

## REALITY OF AUDITORY HALLUCINATIONS IN SCHIZOPHRENIA

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### SUMMARY

25 untreated urban living schizophrenics fulfilling the criteria of Feighner *et al.*, having Schneiderian auditory hallucination were studied with the aim of examining the experienced reality of auditory hallucination and the influence on this reality of certain variables. It was found that the hallucinations were more real than unreal. Duration of illness, presence of anxiety prior to hallucination, reality testing ability, duration of each episode of hallucination, and socio-economic status scores influenced the reality negatively. The number of hallucinating days per month, position of voice outside sensory range, psychoticism scores, insight scores (higher scores for poorer insight) and duration of hallucination influenced the reality positively. The variables explained 72% of the variations in reality of hallucinations. Findings are discussed and suggestions for future studies are offered.

When reality and hallucination conflict, it is usually the hallucination that is considered as real. At one extreme is the patient for whom the hallucinated voice is like any other voice and at the other extreme is the patient who recognises the pathological nature of the hallucination, particularly the origin from or connection with his own thoughts (Bleuler, 1950). Aggernaes (1972) reviewed the literature on the concept of reality. Aggernaes *et al* (1976) argued that real-unreal was not one dimension or one dichotomy but at least 8 dimensions or dichotomies. The qualities of reality and qualities of unreality were called positive qualities of reality and negative qualities of reality respectively. Aggernaes (1972) found that not all the schizophrenics scored positively on all the qualities of experienced reality of hallucinations. It was found in the previous study (Ramanathan *et al.*, 1979) that there were differences between schizophrenics in the scores on reality qualities of auditory hallucinations and the duration of hallucination influenced the constellation of reality qualities. The effect of drugs was not controlled in the previous study and also the variables were a few in number. The present study is an improvement upon the previous one.

Chronicity of illness and hallucination, the frequency and nature of auditory hallucinations and the level of insight into illness can be expected to influence the reality of the voices. Socio-economic status can influence perception. Slade (1975) found that impaired reality testing ability and high psychoticism scores were associated with the presence of hallucinations. Psychoticism scores are influenced by age and sex (Eysenck & Eysenck, 1976). Slade (1975) described that hallucinations were preceded by an increase in anxiety level. Hence all these should be taken into account when one studies the reality of auditory hallucinations.

The present study was aimed at examining the constellation of reality qualities of auditory hallucinations in Schizophrenia and to examine the influence on such constellation of (1) duration of illness, (2) duration of hallucination, (3) frequency of hallucination as to daily occurrence or otherwise, (4) frequency as to the number of episodes per day, (5) duration of each episode of hallucination, (6) position of voice in space (within or outside sensory range), (7) knowledge of the 'speakers' (known or unknown person's voice), (8) level of insight into illness, (9) psychoticism

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scores, (10) reality-testing ability, (11) presence of anxiety prior to hallucination, (12) age, (13) sex and (14) socio-economic status.

#### MATERIAL AND METHOD

The sample consisted of 25 schizophrenics who were collected from the out-patient department of the Institute of Mental Health, Madras between April and October 1980. The criteria for inclusion were as follows :

- (1) Patient should be definitely schizophrenic as per the criteria of Feighner *et al.* (1972).
- (2) Patient's age should be between 15 and 45 years.
- (3) He/she should be currently hallucinating and the last episode of hallucination should have occurred within 24 hours prior to the interview.
- (4) He/She should have verbal auditory hallucination only and part or whole of the content should be characteristic as described by Schneider (1959).
- (5) The content of voice should be independent of the patient's mood.
- (6) The voice should be clearly located in external space and should be audible and comprehensible.
- (7) He/She should remain untreated with any physical method for his/her illness viz. drugs, convulsive therapy and/or psycho-surgery.
- (8) He/She should be cooperative for interview and testing.
- (9) He/She should be an urban resident.
- (10) He/She should be a Hindu.

There were 17 males and 8 females. The mean duration of illness was 2.8 years and median was 2 years. The mean duration of hallucination was 1.8 years and the median was 1 year.

To assess the reality of auditory hallucinations, the clinical technique described

by Aggernaes *et al.* (1976) was used. The qualities of reality 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 under favourable circumstances he would be able to perceive 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 involuntarity 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 involuntarity 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 with F+ % in Rorschach test as it is the best single indicator of reality testing ability (Carr, 1975). As F+ % could be influenced by the variations in the total number of responses on Rorschach Cards, the number of responses also was included as one of the variables studied.

Eysenck's Personality Questionnaire (Eysenck & Eysenck, 1976) was used for measuring psychoticism. As the Lie scores influence the psychoticism scores, Lie scores were included in the list of variables studied.

For assessing the degree of insight into illness Present State Examination Schedule (Wing *et al.*, 1974) was used. For full insight the score was 0. When the patient denied nervous condition entirely the score was 3.

Socio-economic status was assessed with the scale devised by Gupta and Sethi (1978).

Clinical interview with the help of a standard proforma was the method adopted. Each patient was interviewed along with one or more family members for ensuring reliable information. Each patient was questioned in detail about hallucinations after establishing rapport with him or her. It was ascertained that the patient was not reporting a dream. His or her level of consciousness during hallucination was as-

certained by questioning about how the surroundings appeared then. For eliciting the details of reality the least episode was questioned about. Patient's experience within the hallucinatory episode only were recorded and his or her interpretations outside the episode were not taken into account. Psychological testing was done immediately after the clinical interview.

Stepwise multiple regression analysis using IBM 350/165 computer at the Indian Institute of Technology, Madras was carried out taking the number of positive scores on reality qualities as the dependent variable Y and other variables as explanatory variables.

RESULTS

The constellation of reality qualities for 25 patients is presented in Table-1.

TABLE 1—Constellation of Reality Qualities for 25 patients

Qualities	Positive	Negative	Doubtful	
Sensation ..	25	0	0	
Behavioural relevance ..	25	0	0	
Publicness ..	10	8	7	
Objectivity ..	18	5	2	
Existence ..	17	4	4	
Independence ..	20	5	0	
Involuntarity .. of Experience	23	0	2	
Involuntarity .. of Experienced item	22	0	3	
Total ..	160	22	18	=200
	(80%)	(11%)	(9%)	(100%)

The quality of publicness had the least number of positive answers. Only 9% of the answers were 'doubtful' and 80% of the answers were positive.

The following were the results obtained from stepwise multiple regression analysis: Duration of hallucination, presence of an-

xiety prior to hallucinations, F+ %, duration of each episode of hallucination in minutes, number of hallucinating days per month, Lie scores in Eysenck's Personality Questionnaire (EPQ), voices outside sensory range, total number of responses in Rorschach, psychoticism scores, insight scores, duration of hallucinations in months and socio-economic status scores raised the R square value to 0.72147, i.e. 72% of the variations in positive scores on reality qualities were explained by the above said variables. Voices within sensory range, number of hallucinatory episodes per day, known person's voice, age, male sex and unknown person's voice were not contributing appreciably and they raised the R square value from 0.72147 to 0.72914, i.e. the inclusion of these variables raised the explained variations in positive scores on reality qualities from 72% to 73% only.

The regression coefficients and standard errors of the 12 variables which contributed appreciably are given in Table-2.

Duration of illness, presence of anxiety prior to hallucination, reality-testing ability as indicated by F+ % in Rorschach, duration of each episode of hallucination, Lie scores in EPQ, number of responses in Rorschach and socio-economic status scores had negative influence on the number of positive reality qualities i.e. an increase in these variables reduced the number of positive reality qualities. Number of hallucinating days per month, voices outside sensory range, insight scores, psychoticism scores and duration of hallucinations in months had positive influence on the number of positive reality qualities, i.e. an increase in these variables produced an increase in positive reality qualities.

As the duration of illness had a negative influence and the duration of hallucination had the positive influence on the number of positive reality qualities of hallucination, further analysis of the data was done. The new variable that pressed for attention was

TABLE 2—Regression coefficients & standard errors of 12 Explanatory Variables

S. no.	Explanatory variables	Regression coefficients	Standard errors
1.	Duration of illness in months .. ..	-0.05246*	0.01786
2.	Presence of anxiety prior to hallucinations (Scores 0 or 1) .. ..	-1.89443*	0.77310
3.	F + % in Rorschach .. ..	-0.02273	0.01295
4.	Duration of each hallucination in minutes .. ..	-0.01944	0.00968
5.	Number of hallucinating days/month .. ..	+0.07562	0.04114
6.	Lie scores in EPQ .. ..	-0.08392	0.08691
7.	Voice outside sensory range (Scores 0 or 1) .. ..	+0.52872	0.59442
8.	Number of responses in Rorschach Test .. ..	-0.00453	0.01431
9.	Psychoticism scores .. ..	+0.19338	0.20782
10.	Insight scores .. ..	+0.43622	0.63737
11.	Duration of hallucinations in months .. ..	+0.01603	0.02208
12.	Socio-economic status scores .. ..	-0.00438	0.00750
	Constant .. ..	8.31450	

\*p < .05 Significant.

the interval between the onset of illness and appearance of hallucination. Keeping the number of positive reality qualities as the dependent variable Y and the interval between onset of illness and appearance of hallucinations in months as the explanatory variable X, regression equation was worked out.  $Y = 6.69754 - 0.0261 X$ . The said interval had negative influence on the number of positive reality qualities.

Anxiety prior to hallucination had negative influence on the number of positive reality qualities. 13 patients reported and 12 patients did not report anxiety prior to hallucination. Those with anxiety had less a number of positive scores on the quality of publicness (4/13) than those without anxiety (6/12). They also had fewer positive scores on the quality of existence (7/13) than those without anxiety (10/12). They

did not seem to differ in the scores for other qualities especially the quality of independence which is concerned with 'unusual state of mind'. In other words many persons with anxiety prior to hallucinations felt at the time of hallucinations that it was a private experience and the voice or the source of voice could not exist when nobody experienced it at all.

#### DISCUSSION

The auditory hallucinations studied were more real than unreal. The findings of more positive than negative and doubtful scores and the least number of positive scores for the quality of publicness were in agreement with the previous studies. (Aggernaes, 1972; Ramanathan *et al.*, 1979).

With chronicity of illness hallucinations become colourless and they might lose their reality. But the duration of hallucinations had a positive influence on the reality of the voice and this could be due to the possibility that the patient experiments with the voice and his doubts are reduced in course of time. The interval between the onset of illness and the appearance of hallucination was negatively influencing the reality of the voice. A shorter interval means that the disease process is more 'malignant'. What happens in this interval is more important than its length. Also the disease process continues even after the onset of hallucinations. Hence the difference between the duration of illness and the duration of hallucination is more than the mere interval between onset of illness and appearance of hallucination.

Slade (1975) discussed the 'threshold' model for auditory hallucinations. When the level of anxiety increases above the threshold, hallucination appears and this is followed by a reduction in anxiety level. Patients who reported anxiety prior to hallucination, because of fluctuations on either side of the threshold, should be in a better position to understand the phenomenon than those without anxiety. This

should be the reason why they tended to feel the voice as a private experience and not existing when not experienced. But they did not tend to attach etiological importance to the anxiety prior to the voice. Even those patients who did not report anxiety might have had anxiety that was too low to be observed. Had the author attempted to quantify the anxiety level, a clearer picture would have emerged.

Reality testing ability had negative influence on reality of the voice and this requires no elaboration. The total number of responses in Rorschach also had negative influence on reality of the voice. Generally the number of responses indicates the productive capacity of an individual, the more intelligent usually being more productive (Klopfer and Davidson, 1962). The more intelligent person should feel that the voice is less real comparatively.

The higher psychoticism scores were, the more real were the hallucinations. Lie scores have a negative influence on psychoticism scores and can reduce the number of positive reality qualities by reducing psychoticism scores and hence the negative influence of Lie scores on reality of the voice.

The reason why the number of hallucinating days per month had a positive influence on the reality of hallucination is obvious.

The longer duration of an individual episode of hallucination means that the persons can search more for the possible source of the voice than a fellow hallucinator with shorter duration of each episode. With repeated failures such a person should start doubting the reality of the voice and hence the negative influence of this variable on the reality of the voice.

Insight scores are higher for poorer insight and hence the positive influence on reality of hallucinations.

With higher socio-economic status scores perceptual sophistication goes up and this should be the reason for the negative influence on the reality of the voice.

Studies in future should include variables like level of intelligence and symptoms present prior to and along with hallucinations and the anxiety prior to hallucination should be quantified. Follow-up studies connecting the point of no hallucination and the point of appearance of hallucination should be meaningful.

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