Out-of-the-Body Experiences

Implications for a Theory of Psychosis

Charles McCreery, DPhil

Formerly Lecturer in Experimental Psychology

Magdalen College, Oxford

Oxford Forum

Chapter 5
Dissociation of arousal in the laboratory I: Self-report data

The experimental induction of out-of-the-body experiences

In this chapter I shall describe an experiment I carried out which was designed to induce anomalous perceptual experiences, including out-of-the-body experiences, in the laboratory, and to monitor various electrophysiological variables during this process (McCreery and Claridge 1996a; 1996b).

The experiment was not designed as a direct test of the theory of OBEs put forward in the preceding chapters, as it was planned and to some extent executed before the central idea of that theory had occurred to me. Instead, it was designed to test the hypothesis that subjects reporting at least one prior OBE (OBErs) would display a dissociation of arousal between the two cortical hemispheres, under the conditions to be described below, and in particular a relative activation of the right hemisphere.

The premise underlying this prediction was that the occurrence of an OBE is a marker of a relatively high degree of *schizotypy*.

In the Glossary I have defined schizotypy as 'a theoretical construct, postulating a dimension of normal personality which may or may not predispose the subject to episodes of psychosis.' I have used the words 'may or may not' to highlight the fact that someone may score highly on one or more questionnaire measures of schizotypy, and yet never experience an episode of psychosis. In fact, following my research, I proposed the term 'happy schizotype' to characterise many of the subjects who took part in the two

research projects, one questionnaire-based, one experimental, which I carried out in this area[1].

In contrast to the EEG studies of OBE subjects described in the previous chapter, the purpose of the present experiment was to look for changes of state over time, rather than discrete events, and without necessarily expecting these changes to be peculiar to the ecsomatic state. It was considered that an advance would have been made if individual differences in electrophysiological responding could be identified which helped to discriminate OBErs from non-OBErs.

Concerning the specific prediction which was made with regard to the relative activation of the right hemisphere, the rationale for this will be given in the next chapter.

Although the experiment was not designed as a direct test of the theory of OBEs presented in the preceding chapters, it nevertheless produced data which is relevant to it.

The subjects

A total of 40 subjects took part in the experiment. Of these, 20 were people who reported having had at least one prior out-of-the-body experience, and I will refer to them as 'the OBE Group'. They can be subdivided into two sub-groups:

The 'Postal OBE subjects': These consisted of fourteen people selected from 408 who had taken part in an earlier, questionnaire phase of the project. These 408 people had responded to public appeals, mainly in print media, for people reporting at least one OBE. The largest sub-group (N=180) consisted of readers

[1] McCreery 1993.

of *She* magazine; next in order of size were readers of the *Daily Express* (N=56), and viewers of 'Breakfast Time' TV (32). The remainder were drawn from a variety of sources, including local newspaper readers in Oxford and elsewhere.

The 14 Postal OBE subjects who took part in the experiment were largely selected for the reason that they lived within a travelling distance of Oxford small enough to mean that they did not require to stay in Oxford overnight.

Other OBE subjects: The remaining six of the twenty OBE subjects who took part in the experiment were recruited by word of mouth.

The Control subjects: these consisted of twenty people who reported never having had an OBE. I will refer to them as 'the Control Group', or 'Controls'.

Five of the twenty Controls had taken part in the earlier, questionnaire phase of the project, and were called 'Postal Controls'. They were people who had responded to media appeals for subjects who reported that they had *not* had an OBE.

An additional Control subject was a staff member at the Fairmile Hospital, Wallingford, who had taken part in the earlier, questionnaire phase of the project.

Another four of the twenty controls were recruited through the National Schizophrenia Fellowship. The remaining ten were recruited by word of mouth.

Subject matching

Each member of the OBE Group was matched individually with a Control of the same gender, and of as nearly as possible the same age and social class.[2] In eleven cases the age difference was not more than two years, and in seven it was between three and five. The remaining two cases consisted of a 21-year-old member of the OBE Group matched with a 27-year-old Control and a 60-year-old member of the OBE Group matched with a 69-year-old Control.

The mean age of the OBE Group was 41.6 years (SD =15.47), and of the Control Group 41.8 years (SD =15.48). The youngest subject was 20 and the oldest 75. There were 15 women and five men in each group.

Priority was given to the matching of OBE Group subjects and Controls with respect to age and gender. However, an attempt was also made to balance the two groups as far as possible with regard to the proportions of subjects in each social class.

None of the subjects were paid to participate, but subjects living outside Oxford, where the experiment took place, had their travelling expenses reimbursed.

Experimental design

Before describing the results, I will give a brief account of the experimental set-up.

The experimental protocol was designed to replicate as far as possible that developed by John Palmer and his co-workers at the University of Virginia in the course of a number of experiments on OBEs carried out during the 1970s[3].

---

[2] Social class was determined by reference to the *Classification of Occupations* published by the Government Statistical Service (HMSO 1980).

[3] Palmer and Vassar 1974; Palmer 1975; Palmer and Lieberman 1976.

The basis of Palmer's method consisted in having the subject lie on a couch and listen to a relaxation tape, following which he/she was exposed to approximately ten minutes of mild sensory limitation. In a series of experiments carried out by Palmer and his colleagues using student subjects, between 40 and 60% positively endorsed the question:

> 'Did you at any time during the experiment have the feeling that you were literally outside of your physical body?'

Since Palmer and his colleagues had reported high success rates in their experiments it was decided that my own experimental procedure should reproduce theirs as closely as possible.

My study had two complementary aspects: the self-report data, which attempted to measure the subjective changes induced by the experimental procedure; and the electrophysiological data, which were designed to produce evidence of objective correlates of the subjective changes.

Since both sorts of measure were attempting to tap the same underlying phenomena, the two sorts of data can only be fully understood in relation to one another. The present chapter will therefore focus on the self-report aspect of the experiment, and the next two chapters will then consider the electrophysiological data in relation to them.

The experimental set-up

Before the start of the experiment, electrodes were attached to the scalp and the fingers of one hand of the subject, and the leads from the electrodes were plugged into a polygraph (EEG machine). Details of the placement and purpose of the electrodes will be given in the next chapter.

After attachment of the electrodes, subjects lay on a garden lounger, set nearly horizontal, in an experimental cubicle adjoining a small office. The

cubicle was shielded against possible electromagnetic radiation originating in other parts of the building, which might have interfered with the electronic equipment.

Subjects wore translucent goggles, onto which light was shone, to produce what is called a visual *ganzfeld,* i.e. a homogeneous visual field, without any patterning or texture and of a uniform brightness and colour.

The experimental procedure was designed to produce a state of physical and mental relaxation, accompanied by a condition of mild sensory deprivation.

The relaxation phase

The experiment started with subjects listening to a 20-minute relaxation tape. The wording of this tape was taken, with a few minor alterations, from Palmer and Vassar (1974). The first part of the tape was based on the Jacobsen method[4], in which successive groups of muscles are tensed and relaxed. After the physical relaxation exercises the subject carried out a series of mental relaxation exercises, such as imagining lying on a beach.

The sound phase

Following the 20-minute relaxation procedure, subjects were exposed to 10 minutes of 'pink noise'. This is white noise with the upper frequencies omitted. (White noise, i.e. random noise of equal intensity throughout the audible range, is generally experienced as unpleasant.)

Superimposed on this background noise was a sine wave of approximately 350 Hertz (cycles per second)[5]. The frequency of the sine wave was slightly

[4] Jacobsen 1929.

[5] 350 Hertz is approximately the frequency of the F above middle C on a piano.

different in the two ears, producing the effect of a ‘beat’, i.e. rhythmic waxing and waning of the volume of the sine wave, at a frequency of 4 Hertz.

The sound heard during the 10-minute sound phase was kindly provided by the Monroe Institute, founded and run by Mr. Robert Monroe in the USA, which had previously provided the sound used in the Palmer experiments. The overall effect of the 10-minute sound phase was likened by more than one subject to the sound in the hold of a ship.

Subjects had been instructed that during this final 10-minute period they should imagine themselves floating up to the ceiling of the cubicle and looking down on their physical body lying on the garden lounger.

Subjective data

I will devote the next few sections to discussing some of the subjective data which were obtained from the experiment. These were collected in the form of written responses to a short questionnaire administered immediately after the experimental procedure, supplemented by contemporaneous notes taken by myself of subjects’ verbal reports.

In particular I will discuss two items from the short questionnaire of particular relevance to the present discussion, namely those which I will designate ‘the Imagery question’ and ‘the Outside question’.

The Imagery question was worded as follows:

> Did you have any spontaneous visual imagery or other unusual experience during the experiment? Yes____ No____

The Outside question was designed as a criterion of whether the participant had had an OBE in the course of the experimental procedure. It was devised by John Palmer for use in his own experiments and was worded as follows:

> Did you at any time during the experiment have the feeling that you were literally outside of your physical body? Yes___ No___

The Outside question

Before discussing the results of putting this latter question to my subjects at the completion of the experimental procedure it may be worth outlining the problems which may arise in devising such a question.

On the one hand, if the wording makes the criterion for endorsement too loose, one is liable to capture too wide a range of experience, and some of the subjects may endorse the question despite not having had an experience that the majority of people would regard as an OBE. On the other hand, if the wording makes the criterion sound too strict, one may fail to capture experiences which would shed light on what is being investigated.

This problem will be illustrated when we come to consider the responses of some of the subjects discussed below.

Five of my 40 subjects endorsed the Outside question following the experimental procedure, all but one of them coming from the OBE Group, i.e. from subjects who had reported prior experience of an OBE. These five will be referred to as 'the Outside subjects'. In addition three other subjects gave qualified endorsements by writing a question mark or 'Almost' against the Yes option. Of these one was a member of the OBE Group and two were Controls.

The data concerning the five Outside subjects and their experiences are briefly summarised in Table 6a, and the data about the three subjects who gave a qualified endorsement are given in Table 6b.

The experiences of the three qualified endorsers did not appear to differ qualitatively from those of the five Outside subjects. They seemed to some extent to reflect the influence of individual differences in criteria for endorsement. For example, the first of the three, Mr. B.T., whose visual

experiences are described later in this chapter, was a mature research student in philosophy who had intellectual difficulty with the idea of anything being literally outside the body in an OBE.

Also worthy of note is the fact that the report of the second qualified endorser, Mrs C. in Table 6b, is strikingly reminiscent of Ms. L.M.'s in Table 6a, except that Mrs C. described feeling 'pushed' rather than 'pulled'.

Table 6a
Summary of Data for the Five 'Outside' Subjects

Subject	OBEr/ Contr.	Age	Type of experience	Timing of onset	Duration
Ms L.M..	C	24	'A feeling of being pulled "out"'	Start of sound	'About 90 secs'
Mrs S.I.	O	73	'A wonderful floating sensation'	Start of sound	Whole of sound phase
Mrs B.Y.	O	57	'A feeling of detachment from my body, as if it wasn't there'	During mental relaxation phase	'Momentary'
Mrs H.	O	56	'I "evaporated" through my body and could see myself lying underneath'	Middle of sound	Continued into sound phase
Mr B.N.-F.	O	21	'I felt a state of detachment but pinned down by the centre of my hands.'	?	Indeterminate

Table 6b
Summary of Data for Qualified Endorsers of the 'Outside' Question

Subject	OBEr/ Contr.	Age	Type of experience	Timing of onset	Duration
Mr B.T.	O	39	Flying over rural landscape	?	?
Mrs C.	C	39	'Felt as if being pushed out of my body - literally forced - unpleasant. I forced myself to gain control again.'	Start of sound	5 seconds
Mrs E.F.	C	53	'I felt my body was switched off and out of use [...] I had the feeling a journey was about to begin.'	During mental relaxation phase	To end of tape

The endorsement rate for the Outside question

On the face of it the present experiment produced a considerably different endorsement rate for the Outside question than did various experiments on the induction of OBEs in the laboratory by Palmer and his colleagues using university students in the USA. In these experiments the endorsement rate for the question ranged from 40 to 60%.[6]

It is interesting to speculate as to why the endorsements rates in the experiments carried out by Palmer and his colleagues should have been substantially higher than the rate obtained in mine.

First, it seems necessary to distinguish between two possibilities: (1) that the present subjects actually had did actually have fewer, or less dramatic experiences than their American counterparts; or (2) that they had roughly similar experiences in terms of quantity and quality, but their criteria for

[6] Palmer and Vassar, 1974; Palmer, 1975; Palmer and Lieberman, 1976.

endorsing the Outside question were different, due to age, cultural factors, or other reasons.

There was some evidence for the latter possibility in the fact that there were apparently individual differences in criteria even among my own subjects. For example, the philosophy graduate student referred to above, Mr. B.T. (see Table 6b), gave only a qualified endorsement to the Outside question, despite experiencing imagery which other, less sophisticated subjects might *prima facie* have regarded as a sufficient condition for endorsement.

Two further factors may have militated against more of the OBE group in particular endorsing the Outside question. First, subjects with prior experience may have been less easily disposed to categorise an experience occurring within the context of the experiment as an OBE because they already had a standard for what they consider such an experience should be like.

This would appear to have been a factor, for example, in the case of the above-mentioned philosophy student. His previous, self-induced OBEs were apparently characterised by fairly dramatic onset and termination sensations. After the experimental session he wrote:

> [...] with typical OBEs in my experience there is a *sudden* break with the body [...] there is always an energetic effect, like a tearing, a forcing of the consciousness out of the body, sometimes accompanied by a strong vibration at the top of the head. When re-entering the body there is usually a violent shock, like being winded in a fall.

These characteristic sensations were evidently absent from his experience during the experiment, and this seems to have been one of the reasons for his not endorsing the Outside question unequivocally.

Secondly, subjects with previous experience of OBEs may have noticed that the conditions of the experiment differed in some way from the conditions under which they underwent, or induced, their prior experiences. They may

therefore have been less disposed to believe that the experimental conditions were capable of facilitating such experiences. Two subjects made comments to this effect. One of them was again the philosophy student quoted above, who claimed to be able to induce his OBEs at will, but using a procedure that involved him being in a state of muscular tension, rather than relaxation as in the present experiment.

Some features of experiences reported

Palmer and Vassar (1974) draw attention to the fact that nearly all their subjects who endorsed the 'Outside' question following an experiment in the laboratory reported an inability to control their experiences.

The apparent autonomy of the experiences was also a feature of several subjects' accounts in the present experiment. For example, two subjects commented that their experiences were not what they had expected. The first of these was Ms. L.M. (see Table 6a above), who described feeling 'pulled' out of the body at the start of the sound period. She said she was surprised by what she experienced, because from what she had read about OBEs she had expected that, if she experienced anything, it would be a feeling of floating rather than a feeling of being pulled.

The second subject was the one who reported feeling 'pushed' out of her body (Mrs C., in Table 6b). She had experienced feelings of weightlessness during meditation, but commented that she had not experienced anything like what happened in the experiment.

Also notable is the fact that one OBE subject commented that her experience was more like the 'classical' OBE (in which the subject appears to see their physical body from outside) than the experiences she had had before. This was Mrs. H. Not only was her experience autoscopic, but it seems to have involved

the sort of displacement of the body image which is characteristic of many spontaneous OBEs. She described the view of her body as a glimpse, to obtain which she had had to ‘turn round’, as if she was initially facing the ceiling of the cubicle.

She also resembled the subjects of some spontaneous autoscopic OBEs in seeming to have been somewhat taken aback by her own appearance in the hallucination, describing herself as ‘looking awful’, ‘floppy’ and with a bit of saliva on her lip (this latter feature did not appear to correspond to anything in reality).

Despite her response to her seeming appearance, another aspect of her experience which was reminiscent of certain reports of spontaneous OBEs was its positive emotional tone. She said that at one point it was like ‘dancing’ in the cubicle, without any restriction, and that as a whole it had been ‘all very pleasant’.

Another subject, Mrs. H. reacted in a similar way to the experiment. She described the floating feeling she experienced as ‘wonderful’, and registered disappointment when told that the experiment was over.

At the same time, it is only fair to note that one subject seems to have found her experience aversive; this was Mrs. B., a member of the Control Group and a qualified endorser of the Outside question. She reported that she felt she was ‘being pushed’. Her emotional response seems to have been related to the fact that the experience was not under conscious control. She said that she had felt ‘incensed’ almost at the involuntary nature of it; it was ‘like being steamrollered’.

A distortion of the sense of time

It is interesting to note that one subject showed a striking distortion in her sense of time. This was Mrs S.I., one of the Outside subjects (see Table 6a). She described having experienced ‘a wonderful floating sensation’ during the sound phase of the experiment, i.e. the final ten minutes.

What is of interest in the present context is that Mrs S.I. estimated this phase had lasted a mere thirty seconds and ‘couldn’t believe it’ when assured that it had in fact lasted ten minutes. In this case, unlike in the case of Monroe’s experiences described in the previous chapter, we have a more objective indication of the distortion of the time-sense, since the subject was estimating a duration which was objectively determined (the length of the sound phase).

It is also interesting to note that Mrs S.I.’s EEG showed two surges in delta amplitude during the course of the experiment, one during a control period prior to the start of the experiment, and an even larger one during the sound phase. She was adamant that she had not fallen asleep at any point during the sound phase. However, she described herself as feeling ‘overrelaxed’, as if she could have gone to sleep if she had wanted to, during the control period, and possibly ‘a bit sleepy, very briefly’ during the sound phase, though she found this difficult to distinguish from relaxation.

I suggest that these various indications of distortions of the time-sense in connection with OBEs support the idea that they are a phenomenon of sleep, and in particular that they are associated with the Stage 1 descending phase. It is my own impression that such distortions are a characteristic feature of the early stage of sleep.

Certainly distortion of the time-sense would appear to be one possible explanation of Maury’s guillotine dream:

> I was slightly indisposed and was lying in my room; my mother was near my bed. I am dreaming of the Terror. I am present at scenes of massacre; I appear before the Revolutionary Tribunal; I see Robespierre, Marat, Fouquier-Tinville, all the most villainous figures of this terrible epoch; I argue with them; at last, after many events which I remember only vaguely, I am judged, condemned to death, taken in a cart, amidst an enormous crowd, to the Square of the Revolution; I ascend the scaffold; the executioner binds me to the fatal board, he pushes it, the knife falls; I feel my head being severed from my body; 1 awake seized by the most violent terror, and I feel on my neck the rod of my bed which had become suddenly detached and had fallen on my neck as would the knife of the guillotine. This happened in one instant, as my mother confirmed to me.[7]

It could be argued that the apparently lengthy sequence of events within the dream which 'rationalised' the sensations of execution in fact occupied much less time than they seemed to the dreamer to occupy while he was asleep.

It is also of interest that Parkes reports that there may be 'distortion or absence of time sense' during episodes of sleep paralysis, which are characteristically associated with the hypnagogic or hypnopompic states.[8]

Subject Ms J.

Also of interest, for a different reason, was the subjective report of a subject, Ms J., aged 26, who answered No to the Outside question. She described an experience which had several features reminiscent of a so-called 'near-death experience' (NDE). She described it as beginning with imagery prior to the sound phase, when she saw an eye, 'in negative, staring and occasionally blinking.' She noted that the blinking was not synchronised with her own blinking, but rather 'seemed to have its own rhythm.' Her account continued:

---

[7] Maury 1861, pp.133-4; quoted in Mavromatis 1987, p.24.

[8] Parkes 1985, p.203

> When [the] sound started and I opened my eyes [...] the light seemed to change from the initial impression of white light to cloudy grey to lighter turquoisey grey. I had the impression of being on elastic going towards a tiny white light in [the] distance.
>
> Yo-yoed a few times from deep cloudy grey to turquoise to bright light and back. Then felt the sunbed and couldn't 'see' anything else [...]

With regard to the slowly pulsating colours she experienced in conjunction with the 'yo-yoing' effect, she said that she initially thought that these colour effects had been deliberately induced by the experimenter. When questioned further, she said she had believed this was being done, not by manipulating the light or the goggles, but by her brain being electrically stimulated, presumably by the electrodes attached to her head.

The impression of a white light in the distance and the sense of movement to and from this light are both features that are reported in many so-called 'near-death experiences'. In the post-experimental interview this subject likened the sense of movement to the effect of moving to and fro in a 'tunnel'.

One other subject mentioned 'tunnels', in this case in response to the Imagery question which will be discussed below; this was one of the five 'Outside' subjects, Mr. N.-F., who felt detached except for being 'pinned down' by his hands (see Table 6a).

These cases may be seen as shedding some light on the question, raised in Chapter 1, as to whether proximity to death is a necessary condition of such experiences or not. Stevenson (1987) studied the case notes of a number of patients reporting NDEs and found that 50% were not in fact near death in the opinion of the doctors who were treating them at the time. The two present cases would appear to support the idea that at least some of the characteristic

features of NDEs may occur in the absence of any life-threatening medical condition.

The Imagery Question

This question, quoted in full above, asked participants whether they had had any spontaneous visual imagery or other unusual experience during the experiment. A total of 23 out of the 40 subjects endorsed this question: 15 of the 20 members of the OBE group did so, as compared with 8 of the 20 Controls. This was a statistically significant difference between the two groups (McCreery 1993).

The commonest type of imagery/hallucination reported was visual, reported by 13 subjects. Next in order of frequency came feelings of weightlessness, reported by 6 subjects, and distortions of the body image, reported by 5. In addition there were two reports of auditory experiences and one tactile one. (These numbers add up to more than 23 as some subjects reported experiences in more than one modality.)

I will now consider each of these categories in more detail.

Visual experiences

In response to the Imagery question subjects reported a wide range of visual experiences, from simple patterns and lights, to complete and apparently realistic figures and scenes. At the most elementary level were phenomena in which events within peripheral, rather than central, stages of the visual system probably played a role. For example, one subject described ‘small geometric patterns during and after tensing eye-muscles’. (This tensing and relaxing of the eye-muscles was one of the preliminary tests of the proper working of the EEG equipment, before the start of the experimental session itself).

More dramatic were several accounts of brightly coloured patterns, less obviously ascribable to purely peripheral factors. The most striking of these came from the subject who reported 'seeing' herself from an externalised viewpoint, Mrs. G., from the OBE group (see Table 6a above). She claimed that her visual field looked green as soon as the goggles were put on (she insisted she did not suffer from any form of colour-blindness). This green visual field was followed by a 'short burst' of red, then blue, a 'deep purple light', and finally an effect she likened to the Aurora Borealis, consisting of semi-circular rays, 'very, very bright'.

Another subject at first believed that the experimenter had been flashing coloured lights on the outside of the goggles.

Non-abstract motifs reported by subjects included: eyes (two cases), a face, a 'hallucinogenic figure 8 of green/white light', and 'a girl sitting watching me in a red dress.'

It is interesting to note that a member of the OBE group previously mentioned, Mr. A.S. (see Table 6b above), described a sequence of imagery/hallucinations which followed the progression from simple to complex described by Klüver (1942) in connection with mescaline-induced hallucinations, and by Sacks (1970) in connection with migraine. Mr. A.S. reported that the start of the sound was accompanied by the diffuse white light of the goggles turning 'blue with bright flickering effects'. The colour then turned to grey and resolved itself into cloud formations, in which holes developed. He could see the ground through these holes, which then expanded to reveal a landscape, in 'photographic clarity'. He seemed to be moving over this landscape, which consisted of green hills, with chalk outcrops, streams and roads, 'at a height of about four to five thousand feet'.

Body image distortions

A total of eleven people reported experiences of weightlessness and/or distortion of the body image in reponse to the Imagery question. It was noticeable that these reports all came from the OBE group (the 20 subjects who had reported prior experience of an OBE).

The most striking report of a body-image distortion came from one of the five subjects who endorsed the Outside question following the experiment, Mr N.-F. (see Table 6a above). He reported a rocking sensation as if his body were rotating about a horizontal axis through his waist, that is, his legs and head were moving in opposite directions, at a frequency of about twice a second. In fact he reported afterwards that at one stage he had thought that the experimenter might be rocking the garden lounger.

Auditory and tactile experiences

There were two reports of auditory phenomena. both of which came from subjects in the OBE group. In one of these cases the subject revealed in the course of the post-experimental interview that she had heard jazz music during the sound period. She likened it to ‘forties or fifties big band music’. She was reluctant to believe that there was no such music on the tape, and when part of the tape was played back to her in the laboratory she suggested the hypothesis that the equipment had earlier been picking up the sound of music in some way from another part of the building.

This subject was thirty-first in the series of forty who took part in the experiment, and it is possible that earlier subjects experienced similar auditory imagery without this coming to light, if they likewise took any hallucinatory sounds they heard as an objective part of the tape. However, questioning of the

remaining nine subjects following this one failed to uncover any further instances, suggesting that such auditory imagery was not common.

The one tactile hallucination was reported by the subject mentioned above who hallucinated a girl in a red dress. She wrote, 'my right leg below knee and hip felt "crawly" as if something was about to happen.' She said this was unlike anything she had experienced before, and not like pins and needles.

Assessment of the self-report results

With more than half the 40 subjects endorsing the Imagery question, the experimental procedure may be regarded as having been reasonably effective in inducing anomalous perceptual experiences in normal subjects.

There was a very wide range of responses from subjects to the procedure, ranging from one from a psychologist who reported no response at all except slight irritation with the boredom of it, to Mrs. G. (see Table 6b), who reported an autoscopic experience which she felt was more like the classical OBE than OBEs she had experienced previously, outside the laboratory setting.

This wide range of responses to a standardised procedure is what one would expect if individual differences play an important role in the genesis of perceptual anomalies. Moreover, the variations in response showed the expected correlation: i.e. that a significantly greater proportion of the OBE Group reported perceptual anomalies than members of the Control group.

The present findings may be seen as shedding some retrospective light on the very different response rates in terms of imagery and hallucinations reported in the sensory deprivation experiments carried out in the 1950s, a feature which attracted much comment at the time (Solomon *et al* 1961). In experiments where the subject numbers are relatively small, it would seem that a few hallucination-prone but otherwise normal subjects might produce a relatively

high rate of reporting, whereas an equally small number of normal subjects might produce a relatively low rate, simply by chance. I.e. the widely divergent results might be at least in part due to what is called ‘sampling error’.

Conclusion

In view of the relatively high proportion of subjects who endorsed the imagery question it is worth pointing out that they were not given any suggestion that they might experience visual or other sorts of imagery, apart from OBEs. Prior to the experiment all the emphasis was on the fact that the purpose of it was to see if the subject might induce an OBE or something like it, and other sorts of anomalous experience were not mentioned.

It is possible that some of the subjects were aware of the literature on sensory deprivation experiments and the associated reports of hallucination, and may have been reminded of these by the goggles and other features of the experiment. However, this seems unlikely to have been the case with most of the subjects, the majority of whom were not university graduates.

The next two chapters will discuss the electrophysiological findings of the experiment.