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CONCERNING THE SCIENTIFIC STUDY
OF THE HUMAN AURA

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I AM going to discuss primarily the methodological problems of trying to study the human aura. I shall not try to review the literature about the aura, but take a basic position that although there is a lot of nonsense in this area, there may be some genuine, important phenomena. Given that, how do we begin to collect some hard data about this problem? How do we get *reliable* and *valid* types of observation that can enable us to understand what the aura is, how we might use it, and so on? I am going to define the aura in a very minimal way as simply a *something* that is perceived by human beings, and is perceived as a something that surrounds a person. We will call that latter person the target person.

Figure 1 shows an observer who sees this aura surrounding the target person. Thus the aura is minimally defined as a something, associated with the space immediately surrounding a target person that an observer¹ can see.

¹ The terms 'sensitive' and 'psychic' are commonly used to describe people ostensibly possessing psychic abilities, and will be used in this paper to describe an observer who believes he can see the human aura fairly often.

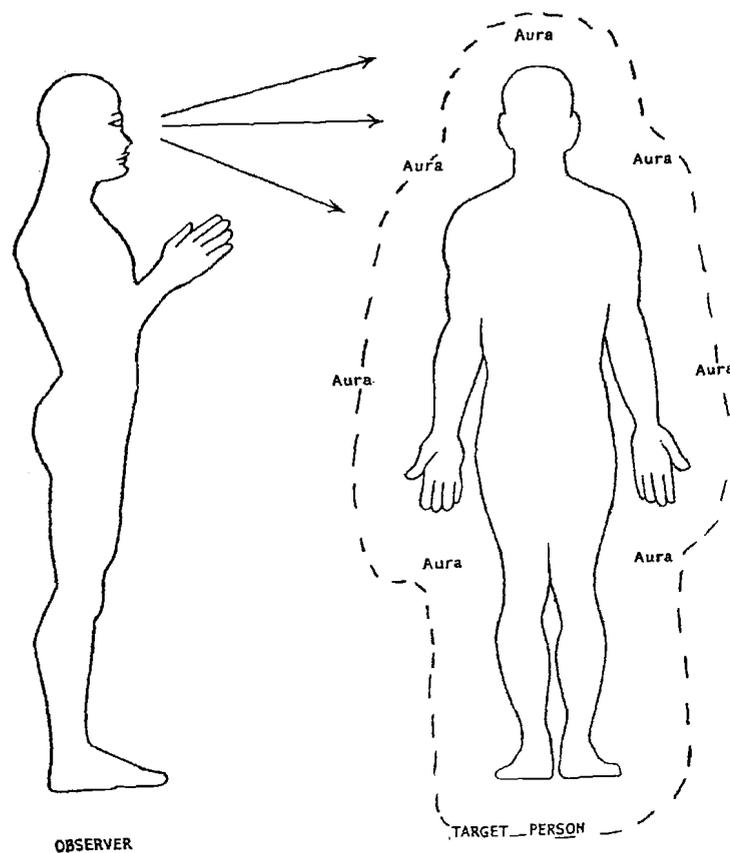


FIG. 1. The Basic Situation in Observation of the Human Aura.

In this paper I am going to try to conceptualize the different phenomena and problems which I think are all being lumped together indiscriminately when people talk about the aura.

CONFOUNDING OF PHYSICAL AND AURAL INFORMATION

To begin with, in talking about the target person's aura we have to remember that in practically all cases we hear of not only is the observer presumably looking at the target person's aura, he is also looking at the target person. The physical appearance of the

target person comprises a large body of information. You can see a great deal about people simply by looking at them, their posture, the way they move, the way they dress, the way they groom themselves, etc. This leads to a great confounding when someone gives an aura reading¹ because you do not know how much of the information that is being produced is information that actually exists in some sense 'in' the target person's aura, and how much comes from physically observable characteristics of the target person, whether static characteristics or behaviour. At one extreme, for instance, an observer ostensibly doing an aura reading may say a number of valid things about the target person, but they may have nothing to do with any such thing as an aura. They are characteristics that a good observer of human beings can pick up from their outward physical characteristics.

The first methodological problem that has to be dealt with then, is, how do you separate out these two sources of information so that you know when you are dealing with the aura? The way that it *should* be done, and which has practically never been done in the research that I know of, is that all sensorily perceivable information from the target person himself must be blocked. So there is no *sensory* information to pick up, and the only information available is in the hypothetical aura. How do you do this?

THE DOORWAY TEST

I developed an appropriate test many years ago, which I have never had a chance to apply for lack of good aura readers. I call it the 'doorway test.' First; to optimize conditions, you let your sensitive find a target person who has a *big* aura, one that sticks out a lot and is stable over time. It is not something that fades out every couple of minutes, or something like that, it is a steady, big surround.

Second; you then block the target person's physical characteristics by the simple expedient of having the target person stand behind the edge of a doorway. His shoulders should be just behind it, so that none of his physical body is visible to the sensitive, *but his aura sticks out several inches beyond the doorway.* The basic setup is shown in aerial view in Figure 2. More elaborate shields could be used, but doorways are generally available.

¹ An 'aura reading' is a term used to cover a description of a target person (personality, habits, problems, etc.) supposedly inferred from the perceived characteristics (colour, form, density, etc.) of his aura by a sensitive.

Third; you set up a random trial schedule, where sometimes the target person does stand *immediately* behind the doorway, sometimes he stands ten feet further back from the doorway. On each of these trials an experimenter, who is with the sensitive, asks: 'Is the aura protruding beyond the doorway or not?'

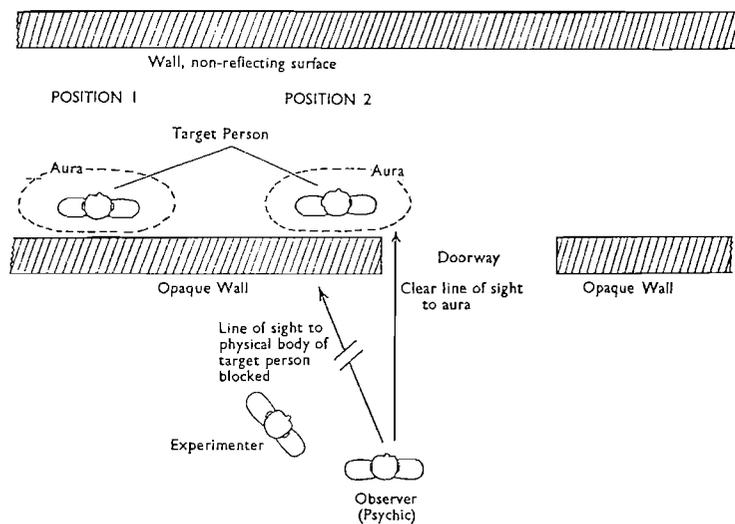


FIG. 2.

If the sensitive is objectively perceiving the aura, there should be practically one hundred percent success in saying that either the person is right by the doorway or that the person is *not* right by the doorway.

This is a simple, straightforward test in theory. In practice you have to eliminate all sensory cues, such as reflecting surfaces. You can't use noisy target people who clump their way back and forth to the doorway. The experimenter with the sensitive should not know where the target person is on any given trial, etc. But it is relatively easy at present to eliminate these sorts of cue.

This test will deal with the first methodological problem, separating out the target person's *physical* characteristics from information that might be 'located' in this aura that surrounds the target person. What I am saying, in another way, is that we have to be careful not to ascribe to the *aura* characteristics which

are picked up from sensory observation of the target person himself.¹

THE PHYSICAL AURA

The next point I want to make is that we have to distinguish between several distinct types of aura, and make it clear which one we are trying to study at any given time, which one we are talking about. Otherwise we are going to get into a lot of confusion. The first kind of aura is what I shall call the *physical aura*. By 'physical,' I mean physical in the ordinary sense of the word², matter or energy fields that immediately surround the target person. This means that, in principle, the physical aura should be detectable by known physical instruments.

Now we know that there *is* a physical aura. For instance, a person is sweating: this means that there are a variety of organic molecules mixed with water vapour in the immediate vicinity of his body. A person is usually warm with respect to his surroundings, so there are thermal gradients and resultant air currents in the air immediately around him. Thermal (infrared) energy is being radiated from the body. There is an electrostatic field around a person, and electrical ion fields (ionized particles and gases) surround him. Electromagnetic radiation (radio waves) in the microwave region of the spectrum is emitted at a low level,³ as well as low frequency electromagnetic radiation of up to one hundred kilocycles being generated by muscle action and possibly radiated (Volkers, 1960). At any given time, any or all of these possible 'auras' may exist in a complex mixture around a person's body.

Now, one of the first research questions that we have to deal with is: is this physical aura actually detectable either by instruments or human observers? It is quite possible that while *in principle* this physical aura exists, in practice it exists at such a

¹ The outcome of the doorway test cannot be simply interpreted as 'proving' or 'disproving' the reality of the aura for the tested sensitives, as will become clear in the following discussion of types of auras. A negative outcome (the sensitive cannot guess correctly beyond chance expectancy) may be interpreted to mean that whatever it is that sensitive claims to perceive, it is *not* something physically localized in the space immediately surrounding the target person. Interpretations of positive outcomes will be discussed later.

² I should also add the disclaimer that I talk about known physical matter and energy; but what is known today may appear very ignorant from the viewpoint of tomorrow.

³ C. Maxwell Cade, personal communication, 1971.

weak level of intensity that you cannot detect it; that atmospheric noise is so great that you cannot really detect the physical aura.

In practice, instruments can detect some things around the human body. For instance if you have a sensitive water vapour detector and put it up close to the human body you will get a reading on this, because atmospheric water molecules will tend to be denser immediately in the vicinity of the skin. Electrostatic fields, electrical ion clouds, thermal radiation,¹ (exceptionally weak) magnetic fields, and microwave radiation have been detected around humans under special circumstances. The important question with respect to the physical aura, however, is whether observers can detect the physical aura. Are human beings' known sensory mechanisms sensitive enough, under *any* kinds of condition, actually to detect the physical aura? Could a person for instance, see the air turbulence around another person rising from the thermal radiation? By and large, we would say no, or find only trivial cases: we are not amazed that a human can sense the warmth of another's body a few inches away.² But suppose a sensitive passed the doorway test, reliably indicated whether the target person was close to the doorway edge or not? Would this indicate that the physical aura was detectable by known human senses, such as vision?

Unfortunately, the interpretation is not quite so simple, because you also have the possibility of *clairvoyant* detection, or detection of the physical aura by extrasensory means. While we have an immense amount of evidence for the reality of something like clairvoyance, we have little information on what the *limits* of this kind of faculty are. No one could authoritatively say, for instance, that you could *not* detect an ionic cloud around a person by using clairvoyance, even though you may be able to put up a good argument on theoretical grounds, or show practically, that the *known* human senses are not sensitive enough to pick up this aspect of the physical aura.

Another research problem with the physical aura is whether the characteristics of the physical aura show a variation over time, or

¹ Important variations in infrared radiation from the surface of the human body are now used in medical diagnosis, using sensitive instruments developed by Cade (Cade, 1968). A distinct layer of hot air between the skin and convection currents around the body can be photographed with a process known as Schlieren photography (Lewis, 1969).

² Some persons apparently have optical sensitivity to the infrared portion of the spectrum far exceeding that of others, so some can see what is invisible to others. Personal communication from C. Maxwell Cade, 1971.

are a permanent structure that correlates only with the long-term characteristics of the target person. At one extreme, the physical aura might be a rather static phenomenon—it is there if you are alive and gone if you are dead, and that is about the maximum amount of information you can get from it. On the other hand, there may be variations in these various components of the physical aura which would relate to changes in physiological activity, mental activity, etc. If this were so, they might be of interest not only in and of themselves, they might provide practically useful information. There might be an advantage in observing the physical aura of a person through appropriate instrumental or clairvoyant means in order to tell something about the person.

Or there might not be. This is an empirical question. For instance, you might devise a hundred thousand dollar instrument that could measure a person's body temperature by focusing on his aura alone. But why should you do that when a clinical thermometer would do the trick for you? So the question of the *usefulness* of the kind of information you can pick up from the physical aura is an empirical question that we simply have to work out.

With respect to the possible correlation of physical aura characteristics with the target person's internal state, another interesting research question arises: can a person learn volitional control over his physical aura? Can he learn to do things which will alter its characteristics, such as intensify it to make it more accessible for observation, or to perform better some of the functions that have been hypothesized for the aura? For instance, in some of the occult literature the aura is described as acting as a protective barrier to incoming stimuli. Somehow it protects a person from the shock of stimulus input. Might the physical (or other types of) aura perform such a function? I'm interested in this possibility because of my own research in the area of bio-feedback, where all sorts of biological and physiological processes that were formerly considered involuntary and totally beyond human control can now be brought under volitional control by giving people appropriate feedback signals through the right kinds of instruments.

Another important research question with respect to the physical aura is: how does the environment (both the physical and psychological environment) affect the physical aura? May it change its detectability, for instance? For example, from known physical principles we would predict that clothing would dissipate or disorganize the physical aura. You can't build up much of a layer of sweat-saturated air while leaving layers of cloth under your arms. What are the things that will shield the physical aura?

Will atmospheric turbulence have major effects on this sort of aura? Is there any way of varying environmental conditions that will deliberately affect the physical aura? Increase its detectability? Kirlian¹ photography, e.g., seems to be a way of environmentally affecting the physical aura.

Another important research question is: can the environmental conditions that an experimenter can alter deliberately change the correlation of the physical aura with physical and psychological characteristics of the person? That is, if we hypothesize the physical aura as depicting information about the internal state of the target person, might some environmental conditions wash out a particular correlation, so that the aura could no longer give you a valid reading of that particular information? These are all sorts of things that we need to know.

Now I have talked so far as if people were rather static and you could go in and examine them at any time. If there is one thing we do know about people from psychology, it is that a given person varies a great deal from time to time, and that when you look at more than one person there is a tremendous variability between persons. I cannot stress enough how important it is to begin to study the sources of variability between people, the dimensions of differences, and what causes these particular sorts of differences.

The physical aura would be detectable in this kind of doorway test that I talk about. If you can find some kind of physical emanation around a person that sticks out you should, with the proper instruments or a person whose sensory mechanisms are keen enough, be able to do extremely well in predicting when a person is right around the corner and when he is not.

THE PSYCHOLOGICAL AURA

There is an entirely different type of aura that we can talk about, which I shall call the *psychological aura*, or the phenomenological aura. By this I mean that there is no physical or psychical 'thing' of any sort that actually occupies the space around the person. Rather, the target person has a *mental concept* that 'something' occupies the space immediately around him. That is, a psychological

¹ My knowledge of Kirlian photography, while limited to a popularized account, (Ostrander & Schroeder, 1970), suggests that the basic technique is the application of very high potential radio frequency energy to the body. The electrical energy added in this way seems to potentiate the matter and field structure of the physical aura sufficiently to result in some light emission, which may then be photographed.

aura is a mental construct *concerning* the immediate space around the target person, and it exists only in the target person's mind. It has no existence independent of the target person's mental state.

This concept may be conscious, semi-conscious, or even unconscious. Many people act as if they possess a psychological aura, but if you ask them if they have an aura, is there something special in the space around them, they give you a blank look: what are you talking about? They do not sense it themselves, so clearly this sort of thing can exist on an unconscious level.

A typical reaction, in our culture, to the idea of a psychological aura is to say that it is *subjective*. Subjective has quite negative connotations. Subjective means it is not real, you cannot study it, and it is unreliable. But that is not the case with the psychological aura: it is quite amenable to study, even though it does not have an existence independent of the target person's own conscious or unconscious concepts. You can study the psychological aura by observing a person's behaviour and/or by asking him about his feelings. From this data you can infer what his psychological aura is like.

For instance, consider the target person depicted in Figure 1. At any given time, there are various sensory stimuli coming in to him which are affecting his experience and his behaviour. Added to these are various internal factors: his thought, his fantasies, his feelings, etc. which are also affecting his behaviour. These result in some external behaviour and some internal behaviour (inferred from his report of what he is experiencing). Our observer can observe these sorts of thing, and might say, from a long series of observations, "This person is acting *as if* he has a field 3 feet wide around him, and as if that field is bigger in the front than it is at the sides," or something like that.

I am not speaking hypothetically here, and I am going to illustrate in a minute actual research that has been carried out on the psychological aura.

For the sake of completeness, I want to note that the same sorts of problem can be thought about with respect to the psychological aura as to the physical aura. For instance, what about its detectability? What kinds of observation are best for inferring the psychological aura? What sorts of thing does a person do which are most revealing about his concept of the aura? What kinds of instruments¹ would record a person's psychological aura? The

¹ By *instruments* here I would include not only mechanical instruments, but the use of trained observers who are both good psychological observers and maybe psychics, who may be able to see rather unusual things about a person's behaviour that are not apparent.

correlations of the psychological aura with the person's own inner characteristics are again a fertile area for investigation. If you go to the trouble of observing these characteristics, and you infer a psychological aura from them as an explanation of the target person's behaviour, what will that tell you about other aspects of the person's behaviour?

Is it useful? Again, we have the possibility that we may develop an elaborate scheme for observing people under certain conditions inferring what their psychological aura is like, then trying to predict what they will do next. But you may get a very low level of predictability.¹ So there is a real question here of acquiring useful measures in a practical sense.

As with the physical aura, we can look at the effect of environments on the detectability of the psychological aura, its correlates, etc. We can ask research questions about the function of the psychological aura. If a person has a psychological aura of such and such characteristics, *why* does he have it? What does it do for him? What does he gain from it? What does he lose from it? How does it affect his transactions with the world, etc.? How does it affect his personality, his self-concept, and various things like that?

We might also take up a related research question. How could you train the target person to sense his own psychological aura, and would this be a useful thing for him to do, to be aware of what this psychological construct is that he is carrying around with him, and of its effect on his behaviour?

Now let me illustrate that I am not just talking hypothetically at this point. A number of psychologists have done research on the psychological aura, although they have not done it under the name of aura research: after all, they're respectable people and to use a bad word like that. . . . They've done it under the concept of 'personal space.' It has been observed that people act *as if* there is something special about the space immediately around them, and that the space may be quite sharply defined.

A number of investigators have done what we might call *invasion* studies. They have mapped out a target person's personal space by invading it and seeing at what distance he moves away or reports feeling uncomfortable. One of my colleagues (Sommer, 1969) has done many invasions of personal space in libraries, e.g., he has an experimenter pick out target people who have been studying alone. The experimenter will then sit down at various

¹ In spite of the theoretical nicety of learning a person's behavioural patterns and predicting what he's going to do, it is still true in psychology that the best way to predict what a person is going to do next is ask him 'What are you going to do next?'

distances from the target persons, and note how close he has to sit to get people to flee within various time limits.

You can study this another way by simply explaining the idea to a person, explaining that: 'Sometimes when people get very close to you, you get uncomfortable. Okay, we want to map this sort of thing. You stand here, and I'm going to walk toward you, very slowly, and tell me at what point you get uncomfortable.' People have been found to have differently shaped personal spaces this way. A person's personal space is usually much bigger in front. It may stick out a foot, two feet, something like that. In general, you can get much closer in on the side before he gets uncomfortable, closer in on the back than you can on the front.

This kind of mapping can be affected by psychological effects. If you walk toward a person with a knife in your hand, I suspect his personal space will become somewhat larger! But allowing for these sorts of thing, you still find that for many people there's a stably defined area, immediately around them. They act as if it is a very special kind of area, and if people, except under very special circumstances, penetrate into that personal space, they generally become uncomfortable.

The size and shape of the psychological aura gotten by this mapping technique will vary with the type of invasion. It will vary with whether it is a person or a material object invading it. You can put a hatrack closer to a person without his feeling uncomfortable, in many instances, than you can another person. The janitor can come further into your personal space than your boss. There are fairly stable differences among individuals here. This research is in its infancy.

There are considerable cultural differences: the personal space of South Europeans tends to be smaller than the personal space of Americans. One of the things that you frequently find at a cocktail party, shall we say, is a South European backing an American across a room. As the South European moves to the limit of his personal space, the American backs away, but the South European has not had his smaller personal space violated.

The uncomfortableness of invasion has been put to practical use. In some police interrogation manuals, they tell you that the interrogator should sit directly across from the suspect, with no table or anything in between, and at first should sit a few feet away. But as the interrogation proceeds, the interrogator keeps moving in until he's just about touching the suspect. This will get the suspect nervous enough to be more likely to confess!

Another study I have carried out on the psychological aura is also quite interesting (Tart, in preparation). Several years ago I

began to wonder if you could take the personal space construct and not make it just an inferred thing, but teach people to "sense it" directly while hypnotized. I first began experimenting in some group situations, with untrained subjects who had various degrees of hypnotizability. Before hypnotizing the group, I would explain the psychological concept of personal space. After hypnotizing them, I would tell them: 'All right, over the next minute or two something is going to happen, so you're going to *directly* experience this personal space around you. I don't know *exactly* how you will experience it. You might *see* it. You might *feel* it. You might *smell* it. You might do something I couldn't possibly conceive of, but in the next minute you're going to begin to sense your personal space.' I've done this same sort of thing with well-trained hypnotic subjects in a more systematic manner also.

I found that most hypnotic subjects, even those who do not have a great deal of talent for hypnosis, who can only get into light to medium levels of hypnosis, will consciously detect their personal space after this procedure. Some of them will say they see something very dimly. Others will say there is something that feels 'elastic' right around them, and they can tell when somebody bumps into it. They are bumping this tenuous elastic thing. Others will say it's a 'vibration' feeling. Their eyes can be open, if they can still maintain hypnosis, without disturbing this 'sensing' of the psychological aura.

Some people, once I've explained the idea of personal space, can begin to 'sense' it without being hypnotized. Just to know that there is something they can look for is sufficient to let them 'sense' this psychological aura.

Some other very interesting things can be done with the psychological aura under hypnosis. One of the things I did was to give subjects suggestions systematically to vary the size of their personal space. For instance, I would tell them their personal space was going to shrink until it did not extend beyond the boundaries of their skin. With practically every subject I have done this with, they report that this is a very unpleasant state. They feel pains, they feel unprotected, they get nervous, they feel off-balance. They don't like this kind of condition at all. On the other hand, I have also suggested that they expand their personal space to three times its original size. Almost all subjects report they really like this. It's euphoric, they feel cushioned, happy. If I tell them to expand it to the size of the whole room, most subjects report that when this happens their perception of it just fades out completely, and it's no longer there.

One of the interesting possibilities here is that while we talk

about the psychological aura, a purely *inferential* construct, perhaps the person is not simply carrying around the mental construct, but actually detecting to some extent his own psychical aura or his physical aura.

Now, again, for investigating the psychological aura, I'd stress the importance of individual variability, which tends to be overlooked. I suspect there may be very different types of people with respect to the personal space they have.

THE PSYCHICAL AURA

Now let us turn to a third type of aura, which I will call the *psychical aura*, to use the old-fashioned term. By this I mean a 'thing' (without committing myself to what the thing is) that 'exists' in the space immediately surrounding the target person. This thing is not built of any known physical energies, yet it has a more 'substantial' or 'objective' kind of existence than simply a psychological construct that the person carries around. Another way of saying this might be to say that it exists on a different 'level' or a different 'plane.' I am hesitant to use those words, since they tend to be popularly used in such ambiguous ways.

Again we have the same research questions as with respect to other kinds of aura. How is it detectable, what kind of conditions optimize detectability? Can you detect by any kind of instruments?¹ What are the factors affecting the detectability of this sort of thing? Not only environmental factors, that will make it easier or harder to see, but psychological factors. Do some people have practically undetectable kinds of aura? Do other people have auras that are very easily detectable? What kind of people show this kind of variation? These are all questions that we eventually have to do research on.

Also, what are the characteristics of the observer that make possible the detection of this? How does the psychic detect it? This is one of the main things that I am going to come back to later because it's a very difficult problem. Again, the correlation of the psychic aura with the target person's characteristics is another large area that we are going to have to begin investigating.

¹ By 'instruments,' I mean not ordinary instruments but the whole class of so-called 'psionic machines,' devices that do not work in terms of known physical principles but which are reputed to produce results when used by a psychically talented person. I will not comment upon the validity of such claims at present. Note too that it is conceivable that the psychical aura may, at times, produce a physical energy derivative that might be detectable by known physical instruments.

We might ask questions also eventually about the *function* of the psychical aura. If it exists, what does it do for the person? What good is it? What disadvantages, if any, might we have? How do you train people to sense their own aura, possibly to enhance its functions? Or to eliminate undesirable functions, etc.?

In studying the psychical aura we come to a very difficult methodological problem. Since you must postulate some kind of extrasensory ability to detect it, how do you keep that extrasensory ability from picking up other, non-auric, characteristics of the observer which may be falsely attributed to the aura?

Going back to this doorway test, a way of starting to get at some of these problems, the *physical* aura would be instrumentally detectable in the doorway test, and the *psychical* aura should also be detectable by a talented psychic. The *psychological* aura would not: it is only a construct in the mind of a person, so it is not going physically to occupy the space around the edge of a doorway. The target person's position could be clairvoyantly detected, however, so it is conceivable that a psychic could reliably tell you when a person was and was not at the edge of that doorway, but falsely attribute it to seeing the psychical aura. As we do not know how to eliminate clairvoyance at any given time, we do not know how to deal with this possible confounding.

THE PROJECTED AURA

The fourth kind of aura I will call the *projected* aura. I use *projected* in the psychological and psychiatric sense of the term projection, meaning that you have an experience which exists only *within* your mind but you (falsely) classify it as a *perception* of the outside world. You project this thing into the outside world: nothing is out there, but you think it is there. This is quite distinct from the psychical aura: the psychical aura *is* there in some fashion.

We then can define the projected aura as something which is not out there at all: it exists only in the mind of the *observer*. The psychological aura, by contrast, existed only in the mind of the *target person*, although it could exist in other people's minds if he convinced them of it through persuasion.

The immediate reaction of many people to the concept of a projected aura is usually to think: 'Oh, it's just an *error*. It's just a hallucination.' But that is not the point I want to emphasize about it. The projected aura may or may not be a very *useful* source of information for the observer, even though it has no 'objective' existence.

The way we might think of this process of experiencing the projected aura is this. The observer looks at the target person, and picks up various physical, and behavioural characteristics from seeing him. He may also receive an information input, to varying degrees, from his own *psychic* faculties, which may range from zero information to a great deal of information. Then, somewhere on an unconscious level, these inputs are transformed into a mental image and delivered to consciousness so that he 'sees' an aura surrounding the target person. This projected aura may have 'valid' characteristics. Depending on how good his observation of the target person's physical characteristics was, and/or the quality of the psychical information input, this projected aura may be a very *useful* and *valid* indication of the status of the target person.

We can thus treat the projected aura as an *information display system*. It may be a way in which certain kinds of information are presented to, 'sensed' by an observer. It is an arbitrary way. Another person might never see auras: he might have an image, when he looks at a target person, of a scroll over their heads with things written on it. So one of the questions, in studying the projected aura, is, how *good* is the information coming through? At one extreme, if there is no psychical input, no clairvoyant input giving you extrasensory information about the person, and the only information the observer has is the physical and behavioural characteristics of the target person, then we are dealing with an interesting display but one that cannot really add any information over and above what you could get from simply carefully observing the actual target person. On the other hand, if there is psychical information input, there may be considerable information brought to the observer's consciousness in this fashion which might not be available otherwise. This is the observer's way of expressing himself.

The observer is, however, making an error in attributing his own information display process to something that exists in the outside world. A good example of this, for instance, with respect to 'instruments,' is the Kilner goggles (Kilner, 1965). These are a pair of lenses coated with an organic dye which supposedly allows one to see auras. Ellison measured the optical transmission characteristics of the Kilner goggles (Ellison, 1962). He found that the transmission was very good in the *far* red and the *far* violet. Since the human eye is not a perfect optical instrument, it will not focus the extreme ends of the visible spectrum perfectly, so there is an optical fringe created around anything viewed because these two extremes are being focused at slightly different places on the retina, and you don't have the information in the middle range of the

visible spectrum to mask this lack of focus. So persons who put on Kilner goggles and see a fringe around people and say, 'I see the aura,' are seeing the *projected* aura. They are mistaking the malfunctioning of their visual system for something that exists in the environment.¹

Another instance of the projected aura, that is now occurring quite commonly in today's culture, occurs with people taking psychedelic drugs. I well remember the first time I took mescaline. I saw beautiful auras around people. And then I noticed that not only were they around people, but they were around objects, and then pretty soon they just came loose from everything and floated off through the air! It became rather clear to me that what I was seeing were changes in my optical system that were producing fringes of coloured lights everywhere, rather than something that could be attributed to the external visual objects.

Along this line, I have been studying the effects of marijuana intoxication among a group of 150 experienced marijuana users (Tart, 1970; 1971). Table 1 shows results of some phenomena of interest to us here. Note that 8% of the users see fringes of coloured light around *objects* very often when intoxicated, 20% see them sometimes, 21% rarely. Only 1% report them as a usual phenomenon. 46% have never seen them. Fringes of coloured light around people, the human aura, are reported almost as frequently. These are both phenomena that occur primarily at the higher levels of marijuana intoxication. Feelings of energy flowing in the body, which some sensitives have said constitute the aura, are reported more frequently and at lower levels of intoxication than perceiving auras *per se*.

Probably the drug effect is producing a projected aura by altering the nature of visual information processing. Possibly it is increasing the user's sensitivity to other types of aura. In any case, psychedelic drugs may provide an interesting avenue of research on the aura.

THE OBSERVER

Let us now consider the opposite end of the process, the observer himself. We tend naively to take our perception for granted. We

¹ This does not necessarily mean that there is *nothing* to the Kilner goggles, because while that may explain some of the effect, it does not explain all the effects reported by Kilner. For instance, why does an aura, as seen with the goggles, seem to expand or contract with the application of an electrical charge? That's not going to affect the transmission characteristics of the goggles, so the Kilner goggles still have something to be looked at.

TABLE 1
EXPERIMENTAL EFFECTS OF MARIJUANA INTOXICATION
RELEVANT TO 'SENSING' AURAS

Description of Effect	Frequency of Occurrence						Minimal Level of Intoxication			
	Usl	VyO	Smt	Rly	Nvr	Max	VyS	S	Fly	Jst
I see fringes of coloured light around objects	1%	8%	20%	21%	46%	13%	10%	15%	4%	1%
I see . . . auras . . . around people	1%	5%	19%	23%	50%	15%	12%	9%	2%	3%
I get feelings in my body that are best described as energy, force, power . . . flowing	9%	21%	35%	12%	21%	7%	26%	25%	10%	4%
I get a vibration or tingling . . . that is not an actual muscle tremor	7%	17%	32%	15%	27%	7%	25%	24%	10%	1%
I become very much aware of my spine and feel energy flowing through it	3%	2%	14%	17%	59%	7%	14%	7%	4%	3%

Abbreviations Used:

- Usl = usually
- VyO = very often
- Smt = sometimes
- Rly = rarely
- Nvr = never
- Max = maximum
- VyS = very strong
- S = strong
- Fly = fairly
- Jst = just perceptible

all walk around thinking that we see what's out there. If there is one thing we have learned from modern research in this area, it is that perception is one of the most complicated processes imaginable. We take tremendous numbers of physical energies of various sorts, perform an immense number of mental operations on them, and end up with a mental construct that may be fairly far removed from the actual physical world.

This process provides a reasonable approximation of the real world for our ordinary life. We can see this blur of sensations coming down the street, we realize that it is a car, and we should not step out in front of that. Our mental construct is quite useful, it keeps us from getting run over.

Because of the complexity of perception, I suspect that in beginning to study the processes of the observer we may be reaching the most difficult area of study in this whole process of talking about seeing the aura. We know there are immense differences between people as observers in just the general sense of 'observer.' Some people are very poor observers in the sense that their observational processes are very much controlled by their needs, their past histories, etc. They pretty much see what they want to see. If they want to see the world as an unfriendly place, they see unfriendly actions all round them. If they are optimistic, they see people doing nice things all the time. Good observers tend to be people who have most of their needs satisfied so that these needs no longer interfere with their perception. They tend just to respond to what is there, they do not have to label it good or bad, pleasant or unpleasant. They can be more passive about it, simply reporting what they see.

Most of us, of course, are neither terribly bad observers with most of our perceptions determined by our needs, or good observers who can function without this. We are somewhere in between. Still, to a large extent, especially in marginal areas of perception, where the stimulus is not obvious, it is very easy to see what you want to see. It is very easy to take the multitude of stimuli coming into yourself and all of us and to organize them into a pattern which fits your belief system, whatever your belief system may be.

Now when we deal with someone looking at the aura, this problem is very important: how do we know when we are getting a good report of what is 'out there,' and how do we know when we are primarily getting a report of the person's experience which reflects mainly his own belief system, his own special way of processing information which has only a tangential or zero relationship to whatever might or might not be 'out there?' This

is the problem of evaluating the usefulness of the aura reading. How valid is the information?

I think it would be very worthwhile at this time if I took a couple of minutes to describe a technique which has been developed in parapsychology, to give you an *objective* assessment of how much paranormal information you get from a psychometric reading, since it is directly applicable to evaluating the usefulness of aura readings. How do you objectively evaluate this?

The first thing that should be clear is that a single person cannot make an objective evaluation. His own belief system will alter what he wants to do. Some people, if they want to believe in a psychic, might hear the psychic say, 'This man is a human being,' and if the person wants to believe he'll say: 'Yeah, right on, what fantastic psychic powers!' Another psychic might say, correctly: 'You have a brother with two heads who lives in Hong Kong.' And someone who doesn't want to believe may say: 'Well, a lot of people have brothers with two heads who live in Hong Kong: it's probably coincidence.' What is a reasonable assessment for one person is absolutely ridiculous to a second person. A given person's judgments on the accuracy of a psychic reading this way, the paranormality of the information, is usually going to be terribly subjective.

There was a technique, developed some years ago, but still not widely used, called the Pratt-Birge technique, (Pratt-Birge, 1948) which gets around the problem of subjectivity of evaluation entirely. To evaluate the paranormality of *any* kind of psychic reading, be it aura reading, psychometry reading, or the like, you start with a *sample* of persons who will each have a reading. To describe a typical experiment, you might start with locks of hair. Something like this eliminates one problem: there is no physical contact with the person, so you have eliminated the problem of valid information about the person arising from their physical characteristics alone. A lock of hair in an envelope presents very little useful *physical* information to a sensitive about what kind of person that human being is. So you start essentially with only some kind of token object, or just a name of a person, or an aura sticking around the doorway, or something like that, and you use, let's say, ten different persons, and your sensitive gives you a reading on each one of these. He says, 'This is a man of such and such an age. He does such and such for a living.' He gives various kinds of information. Some of it will be rather specific, and it might be right or it might be wrong.

Now if you simply gave those readings to each of the ten people and say: 'This is what was said about you. How accurate is it?' you would still be dealing with a purely subjective evaluation.

Instead, what you do is to take *all* the information from all ten readings, and put it together in one big heap. You just type it all out into single statements of information, with no indication that this was intended for this person and this was intended for that person. You take the whole battery of information, you give this to all the people, and you say, 'Some of these statements were intended to be about you. Some of them were intended to be about others. I'm not telling you which. But you should treat every statement *as if* it were intended to be a description of you, and rate it as true or false.' You can use a more elaborate rating system if you want to, to allow for the improbability of various kinds of thing.

You then get all this information back, and you break the code showing which statements were intended for which people and which were not and you can then statistically assess whether, at one extreme, the readings are equally right for everybody. Such a result is most simply interpreted on a null hypothesis of chance, that you are dealing essentially with generalities, there is really no specific information. Or, you can assess at the other extreme, whether statements specifically intended for a given person were right more frequently for that person than they were for other people. And you end up with a statistical figure on this that tells you whether you are dealing with paranormal information.

The beauty of this technique, and the refinements that could be done on it, is that you can find out when you have a 'good' sensitive, in the sense of someone who is really giving you information about what is out there, and when you have a poor sensitive who is primarily telling you about his own belief system. Again, this assumes you can filter out the information from the physical characteristics of the person. If you're doing an aura reading and the sensitive is looking at the target person, you're clearly going to get very significant scores with a Pratt-Birge analysis, but these are going to be a matter of what you can tell about a person simply from looking at his physical characteristics. But this sort of technique can begin to tell us how much paranormal information there is in the phenomena we study. Then, once you can develop a number of good sensitives who are giving you primarily paranormal information, then you can begin to use them in a calibrated way, or as a known good observer, and begin to study other kinds of auric properties.

SUMMARY

Let me just summarize by saying that if you ask a question, 'Is the aura real?' you are asking much too simple a question. Which

aura? The physical one? The psychical one? The psychological one? The projected aura? Under what kinds of condition, with what kinds of observers? Real to *whom*? To an instrument, to a human being, to an animal which you might train as an observer?²¹ So, you cannot just ask whether an aura is 'real.' You have got to specify what kind of aura you are talking about, under what kinds of condition, etc. What I have tried to do here is to indicate some of the methodological and logical complexities in the field we have been discussing and to point out the need for distinguishing these things, as well as to suggest some methods we can begin to use to get at these phenomena.

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I want to toss that out as a research possibility. We have a lot of folklore that animals are very sensitive to paranormal effects, and now we have a lot of psychological techniques which essentially enable you to train an animal so he can tell you what he's experiencing, in a limited kind of way. And the possibility of developing animals as bio-detectors, of a sort, that will give you an objectively measurable physical output in terms of their behaviour is intriguing.