23       | 6        | 1        |
| Existence             | 27       | 1        | 2        |
| Independence          | 23       | 7        | 0        |
| Involuntarity of Experience Item | 27 | 3 | 0 |
| Total (N=240)         | 195      | 39       | 6        |

Variables related to treatment were not significantly influencing the positive scores on reality qualities. Patients who found physical methods of the treatment to be helpful reported that the frequency and duration of individual episodes of auditory hallucinations were altered by treatment and reality of hallucinations and other details were unaffected.

Pitch of the voice, number of hallucinating days per month, time-sense during hallucinations, interference due to voices in selfcare, social activities and leisure time activities, intensity of emotions outside the hallucinatory episodes, variety of emotions during the hallucinations, success in manipulation and avoidance (coping themes) and 'running commentary' voices were associated with the number of positive scores on reality qualities at 5% level of significance on parametric tests of significance and these variables were considered as the explanatory variables in multiple regression analysis. As the scores for the first two qualities of reality did not show any variations, they were omitted and the number of positive scores on the remaining six qualities (Nos. 3-8) was kept as the dependent variable. The results of multiple regression analysis are given in Table-II.

Pitch of the voice, number of hallucinating days per month, presence of 'running commentary' voices, interference due to voices in self-care, and social activities, intensity of emotions outside the hallucinations, intensity of anger during hallucinations, and use of manipulation and avoidance as coping themes had positive influence on the positive scores on reality qualities i.e. an increase in scores on these variables increased the number of positive scores on reality qualities making the hallucinations more real. Degree of success in avoidance and manipulation, fast and slow movement of time in contrast to usual movement, interference in leisure time activities and intensity of sadness and fear during hallucinations had negative influence on positive scores on reality qualities i.e. these variables made the voices less real.
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**TABLE 2.** Regression coefficients, standard errors and R square values of 16 variables on the number of positive scores on 6 qualities of experienced reality of auditory hallucinations.

| No. | Explanatory variables                        | Regression coefficients | Standard errors | R. square values |
|-----|---------------------------------------------|-------------------------|-----------------|-----------------|
| 1.  | Degree of success in avoidance              | -0.612                  | 0.381           | 0.1906          |
| 2.  | Pitch of the voice                           | 0.120                   | 0.270           | 0.1427          |
| 3.  | Number of hallucinating days per month      | 0.006                   | 0.029           | 0.2235          |
| 4.  | Fast movement of time (Fast +1 ; Usual −1)  | -0.084                  | 0.445           | 0.2818          |
| 5.  | Slow movement of time (Slow +1 ; Usual−1)  | -0.300                  | 0.362           | 0.2872          |
| 6.  | Running commentary (0, 1)                   | 0.498                   | 0.388           | 0.3537          |
| 7.  | Interference in self-care                   | 0.162                   | 0.238           | 0.4239          |
| 8.  | Interference in social activities           | 0.208                   | 0.234           | 0.5463          |
| 9.  | Interference in leisure time activities     | -0.154                  | 0.227           | 0.5496          |
| 10. | Intensity of emotions outside the voices    | 0.109                   | 0.225           | 0.5787          |
| 11. | Intensity of anger during hallucination     | 0.042                   | 0.192           | 0.5825          |
| 12. | Intensity of fear during hallucination      | -0.085                  | 0.343           | 0.5980          |
| 13. | Intensity of sadness during hallucination  | -0.054                  | 0.149           | 0.6072          |
| 14. | Use of manipulation (0 or 1)                | 0.347                   | 0.747           | 0.6300          |
| 15. | Degree of success in manipulation           | -0.531                  | 0.280           | 0.7166          |
| 16. | Use of avoidance (0 or 1)                   | 0.476                   | 0.413           | 0.7447          |
|     | Constant                                    | 3.458                   |                 |                 |

The R square value was 0.7446 indicating that 74% of variations in reality of the voices were explained by these variables. Regression was significant at 10% level of significance (F=2.37).

Degree of success in avoidance, number of hallucinating days per month, fast movement of time during hallucinations, running commentary voices, interference in self-care, interference in social activities and degree of success in manipulation were appreciably contributing to R square value.

Of these variables, running commentary voices and fast movement of time were associated with positive scores on individual qualities of experienced reality. 'Running Commentary' voices were present in 10 patients and absent in the remaining 20 patients. The group having 'running commentary' voices had more positive scores on the quality of publicness (mean=0.5; S. D. =0.53) than those without such voices (mean=0.1; SD=0.31) and the difference was statistically significant (t=2.64, p<.02). In other words those with running commentary voices tended to feel that others potentially could hear the voices. Movement of time during the hallucinations was usual in 18 cases, fast in 7 cases and slow in 5 cases. Those for whom the movement of time was fast had less positive scores for the quality of independence.
(mean 0.43; SD=0.53) than those for whom the movement was usual (mean=0.89; SD=0.32) and the difference was significant (t=2.65; p<.02). In other words those with fast movement of time tended to think that the hallucinatory experience was the result of 'quite unusual state of mind'. Those for whom the movement was slow had less positive scores (mean=0) for the quality of publicness than those for whom the movement was usual (mean=0.33; SD=0.33) and the difference was statistically significant (t=2.21; p<.05). Those with slow movement of time tended to feel that others could not have heard the voices. These 3 groups did not differ from each other in the reported length of individual episodes of auditory hallucinations.

DISCUSSION

Only 2.5% of the answers on reality qualities were scored as 'doubtful'. Educational status was not related to the number of positive qualities of reality significantly. These indicate that the questions on experienced reality were easily understood by the patients selected for this study.

The findings of more positive scores in total and less positive scores for the quality of publicness were in concordance with previous reports (Aggrenaes, 1972; Ramanathan et al., 1981; Ramanathan, 1982a). That the number of hallucinating days per month had positive influence on the positive scores on reality qualities was reported earlier (Ramanathan, 1982a). Duration of illness and presence of anxiety prior to voices were found to be significantly negatively influencing the positive reality qualities in the previous study (Ramanathan, 1982a) and these findings were not replicated in the present study. This could be due to the differences between the two samples.

The poor effects of physical methods of treatment of the reality and other details of voices though they had appreciable affect on the frequency of and duration of episodes of hallucination should mean that the function of drugs and electro-convulsive therapy is more suppression of the phenomenon of hallucinations.

The effects of variety and intensity of emotions, timesense during the hallucinations, and the number of hallucinating days per month on the positive reality qualities shed light on the operation of neurophysiological variables. Running commentary voices might be psychologically determined.

As the sample was small and consisted only of co-operative patients chosen on the basis of rigid criteria, it was difficult to generalise the findings. Studies on larger series are indicated and the present study offers pointers for future research.

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