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SECTION III - "CE III Aspects"
SECTION IV - "Psychological and Perceptive Aspects"
SECTION V - "Epistemology of the Research"



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EDITORIAL

We are pleased to start this editorial, thanking all people who wrote us, giving their support and agreement to our review.

We can say at this point to be fully satisfied for the good impression the review has had by the most serious and experienced researchers in the field.

Anyway these notes do not make us forget our sens of criticism and autocricism; that is why we could like to move some remarks.

First of all we want to point you one thing: UFO PHENOMENA wants to be an academic scientific review, therefore it is *not* a divulgation of UFO arguments. The divulgation of any branch of sciences must be done anyway, but as far as UFO inquiries concerns, there are a lot of valid reviews covering these requirements on the market. On the other hand, there is the need of having a review like ours, where authors and researchers could publish their papers entirely, in an exhaustive and complete way. For these reasons, we cannot justify a certain indifference showed towards UFO PHENOMENA by some groups and reviews dealing with UFO problems. UFO PHENOMENA places itself in the UFO world not as an antagonist to other publications, but as an obvious and natural completion for the diffusion, at all levels and according to all requirements, of the results at which all people, working in the UFO area, reached.

Another point on which all readers, as possible papers authors, must draw their attention, is the formal aspect with which papers are prepared. It happens very often that the papers we receive do not match with the instruction given in Instruction to Authors; this forced us to clarify more largely the instructions themselves. We heartly invite all people who intend to send us papers, to read *carefully* the instructions written in the following pages.

Last point, but not less important, concerns the way papers are made up. In fact, may be for the habit the Authors have to concentrate papers in a few pages, there is a tendency to synthesize everything. This means that often the Author who intends to show a statement, simply states his thesis, without outlining a demonstration. To this purpose we do not intend to have a detailed demonstration of everything in all cases. If a large literature exists on the matter, it should be advisable to refer to the same. As we think that ufology is a strongly interdisciplinary science, it is not always possible to think that

the statement which can be easily understood by a physicist with few data, can be in the same way understood by e.g. a biologist and vice versa.

Therefore we recommend the Authors to make a positive effort when preparing their papers, so that they appear the most clear and complete. In particular they do not leave implicit the conclusions of their works, but must express them clearly.

We complete these few notes going back to what said at the beginning of this editorial: the first step for the existence of a valid diffusion mean for the scientific approach to UFO phenomena studies has been done. The prosecution of this long way is now on all UFO researchers responsibility.

Roberto Farabone

SCOPE AND PURPOSE

This journal publishes *original* papers concerned with the following fields of research

- 1) PHYSICAL ASPECTS OF UFO PHENOMENA
- 2) GATHERING AND PROCESSING OF DATA CONCERNING UFO PHENOMENA
- 3) THE "CE III" (according to Hynek's terminology) IN THE UFO EXPERIENCE
- 4) PSYCHOLOGICAL AND PERCEPTIVE ASPECTS IN THE UFO EXPERIENCE
- 5) EPISTEMOLOGY OF THE RESEARCH ON UFO PHENOMENA

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INSTRUCTIONS TO AUTHORS

THE VERSION OF THE INSTRUCTIONS TO AUTHORS PRESENTED IN THIS VOLUME SHOWS STRONG DIFFERENCES IN COMPARISON WITH UPIAR VOL. I n. 1 (1976). FOR THE EVOLUTIONARY NATURE OF UPIAR OTHER CHANGES MIGHT BE REALIZED IN FUTURE ISSUES.

The following will be taken into consideration for publication:

- 1) Papers stressing experimental results.
- 2) Papers of theoretical content leading to higher level of understanding of the UFO phenomena and stimulating new experimental research.
- 3) Papers of experimental content not directly dealing with UFO phenomena, but having implications in the direction clearly expressed.

Editorial Papers dealing with subjects of general informative interest are published only upon request by the Editor-in-Chief.

Supplements (monographs or congress proceedings) are occasionally published. Announcements of meetings, symposia and workshops in the field will also be considered for publication.

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Only original papers written in English will be considered. As an exception, papers written in French will be also accepted. But, they will have a full English translation of the title and the abstract.

For the interdisciplinary nature of the journal, which is addressed to the scientific community as a whole, but also to those who are not familiar with the author's discipline, the contributors to "UFO PHENOMENA" are requested not to use technical terms or jargon.

All accepted manuscripts will be published by a *direct photographic reproduction process*, excluding every possibility of subsequent alterations.

Therefore either the form or the content of the paper should have been carefully checked to exclude the need for corrections in proof.

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- B) ORIGINAL PAPERS (MODELS AND HYPOTHESES)
- C) CASE HISTORIES
- D) BOOK REVIEWS
- E) LETTERS TO THE EDITORS

All papers should be typed, single spaced on one side only on good quality white paper - the max. size of each line must be of 15 cm - preferably of size approx 28x22 cm. The papers should contain an abstract of 200-300 words. This abstract should not be a mere summary of the work comprehensible only to people working in the area. Furthermore, it should underline the implication of this work in the understanding of UFO phenomena.

TITLE: The title should be chosen so that it conveys to the informed reader the particular nature of the contents he can expect from the paper. The first page of each paper should carry the title (main title underlined), the authors' names and the name of the Department, Institute or Association in which the research work was done.

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KEY - WORDS : A list of 5-15 key-words for indexing purposes *must* be given by the authors, after the Abstract.

CHAPTERS: ORIGINAL PAPERS (Models and Hypotheses) must be divided into chapters in the following order:

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- B) Introduction

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- E) Discussion
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REVIEW ARTICLES and CASE HISTORIES may be divided into Chapters at the authors discretion.

ILLUSTRATIONS: All illustrations (photographs, diagrams or graphs) should be in the desired final size. The proportions of the printed page (12x18 cm) should be borne in mind when authors are preparing the format of illustrations. Several figures should be grouped into a plate on one page.

LINE DRAWINGS: Submit good-quality glossy prints. The inscriptions should be clearly legible. Letters 5 mm. high are recommended.

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CAPTIONS : Each figure should be briefly and clearly described. Remarks like "For explanation, see text" should be strongly avoided. Captions are a part of the text and should be appended to it. Any lettering or annotation should be indicated on a tracing overlay or a photocopy of the original. All figures should be numbered in sequence.

REFERENCES : References must be limited to publications quoted in the text; they must be listed in alphabetical order, according to the surname of the first author, and be cited as numbers in the text according to the quotation. For Journal Papers, the following data must be successively reported: Surname and initial(s) of the first name(s) of the Author(s), year of publication in brackets, full title of the publication underlined (or abbreviation of it, according to international usage), volume, issue and page(s) number.

For example: - Poher C. (1976) - LUMIERES DANS LA NUIT 19, No. 158, 3
(or) - Poher C. (1976) - L.D.L.N. 19, No 158, 3.

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When a paper with more than two authors is quoted, all authors will be mentioned in the first quotation, but afterwards the first only will be mentioned, for ex. : (Schwarz et al., 1970).

Responsibility for accuracy of references rests with the author(s).

SYMBOLS AND TERMINOLOGY : With regard to the abbreviations, symbols and

technical terms, the authors must use the international rules when they exist. If they do not exist, one may use the terminology of well known authors or treatises.

The editors of UFO PHENOMENA strongly recommend the development of *a uniform terminology* for descriptions and evaluations of UFO reports. Meanwhile, authors should always mention explicitly the terminology used, e.g. "The terminology followed is that used by ...", or "According to the classification of ...".

A list of uncommon abbreviations could be placed by the author(s) as a footnote on the first page of the article.

FOOTNOTES: They should be avoided; if essential, they should appear on the first page of the article.

REPRINTS : Fifteen reprints will be sent to the Author free of charge. Other copies will be available on request, the cost depending on their number.

ABOUT KEY WORDS

As you can see in the instructions to Authors (p. 5) a list of 5-15 key words is requested to authors for indexing purposes.

Looking at manuscripts so far submitted for publication we have yet to remark most of them do not meet this requirement.

This want is likely due to the fact our contributors did not receive the Miniature Issue of UFO PHENOMENA before writing their articles. On the other hand we think useful to summarize the meaning of this practice, typical of any scientific journal, for those still not familiar with it. Webster defines key word as "a significant word from a title or document that is used as an index to content".

Now through proper key words authors supply jointly to their papers the Subject Index and the information retrieval system as well could be prepared.

Some scientific journals point out the index terms have to be chosen from a **Thesaurus** (i.e.: a list of subject headings with a cross-reference system).

Thus we find the **Index Medicus** which collects the medical subject headings. All the same the **Chemical Abstracts Service Source Index** (American Chemical Society) is used in chemical and biochemical literatures.

In UFOlogy we lack a **Thesaurus** even if words as "abduction", "entity", or "teleportation" and so on are by now widespread and therefore potential index terms.

As clearly stated in the Instructions to Authors (p. 7) one of UFO PHENOMENA goals is the foundation of a uniform terminology for descriptions and evaluations of UFO reports. The creation of a **Thesaurus** in UFOlogy is a legitimate part of this schedule. But for the actual accomplishment of this purpose we ask for the close cooperation of our most experienced contributors of the Advisory and Editorial Boards.

Suggestions and outlines in this sense are urged and should be sent to the EDITECS address.

CALL FOR PAPERS

Authors are requested to send as soon as possible their manuscripts to be considered for publication in UFO PHENOMENA Vol. III No. 1 (1978). All manuscripts must be received not later than December 31, 1978.

A careful reading and application of the Instructions to Authors (see p.4 in this issue) is strongly recommended.

In fact it will be one of *basic* principles used in the final approval of any paper submitted for publication in the journal.

Review articles, original papers (models and hypotheses), analyses of UFO cases, book reviews, letters to the editors, contributions for debates, criticisms and suggestions, are welcomed.

Long and detailed manuscripts will be preferred to short and scarcely significant communications.

PHYSICAL ASPECTS

A COMPARATIVE ANALYSIS OF 62 «SOLID LIGHT» BEAM CASES

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Received December 29, 1977

"Avoid the teachings of speculators whose judgments are not confirmed by experience."

Leonardo da Vinci

"Of all studies of natural causes, light gives most pleasure to those who contemplate it."

Leonardo da Vinci

ABSTRACT: Witnesses of UFO related events have repeatedly mentioned the fact that the anomalous objects observed by them emitted one or several solid looking, slowly propagating light beams ('solid light' beams).

A comparative analysis of 62 cases of this type is presented. It is shown that the characteristics of 'solid light' beams are remarkably constant: uniform luminosity; sharply defined edges; low propagation velocity; conical or cylindrical shape; and (sometimes) propagation along a curved path.

Forces exerted by the beams and different types of light emitted by them are analyzed. All characteristics are discussed from a phenomenological as well as a physical viewpoint. A separate section is devoted to the various practical uses to which UFOs seem to be putting these beams.

In an appendix a short survey is given of the closely related topic of 'solid light' objects and 'structured light'.

This article is an elaborated version of the relevant sections of (G), parts I, II and III.

KEYWORDS: Curved Light Beams; Fluid Light; Foo-Fighter Type Objects; Forces Exerted By Light Beams; Light Beams; Light Feelers; Light Spheres; Non-Illuminating Light; Non-Reflecting Light; Paralyzing Light; Slowly Propagating Light; Solid Light; Structured Light; Switch-Off/Switch-On Effect.

1.1 PHENOMENOLOGY

UFOs are frequently reported to emit light beams. Some of these beams have a peculiar character in that they propagate slowly, have a strictly uniform luminosity and a very sharply defined outline ('solid light' beams). Witnesses tend to think they are solid or fluid luminous extensions of the UFO and they often describe this aspect of their experience in almost identical terms.

The following quotations will set this in evidence:

In case (29) the witness stated: "My first impression was that the machine stood on the ground by means of legs or pillars. Then I realized that they weren't legs but light beams."

The witness stated that he thought they were legs because of their uniform luminosity.

Case (12) is remarkably similar. An object was seen which seemed to stand on about eight to ten light beams. The witness was sure they were light beams, because he could see trees through them. Compare also with (39).

In the first two cases the beams, when first observed, were static and terminated on the ground. The way they disappeared can leave no doubt, however, that they were no common light beams.

In the first case (29) the object withdrew the beams "like a bird folding its wings" and at Monaca (12) the beams retracted after the object had started to rise.

In other instances the unusual character of the beams is even more evident, because they abruptly end in mid air or are seen to propagate slowly or both, as for instance at Serdon (7), Logrono (36) and Connersville (15):

"After about five minutes a light flashed on board the

machine. This beam of light did not come straight down like the beam of a projector, but it unrolled like a rope ladder! It came down quite slowly, yes, just like a rope being uncoiled." (7)

"I thought for a moment that it was a telescopic antenna coming out of the device; however, a few instants later, I realized that it was actually a beam of light.(.....) it came out with an exaggerated slowness, like the antenna of a snail. Its progress was slow and direct (.....)." (36)

"Then a kind of plate opened up, big, wide. It looked like a porthole and there were two metal pieces and there was a little one in the middle, and it just slid open. Then a big beam shot down, kind of whitish orange. It went down north of town, real fast, and came back up." (15)

Of course, the remark of the witness that the beam "went down real fast" means that it actually went extremely slow in comparison with a regular light beam which travels at the speed of light.

At Trancas (10) one of the women involved at first thought the beams she saw were jets of water, because of their crystalline clarity. To test this hypothesis she thrust her right forearm laterally into one of the

'tubes'. Her arm didn't get wet. Instead she felt a powerful sensation of heat, but her skin was not affected.

She hasn't been the only one to think that the beams have a fluid character:

"Lower down something like a lampshade was hanging. It was shining with a strange purple light (.....). The light was flowing and pulsating from the 'lampshade' like water from a fountain. Where the light hit the ground I could see a sparkling effect." (2)

"Suddenly a light beam came out of the craft (.....) this light beam was curved, somewhat like a jet of water coming out of a gardenhose." (32)

Case (16) is also interesting in this context, although no light beam is mentioned:

"(.....) a 'six-storey' object (.....). It gave off rainbow colors which appeared to pour off its edges 'like water' in a fantastic display."

'Solid light' beams tend to have a cylindrical or conical shape and they can be either hollow or solid, i.e. the luminosity is either restricted to the outer surface of the beam or it is equally present in the inside of it. Cases (20) and (47) are examples of hollow shapes. They seem to be rarer than solid ones.

If a beam is cone-shaped it either diverges or converges. As always, different shapes have been reported: In cases (4) and (40) the beams had a rectangular crosssection. At Ellezelles (37) a UFO projected three curved beams downward from a considerable height. They started out by diverging to about one metre above the ground and from there converged to a point on the ground. After touching it, the reverse process took place while the beams withdrew again. This repeated itself for about half a minute.

Curved 'solid light' beams have also been observed at Tocopilla (32 - see above), Traunstein (45) and at Laroque-Timbaut (59).

On the col d'Aspin (11) two UFOs were seen to send a 'slow flash of lightning' to the ground. The description of this phenomenon is very interesting, especially if compared with the account of the observation at Serdon (7 - see above):

"During a couple of seconds nothing happened; then, to our great consternation, out of this light, which was bewildering in its fixedness, came a white, threadlike light, zigzag-shaped with sharp angles, which slowly started falling vertically downward like a rope-ladder being unrolled from a roof. Our astonishment was

indescribable."

Another unique case in the same category is (27). An anomalous object (possibly of the 'structured light' type - see appendix) emitted a curved beam downward. This beam was not in one piece, but chopped. The witness said: "It was a beam of light similar to a very thin neon tube and it consisted of pieces, somewhat like the dashes and dots of the Morse code. It came down following a curve and then, in a flash, it completely disappeared. My hair stood on end on my head. I couldn't imagine a thing like that."

When a UFO starts to emit a 'solid light' beam, the witness sometimes thinks it is changing its shape, because, at first, no distinction is visible between the beam and the object itself (24, 36 - see above) and the beam comes out of the object as if straight through the wall.

In other instances it comes out of a special opening or circular rim often located in the bottom of the craft (15 - see above, 26, 28, 30,61).

At Ängelholm the beam reportedly was emitted by a kind of lampshade (2 - see above).

The propagation of 'solid light' beams is a silent

process, but their appearance and disappearance is sometimes accompanied by sounds. At Champ du Feu (18) the beams appeared and disappeared instantaneously and a click was heard each time. At Boondael (47) the appearance of a gray-blue, hollow cone of 'solid light' seems to have been accompanied by a crackling noise.

The eventual length reached by a beam varies greatly, but can be considerable. At Trancas (10) and Villiers-en-Morvan (24) distances of 3200 m and 2200 m resp. were covered at speeds of 13-19 km/h and 13-26 km/h resp. These values have been computed from data obtained during the field investigations. There are indications that the speed of 'solid light' beams is highly variable. At Ellezelles (37), for instance, the beams came down and went up again a couple of times within an interval of about thirty seconds. As the main object was rather high up in the air, one gets the impression that the beams must have propagated faster than at Villiers-en-Morvan and Trancas. Compare also with Connersville (15 - see above).

Cylindrical beams with est. diameters ranging from 1 cm (Champ du Feu (18)) to 3 m (Trancas (10)) have been seen. One of the largest cones has been reported from Denmark (30). It had a base with a diameter of 4-5 m. The engine

of the car of the witness, a police officer, failed when he entered the bluish-white cone (see section 1.2) and he observed how it started to withdraw into an object above him in the typical manner of 'solid light':

"After a few seconds the light was drawn into the thing. It is difficult to explain how; the light was not extinguished, but the bottom of the light was rising, so that it became dark under the cone. It took about five minutes for the light to be drawn up."

The beams seem to be predominantly white or bluish, but almost all primary colors have been reported and some very strange ones besides: purple (2); green-mauve (18); gray-blue (47); "The color of the light is difficult to describe. It was a combination of red and violet, a color which I had never seen before, though." (23); dull gray changing to bright white when the object started moving (61).

At Serdon (7) everything illuminated by the beam acquired a bizarre range of colours. Yellow and green maize plants turned blue and the hand of one of the witnesses turned lemon yellow while she felt a slight tingling in it. The colour of the beam itself isn't mentioned by the witness.

See (49) for a beautiful photograph of a yellow UFO

emitting what presumably are four green beams of 'solid light'.

The character of the light emitted by the beams, again, varies greatly. Sometimes it is reported to be very strong and/or harsh (7,19,24,32,60), but in other cases it is described as 'cold', 'non-radiating' and/or 'not illuminating' its environment (29,38,40,48,56).

At Catanduva (41) the car of the witness became completely transparent when a bluish beam of light was directed at it. He could see every detail of its interior.

For more details on the various possibilities the reader is referred to the next paragraph.

Having finished their task (see section 1.3) the beams disappear. A slow withdrawal - the reverse of the production process - is most often seen, but not always.

At Boyup Brook (20) the hollow 'tube' aimed at the car of the witness was suddenly switched off, "just like someone switching off an ordinary electric light".

The same happened at Champ du Feu (18 - see above) and at Imjärvi (28) in the words of one of the witnesses "the circle above the snow suddenly decreased, the light beam floated upwards like a trembling flame and went into the tube of the object".

In the night of October 28/29, 1973, an impressive sighting with many unique features was made at Traunstein (Austria) (45). A number of objects was observed which periodically emitted two orange-yellow 'feelers' of 'solid light' in an upward direction. The 'feelers' grew slowly, bending outwards. At a certain point they disintegrated and a new cycle began. During a follow-up interview the main witness, Hans Pritz, gave investigator Ernst Berger the following details on the disintegration phase:

Berger: Mr. Pritz, it is September 5, 1975. Do you still recollect the happenings of October 28/29, 1973?

Pritz: Certainly I do.

Berger: That 1973 interview was the first big study I did as field investigator, so I did not ask too specific questions. You have said that after slow upward extension of the 'snail feelers' their tips turned green, green mist fell sideways and the feelers disappeared. Do you think this is the best possible description of the 'feeler' phenomenon?

Pritz, after consideration: Well, looking back once again I won't think so. There are some differences.

Berger: Yes, tell me, please.

Pritz: The 'green mist' was like a veil, not particles falling down or the sort. And concerning the green tips - it was no green discoloration of the very tips but kind of green halo, bright halo 'round the upper end of the curved tubes of light.

Berger: You call them tubes?

Pritz: It wasn't just a line, or two lines, tube of light is a better expression. Now, the upper limit stopped, remained yellow-orange, got a green rim, that wave of green light rotated over them and finish, that's how I remember it.

Berger: What do you mean by 'wave' and 'rotated'?

Pritz: The feeler's switch-off happened very quickly at every occasion.

Berger: OK - green area first 'round tips, and then?

Pritz: That green veil or fog-patch swished around from left to right, and all went dark.

Berger: You mean a luminous something moved around the 'feelers' counterclockwise - only in the tip area?

Pritz: No, the rotating veil went further down over the feelers, but never as far as to the object. Sometimes a bit higher, sometimes a bit lower

down. And round the two feelers.

Berger: This all sounds like an electromagnetic process without much mass involved.

Pritz: Maybe. When the patch had swished past the right feeler, it was the end of the whole 'signal'.

Before passing on to a discussion of the physical aspects of 'solid light' beams in the next paragraph, one more feature has to be mentioned:

They sometimes exert a mechanical force on objects or living beings hit by them.

At Logrono (36 - see above) the tube of 'solid light' emitted by the mini-UFO slowly approached a transistor radio (which emitted high-pitched beeps while the UFO was close) and upon touching it caused it to wobble. This happened twice.

In cases (3,6,17,22,54) the witnesses were knocked backward or thrown to the ground by light beams, while at Itaperuna (31,33) two people were allegedly levitated. It is not always clear whether the beams involved in such events are of the 'solid light' type, but there is every reason to suspect that they are, especially since in the Logrono case there can be no doubt about the character of the beam.

1.2 PHYSICAL ASPECTS

At this point the reader will realize, that 'solid light' beams are very different from the ordinary beams we are accustomed to. They show very little evidence of known physical effects.

René Fouéré, who has been one of the first to call attention to the 'solid light' phenomenon, has repeatedly emphasized this point in a number of interesting commentaries on the properties of 'solid light' published in *Phénomènes Spatiaux* during the past ten years (10,23,24, 32).

Their slow propagation speed, uniform luminosity and cut-off character rule out any possibility that they are generated by a central light source.

A 'solid light' beam presumably is a sharply defined, hollow or solid, tubelike zone at every point of which light is produced. Compare with a TL (but without glass or electrodes, of course - the witness in case (27) compared the beam with a neon tube (see previous section)). The length and shape of the beam can be controlled by the UFO.

How the light is produced and how the production mechanism can be kept confined to such a well-defined zone

remains unexplained, but there can be no question that 'solid light' is an objective phenomenon. It will not succumb to psychological interpretations.

The curved character of some 'solid light' beams becomes somewhat less amazing (although we still cannot explain it, of course) now that we realize that they are fundamentally different from ordinary ones. Evidently UFOs are able to channelize the light emitting process along a curve, somewhat analogous to the curved TL's used in skysigns.

A sharp distinction should be made between curved 'solid light' beams and the bending of ordinary beams, assuming the latter effect is real. The author knows of only one case in which this allegedly happened, viz. the observation at Wycheproof (68). The headlight beams of a car seemed to bend to the right when it came close to a UFO. It is not clear how the UFO managed to do this, but a first step towards an explanation might be to assume that the zone close to the UFO was a highly inhomogeneous medium for the propagation of light.

Gravitation can't be the cause, since the field strength (gravitational acceleration) necessary to produce a noticeable amount of curvature is forbidding.

The light emitting process inside the beams isn't hampered by solid objects or living beings. At Trancas (10) the beams penetrated the fence of the farm and one of them, aimed at the house, almost certainly penetrated its walls. Inside the house it became entirely lit up and the temperature rose by 24°C. (Compare with (30).)

Furthermore, Señora Yolié put her arm into one of the beams (see section 1.1). The beam remained unaltered and her arm didn't cast a shadow.

The same lack of a shadow zone was observed at Pézuls (40): A square beam entering a room through the window wasn't hampered by the window frame. The part of the beam inside the room had a very strong and strictly uniform luminosity, which didn't illuminate the room itself (see below). Nevertheless a projection of the window frame was visible on the opposite wall.

At Oulu (62) a boy was penetrated by a 'solid light' beam. He screamed with pain and lost consciousness. His muscles were totally stiffened and his pulse was slow. After five minutes he regained consciousness. Later in the evening numerous red spots appeared on his chest and a red area appeared on his back. These symptoms disappeared within a day. It is interesting to note, that at Trancas Señora

Yolié didn't experience any such spastic condition in her arm. She only felt a sensation of heat in it.

At Serdon (7) the witness felt a slight tingling in her hand when a 'solid light' beam touched it.

The Serdon and Oulu cases indicate that the light emitting process is, at least sometimes, accompanied by an electrical or electromagnetical process, possibly caused by a partial ionization of the air. This may even be responsible for part of the light emission of the beam, but 'solid light' beam characteristics are such, that they cannot be accounted for by assuming the beams are simply tubes of ionized air.

As has already been said in section 1.1 the character of the light emitted by the beams varies drastically. At Torchefelon (60), for instance, an extensive zone of 'solid light' seems to have been observed, which emitted a very harsh light. Again, there were no shadows inside the zone:

"I went to the window (.....) with my wife and saw a kind of big headlight on the opposite hill, which emitted this strange white light. It was the quality of the light which gave me the impression, that this was no ordinary thing, it was real weird.

There was a sparkling all around it, on the circumference of the light, the inside of this light was less brilliant than its edge, one got the impression that it was the circumference which illuminated the inside. (.....) the room was very brightly illuminated, as if in broad daylight, outside as well, but it was weird, there were no shadows, even the things and the trees in the courtyard had no shadow, the window frame stood out very clearly in the room, though. This light was very harsh and very bright and it was white-orange. Around it there was a kind of undulation like in advertising signs where you have those rotating lights. The outline was vague, not a clearly defined circle. Then there were those well synchronized sparklings, which seemed to have a direction: from left to right, but very clear. Then it suddenly disappeared and only a green and red point in the center remained."

Compare with (7,19,24,32).

On the other hand, the beam at Pézuls (40 - see above) didn't illuminate the room although it was very bright. Compare with (29,48,56). The non-illumination effect isn't limited to 'solid light' beams: In a number of cases very bright UFOs have been seen which didn't illuminate their

surroundings although they should certainly have done so. There is every reason to believe that this is an objective phenomenon, like 'solid light' itself, and that an unknown type of radiation (non-reflecting light) is involved, which is much less reflected than normal light. A remote possibility is, that the light is of the ordinary kind, but that the UFO influences surrounding matter in such a way that it doesn't reflect light anymore. This would give rise to a dark zone around the UFO, which seems to be extremely rare. See (G), parts I and II for a systematical discussion of these and other aspects of non-reflecting light.

Some of the UFOs emitting non-reflecting light consist wholly of 'solid light' themselves. See the appendix for a short survey of this type of UFO and further references.

At Champ du Feu (18) a UFO projected three very thin 'solid light' beams obliquely downward. They didn't touch the ground, but at the point where they would have touched it, if they had been longer, the witnesses saw a trapezoidal ribbon of light.

During the second phase of the observation at Oka (19) a fantastic phenomenon was observed:
A beam of 'solid light' came out of the top of the UFO and

rose slowly to a height of about 12 m, after which it started to spread out and fall down, creating a transparent bell shaped 'wall' around the object. Where the 'wall' hit the ground it cut out a luminous circular region with a diameter of about 80 m. The UFO itself hovered at a height of about 5 to 6 m. The witness compared the phenomenon to a fluid curtain surrounding a squirting fountain.

Perhaps this should be compared to the event at Catanduva (41) where a kind of 'transparent curtain' was seen to encircle a UFO little by little.

In 1969 Gordon Lore wrote (H, p. 32):

"Cases of UFO light beams apparently causing E-M effects are, as far as we know, only about a year old. The first report came from Albany, Georgia, when Conway Jones' car was affected as he drove through a light beam being emitted from an object hovering at low altitude. A thorough study of such cases could conceivably afford important clues to at least one method UFOs apparently have of creating E-M effects."

There is no satisfactory theoretical explanation for the electromagnetic effects produced by UFOs and we are unable to imitate them by technical or any other means.

Nevertheless, not much has been done along the lines suggested by Lore. In the following a very modest attempt will be made to pursue his idea.

Lore's remarks follow an account of the Lancaster (Missouri) case, in which a woman reportedly entered a cone-shaped beam with her car (26). The cone was being emitted by an object about 300 m up. As the witness drove into the beam her car slowed down. She said:

"My car's speed dropped from 50 mph to 8 mph. It did not start to miss; it merely slowed to that speed, although I had the footfeed on the floor."

When the car left the beam, it again functioned normally. An almost identical event happened at Fjelstrup (Denmark) (30 - see previous section), except that the witness brought his car to a halt inside the beam after the engine had stopped, when he entered it.

All its electrical systems failed and inside the car it became hot. After a while the cone started to rise and when it had disappeared into a hole in the bottom of the craft, this started moving. It accelerated strongly and vanished within a few seconds.

A most revealing detail is that the light of the car returned only after the object had started to move away and

not immediately after the beam had risen above the car. From this we may conclude (if the account given is correct) that the light emitting process itself didn't cause the breakdown of the car's electrical system, although it may have caused the temperature rise inside it.

The author has been unable to refute or confirm this conclusion for lack of comparable reports.

The Fjelstrup case seems to indicate, that 'solid light' and electromagnetic effects are largely independent phenomena, contrary to what one is inclined to think after a first glance at the Lancaster case and the Fjelstrup case itself (and compare also with Pézuls (40)).

Of course, there are many instances of E-M effects without accompanying 'solid light'. In some cases the 'solid light' appeared only after the E-M effects had made themselves felt (Serdon (7) and Newfields (17)) and there are also many cases of 'solid light' without accompanying E-M effects. The author hopes, that the E-M effect catalogues which are being prepared by BUFORA and CUFOS will contain the case material needed for a fruitful continuation of this aspect of 'solid light' research.

E-M effects seem to be closely related to the paralyzing influence occasionally experienced by people in

the vicinity of UFOs, although the correlation between both phenomena is far from perfect.

However that may be, paralyzing 'solid light' beams have been reported in at least three cases (4,21,31).

UFOs are often wrapped in haze and this is another neglected physical characteristic.

In case (29) the object became wrapped in a luminous haze at the moment it withdrew the light beams it was projecting towards the ground (see section 1.1), as if the light emitting process concentrated in the beams became dispersed around the object. Something analogous was observed at Goux (34). Here the UFO had a clear-cut outline while emitting two 'red bars' obliquely downward, but when it was seen without them, it had vague contours and was surrounded by a kind of halo.

The main object at Trancas (10) developed a dense haze before aiming a beam at the house, but here the haze didn't disappear while the beam was produced.

1.3 WHAT PURPOSES DO 'SOLID LIGHT' BEAMS SERVE?

In many cases they are evidently used as an aid to observation (7,10,18,19,20,24,32,36,40,41,44,56).

This need not necessarily be visual observation as one is

almost automatically inclined to think. Reading the account of the Logrono case (36 - see also section 1.1) one gets the distinct impression, that the 'solid light' beam emitted by the mini-UFO was a kind of feeler. After touching the radio two times, it crept towards the taperecorder and touched it as well. Javier Bosque, the witness, compared the beam with the antenna of a snail. The precision with which the beam was directed at the two electronic devices in the room shows that the UFO must have been aware of their existence by other means. Possibly by sensing the weak, relatively low-frequency electromagnetic radiation coming from them. Both were switched on and operating. Of course, if some of the beams are indeed active sensors, the process taking place in them must be much more complex than we have hitherto assumed (see also below). This complicated process need not be visible to us and apparently isn't.

In some cases the beam is reported to be moving around as if looking for something:

"(...) we had the impression that it [the beam] was looking for us. That is to say, every time anything stirred, the beam moved towards it." (7)

At Oka (19) the beam first scanned the ground immediately below the UFO, moving in circles, and then its immediate environment, as if looking for something. Before long it reached the window behind which the witness, a thirteen year old boy, was standing on a bench in order to get a better view. He was blinded by the light and threw himself to the ground.

At Tocopilla (32) a curved light beam behaved in a similar manner.

At Boyup Brook (20) Mr. Spargo found himself surrounded by a hollow 'solid light' beam. He said:

"I had the most extraordinary feeling that I was being observed through the tube. I couldn't see anyone - I could just make out the shape of the glowing craft. I felt compelled to look up the tube. But I didn't feel any fear, and I don't remember thinking of anything in particular. I just sat and looked up that tube of light."

The forces exerted by some of the beams are used in at least three different ways:

(a) They are aimed at onlookers to keep them from coming closer. Such beams either come out of the UFO itself (17, 22,54) or they are emitted by 'weapons' operated by humanoids (3,6). Bruno Facchini told his interviewer (3):

"(..) after I had run a few paces I turned round, and saw one of the pilots grab a sort of camera that he was carrying round his neck and shoot a beam of light at me. I carried on running, and simultaneously I had the impression that I had been struck by a blunt instrument or, to put it better, by a powerful jet of compressed air, and I fell to the ground (.....)."

(b) They are used to manipulate objects and living beings. At Connersville (15) the beam picked up something, which, according to the witnesses, looked like a small car and drew it into the UFO.

At Itaperuna (31) the witness was levitated:

"Upon approaching the said object, he saw emerge from its interior two men of small stature each measuring approx. 30 cms. in height. [This is very small indeed. J.H.] Then the said creatures took from the belt of one of them a big roundish object resembling a torch, from which came a beam of blue, and at times reddish, light. They threw the beam in his direction, and when it struck him he was lifted up and suspended in the air as though he were a bird. The more powerful the beam of light grew, the higher he rose in the air, until he was at a height of about 50 metres. He felt totally paralyzed, being unable

even to cry for help. After some five minutes or so had passed, the lights of a car appeared on a high area towards Retiro and Muriae. The said creatures then slowly lowered the beam of light towards the informant's car and placed him inside the car without even touching him with their hands, the whole thing being done solely by the power of the beam of light coming from the aforesaid strange object (torch)."

(33) is another levitation case, while paralyzing beams are mentioned in (4) and (21).

Of course, manipulation of objects cannot be explained by assuming a simple exertion of force on the object to be moved, but it presupposes a much more complicated system of forces, which must be carefully balanced by a feedback system. Again (see above), this would imply that the beam has a very complex structure.

(c) They are used by humanoids as an aid in leaving and entering their craft (9,14,25).

At Imjärvi (28) a small humanoid appeared on the ground in the light beam. Its actual descent from the UFO was not observed by the witnesses, so it isn't clear whether the complicated behaviour of the beam had anything to do with it.

At Trancas (10) a horizontal beam connecting two UFOs was seen. Humanoid figures moved to and fro between them and according to Señora Yolié they were inside the tube, apparently using it as a kind of subway. Compare with (5).

Most cases are less readily explained and the reader should keep in mind that even in those cases where an explanation seems evident we cannot be sure, because the real nature of UFOs is completely unknown.

As a result there is no lack of unsolved problems in connection with 'solid light' beams and it is no exaggeration to say that, except for certain phenomenological aspects, nothing definitive is known about them.

The reader may want to try his hand at some of the more obvious questions:

What was the purpose of the 'solid light signals' observed at Traunstein? What were the Traunstein UFOs doing?

Why are UFOs sometimes seen 'standing' on 'solid light' beams?

Why did the object at Ellezelles repeatedly touch the ground with three curved, pointed beams?

What was the object at Taizé, with its cones of 'solid light', its satellites and its dark companion, doing?

Why did the UFO at Oka surround itself with a 'screen' of 'solid light'?

What was the purpose of the Trancas operation?

The author doesn't have the slightest idea what the eventual answer to these questions will turn out to be.

2. APPENDIX: 'SOLID LIGHT' OBJECTS AND 'STRUCTURED LIGHT'

Apart from 'solid light' beams there exists a class of UFOs which seem to consist partly or wholly of 'solid light' themselves. We will call them foo-fighter type objects, because the foo-fighters of World-War II belong in this class. These UFOs present remarkably constant features:

Spherical shape; 'switch-off/switch-on' mode of movement, i.e. the UFO suddenly disappears (switch-off) and reappears somewhere else (switch-on); emission of non-reflecting light (see section 1.2); an often highly complex internal structure without visible material substrate ('structured light'); and playful, intelligent behaviour.

Typical examples are (63,64,65,66,67). See (G), part II, for an analysis of foo-fighter type UFOs and 'structured light'.

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I would appreciate it very much if readers would bring to my attention any good cases giving further evidence of the phenomena discussed in this article. My address is: Hofgeest 241, 1102EL Amsterdam, Holland.

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GATHERING and PROCESSING of DATA

AUSTRIAN UFO PATTERNS

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Abstract

54 sporadic and 31 local flap reports (on a total of 127 objects/phenomena), 56 of them investigated personally at their original sites by the author, are compared statistically. The first data set consists of cases all over Austria reported by 89 observers during 5 years; the second one is from the Traunstein area of Lower Austria with 34 local witnesses (13 reporting) and three years of sightings. The data are similar with regard to time of day, duration, number of objects, shape, size and motion of the phenomenon, but other observed characteristics show deviations. Austrian UFO patterns are extracted and compared with the results of statistical studies by HANSEN (19), POHER (22,23) and VALLEE (26).

Key words: Austria; Traunstein flap; sporadic data; reliability; MMPI; time of day; duration; elevations; heights; distances; sizes; shapes; brightness; colors; motion; UFO patterns; POHER-VALLEE "Bouguer line"; geomagnetic disturbances.

INTRODUCTION

The following study can be called unique. The first in-depth analysis of cases from German-speaking Central Europe, it is based on UFO cases from Austria which were all investigated, coded and statistically evaluated by the same researcher. To use a demographic expression, if there is bias involved, it is fairly uniform over the whole bunch of data. 85 reports is a small amount of statistical information compared to foreign computer projects, but what really counts is data quality.

MATERIAL AND METHODS

The sporadic data

From May 1972 until June 1977, the MUFON Representative for Austria has collected and evaluated well over 100 first reports on sporadic cases (i.e. cases not in connection with a local flap or "wave"). After careful investigations, 27 by the author at the original sites, 54 case histories have remained unidentified. Cases with a remote explanation possibility have been excluded from this analysis, observations occurring after August 15,

1975, already been published as abstracts in BERGER (12). Some unidentified sightings of 1972, 1973 and 1974 may be checked in BERGER (2,3,4,6). Figure 1 gives the observation sites of the 54 case histories. We are aware of the fact that coverage of Eastern Austria is far better than of the west. Our investigation center is at Vienna and a good amount of field studies has started with a local telephone call.

The local flap data

MUFON-Austria has studied two local flaps at Austria, one around Traunstein, Lower Austria (Lat.48°26'N, Long.15°07'E), lasting from summer 1973 until winter 1975, the other near Graz, Styria, between summer 1972 and fall 1974. The Traunstein observations have been fully documented in BERGER (1,5,7,9) and are important because a variety of witnesses has confirmed the special patterns. The Graz flap published in BERGER (8,10,11) was more or less observed and reported by the inhabitants of one house leaving room for criticism. Therefore, the Traunstein data set was selected for statistical comparisons. 29 of the 31 reported observations were investigated at their original sites during 10 field trips to the area, giving the data set an unusual quality.

Investigation procedures

Conclusions to be drawn from a case should be proportional to the investigation quality. For the field study of an account our standard procedures follow the guidelines of MUFON's Field Investigator's Manual by FOWLER (17). Our

set of data differs from the average investigation report with regard to azimuth/elevation, size estimation and the color test.

Azimuth/elevation were always obtained by the use of a precision field compass with fore-and-rear-sight and a 30x20 cms big quadrant. Size estimations by the witnesses did not use dubious "references in the sky" as suggested by FOWLER (17), but were all done with the standard size test kit described by "Lumières dans la Nuit" (20). For the color test, an East German philatelic color table with 160 shades was used throughout all investigations thus providing the first opportunity so far to inter-compare a full set of color estimates on the same base.

Reliability

RANDLES and DELAIR (23) have suggested a simple reliability factor for UFO reports:

- Level A - On-site investigation by experienced investigator
- Level B - Interview with witness by experienced investigator
- Level C - No interview, but witness fills out special ufo report form of some type
- Level D - Letter or written account from witness but no special follow-up
- Level E - Unconfirmed report, e.g. newspaper cutting, verbal account only

Level A means personal and site contact, B only personal contact, C-E no personal contact.

By experienced investigator MUFON-Austria understands a person with a Graduate and one year special education by theoretical studies on UFOs and fundamental fields as well as several field investigations together with an experienced investigator.

Applied to our data strictly the RANGLES-DELAIR classification yields 28 A-, 5 B-, 19 C-, 0 D- and 2 E-cases for the sporadics and 29 A- and 2 B-cases (no C,D,E) for the Traunstein flap. The overall reliability can be called good; the total number of field investigated cases within our two samples is equal.

Mr. Hans Pritz, first reporting Traunstein witness and a person involved in 14 encounters, only 3 of them without corroborating witness(es), is well known to the investigator as a trustworthy individual. To test this feeling scientifically and at Ernst Berger's request, Mr. Pritz did the Minnesota Multiphasic Personality Inventory (MMPI), a 566 question personality test by HATHAWAY and MCKINLEY, which in February 1976 was sent to Dr. R. Leo Sprinkle, Director of the Division of Counseling and Testing and Associate Professor of Psychology at Wyoming University, USA. The evaluation by SPRINKLE (24) dated March 2, 1976, did reach the following conclusion: "The examinee is not experiencing neurotic or psychotic reactions. If the examinee is a UFO observer, there is no indication - according to the MMPI profile results - that the observer is unreliable or may be confusing his experiences with internal processes."

RESULTS

Reports per year

The sporadic cases in Figure 2 show peaks in 1973 and 1976. The Traunstein data are distributed over the three years 1973, 1974 and 1975.

Reports per month

December peaks are apparent in Figure 3 for both data sets. The maximum interval for sporadics was December 1973, for Traunstein cases December 1974.

Time of day

All reports included time data on the hour of the sighting; in most cases the first observation moment was given with a 5 minutes precision. The peak interval for onsets of observations is 18 - 24 CET (6-12 P.M. Central European Time = GMT + 1 hour) for both sporadics and Traunstein sightings, according to Figure 4. The sporadics have a second peak in the early morning hours. All Traunstein cases happened at night, i.e. between local sunset and sunrise, but 7 (13 % of the) sporadics were seen in daylight.

Duration

All but two cases gave the phenomenon's duration. Figure 5 is more than a picture of the witnesses' interest in what they saw and the simple hypothesis "Vienna witnesses only glanced while Traunstein people looked more closely" will not work. Table A shows that 39 % of the sporadic witnesses watched until the phenomenon moved behind a terrestrial obstacle and was lost from sight whereas 65 % of the Traunstein witnesses left the scene with the object still there after extended watches and did not observe therefore how it disappeared. As the sporadics of Figure 5 have been carefully cleaned of meteors, airplanes and other conventional things, the

only remaining possibility is a difference in time scales between sporadics and Traunstein. Sightings around Vienna lasted from seconds to few minutes, Traunstein observations from several minutes to over an hour. Intervals below 1 minute and above 30 minutes show marked deviations of the sporadics from Traunstein, but there is an overlap between 1 and 30 minutes with 36 (43 % of all) cases in it.

End of observations

The higher percentage of obstacles terminating sightings is due to the smaller field of view in urban and suburban territory where most of the sporadics occurred and also influenced by the greater portion of objects in motion (see Table K). A comparison for both data sets is done in Table A. The third highest percentage is remarkable and a typical Austrian pattern - "the switch-off". It is usually described "like turning out an electric light" as an event puzzling to the witness. Since more than half of the Traunstein witnesses did not wait for the object's disappearance we cannot say whether the pattern was also common there.

Locations

The Traunstein area and witness locations for all sporadic cases are depicted in Figure 1. At the flap area the majority of reports clustered around Traunstein and Spielberg, two villages 2 kilometers distant where the main witnesses have their homes, and the B 36 road northbound to Zwettl the principal witness used to drive home from work. The spacing of the sporadics is not inversely, but

directly proportional to the population density at Eastern Austria and still very high to the south along the heavy industrialized Vienna Basin. The phenomenon seems to follow the geological fault structures at the western edge of the basin. Another concentration is at the Wechsel/Semmering mountains in southern Lower Austria. The area from Vienna to Semmering and further has recent seismic activity with local earthquakes. In a recent evaluation by the author it has not been possible to link sightings in time or space to local earthquake events or geomagnetic disturbances recorded at Vienna. The rest of our reports lies scattered all over Austria. A Bavarian report near the border to Vorarlberg and a pair of events from Southern Tyrol, former Austrian territory of German language, have been included.

Number of witnesses

Observations with more than two witnesses were rare in both data sets, according to Table B. 91 % of the sporadic witnesses observed alone or with one other person; 68 % of the Traunstein witnesses had none or only one corroborating person. Thus, multiple witness sightings were not very frequent in both samples but more at Traunstein.

Sex of witnesses

Every second witness of a sporadic but only every fifth observer in the Highland flap present at the scene was female. Table C gives the sums and proportions.

Age and education of witnesses

With 13 interrogated witnesses the Traunstein flap was of

no statistical interest for this evaluation. In the sporadics category, 53 % of the observers with known age were 50 - 75 years old. This seems to reflect the overaged Vienna population which contributed most reports. For details see Table D.

31 % of the sporadic witnesses with known education level had a higher or specialized education (academics, radio technicians, military specialists etc.), 36 % a general (Graduate, councillors etc.) and 33 % a low education level (elementary school, pupils, peasants etc.).

"Education" was defined with regard to the abilities needed in UFO observations. As a definitely lower percentage than 31 % of the Austrian population can be called higher or specially educated, the greater willingness of this group to report their sightings is likely to explain the distribution.

Aids

For 6 sporadic cases field glasses were available. In a seventh case binoculars were used, but through a window pane. One witness succeeded in taking a photograph of the object seen. During one of the unidentified cases the objects appeared on radar and their positions were confirmed visually.

In 10 Traunstein cases field glasses enabled the witnesses a closer look. On 8 occasions the binoculars of Mr.Pritz (8x40) were the instrument, in one encounter another 8x40 and during a multiple-witness case a second pair was used at the site. The use of a car played a role in 9 sporadic cases, but helped only at one occasion to prolong the

actual observation. One sporadic was an aircraft sighting. A car was in use during 8 flap events and provided additional informations in 4 encounters, one of them a "car chase" of the object.

Number of objects

An evaluation done on the number of objects per case (Table E) made clear single object cases are most frequent in Austria. For 12 sporadics it was impossible to decide how many objects, if any, were involved.

Elevations

Motionless objects presented no problems for Figure 6. The angle of elevation over the horizon ($= 0^{\circ}$) was taken, regardless of the location's height above sea level. For moving objects the maximum elevation reached by the trajectory or the elevation of a singular point (direction change, brightening) was plotted. For 38 sporadic and 46 flap objects elevation data were measured in the field. One flap object with negative elevation (below 0°) is not included in Figure 6. 16 (42 % of the) sporadic and 20 (43 % of the) flap objects had elevations under 10° . When plotted in classes both the sporadic and flap data show a decline of object frequency per elevation.

Heights

No triangulations were possible while investigating sporadics because it never happened that two witnesses would look at the same object from different places suitable for a distance/height computation. 10 distance

fixes (no more/no less away), some with satisfying results, were tried and yielded true heights above ground level from 10 meters up to 2000 meters. Once an object was seen descending vertically from 150 to 30 meters before "switch-off". Six triangulations and three distance fixes at Traunstein indicate the objects apparently moved between 30 and 80 meters above ground level/the treeline, with a minimum of 20 and a maximum of 225 meters true height. This would also explain the prevalence of low elevations.

Distances

Besides two CE I-cases which produced phenomena within witnesses' bedrooms - BERGER (13,15) - the minimum ground distance in the open was 100-200 meters for sporadics. Sporadics were also noticed as far away as 5-8 kilometers. For the Traunstein triangulation cases the confirmed minimum ground distance was 200 meters. Other distances range from 300, 500, 750 meters up to 1, 1,5 and 1,7 kilometers.

Object sizes

Table F is the result of our standard witness size tests. 67 % of the sporadic objects were under 30' wide in the sky (which is about the size of the full moon), at Traunstein even 81 %. The percentages of objects over 30' apparent size are with 33 % for the sporadics nearly twice as great as for Traunstein with 19 %. Few objects were greater than 2° (about four times the full moon).

The few sporadic true sizes obtained through distance fixes indicate a minimum of 5 meters for a low-flying

object and a maximum of 200 meters (dirigible size) for a "cloud-cigar".

Traunstein measurements yielded realistic true size estimates for 9 object types, with surprisingly small dimensions. Two hovering globes seen on different nights measured less than a meter across, another hovering ball (with 10 meters high "light feelers") was 1,5 meters big, but released 50 % smaller "satellites". 1,5 - 2 meters was the length of a low-flying cigar; a domed disc at the end of the flap had 5 meters, which was also the dimension of three globes hovering together with a 50 m long and 10-12 m broad cigar. The biggest one was an ellipse standing on end (15 meters) which extended 45 meters long "light feelers" giving a phenomenon of 60 meters total height which was observed by ten persons with two field glasses. Size variations due to shrinking of the object or rapid zoom-away along the line of view happened during 2 sporadics and 5 flap sightings.

Object shapes

The two data sets are highly similar concerning shapes of the reported objects (Table G). 31 % of all sporadics and 36 % of the flap objects were globes, some fuzzy, some sharply outlined. Next comes the category of points or dots of light (17 % of sporadics, 30 % of flap objects) and, in the sporadics set, the class of indefinite shapes (e.g. luminous arc) and complex, variable shapes (both about 15 %). Disc, cigar/wedge or egg shapes only contribute 5 - 10 % at both samples. "Domed discs" were only seen twice in five years, in the flap area.

Shape variations did occur in 5 sporadic and 6 flap cases; in 4 of the latter combined with size and color variations, so-called pulsations.

Object brightness

Although the visual estimation of brightness may vary greatly according to the state of dark adaptation of the witness' eyes, observational aids used, distance to object, atmospheric conditions (extinction) and background illumination, a comparison scale for subjective brightness has been used. We infer from Table H that objects in one third of the sporadic cases were between Venus and full moon brightness, another third of dazzling or extreme brightness. The general description of the flap objects was "brighter than the stars, like a streetlight, but not dazzling". Direct looks with field glasses were always possible at Traunstein, but not during sporadic cases, where a head forester was dazzled according to BERGER (2). Brightness discontinuities (flickering, dimming, lights on and off etc.) were noticed in 11 sporadic and 14 (45 % of the) flap cases.

Object colors

Significant differences between the data sets appear in the color evaluation of Table I. Whereas 26 % of the sporadic cases contain descriptions of white lights/objects, none were found at Traunstein.

55 % of the flap cases involved (sometimes vivid) color changes, but only 20 % of the sporadics fall in this category. The most abundant color at Traunstein was a

yellowish orange tint, sometimes seen at color-changing objects, too. Sporadic objects, if not white, were yellowish or orange, seldom red. In 5 flap cases, objects of different colors were in the sky at the same time (the main object was taken for Table I in each case), but this was never seen during sporadics. Another Traunstein characteristic was the pulsation from yellowish orange to deep ("blood") red and back again together with size and brightness variations. The same once happened near Vienna.

Source of light

The physical phenomenon attracting the witness(es)' attention was light reaching them from the object(s). 58 % of the sporadics and 65 % of the flap cases included informations on the light source. The major portion of reports dealt with self-luminous objects of visible angular extension. Interesting is the absence of objects with point light sources alone in the Traunstein data set against 19 % of the sporadics - Table J.

Light effects

The projection of ordinary light beams or "solid light" or the ejection of sparks/flames was mentioned in 6 (11%) sporadic and 8 (26%) Traunstein testimonies. A total of 3 (4%) sporadic and 13 (23%) flap objects produced "solid light" effects. A comparison of two Traunstein cases with "solid light" in the international literature is aptly done by HEERING (19).

There are several other light effects beyond our present

classifying ability such as spontaneously appearing "rings of tiny dots" around a light source or "silent sparkling" as kind of opalescence created by the rapid movement of colored light dots or rays. For details see BERGER (3,4, 12).

Object motion

For the motion analysis of Table K, the observed maximum angular speed of the object(s) per given case was taken. 41 % of the sporadic cases involved objects with slow motion, generally slower than light aircraft or airliners in the distance; in 31 % of the sporadics no motion was seen. Thus, 72 % or three fourth of all cases with sporadic distribution on the map dealt with motionless or slow-moving objects. The same is true for the Traunstein data set - 45 % motionless, 29 % slow-moving, which gives 74 % non-rapid objects. The few rapid objects in both samples are not negligible (17 % and 19 %) and show speeds up to 20° per second. Two reports describe erratic, random motions which fit into the "dogfight" pattern. 16 % of the sporadics and 14 % of the flap cases included motion discontinuities as hovering and take-off, motion and stand-still, abrupt trajectory angles, accelerations or secondary motions (undulating, pendulum etc.) superimposed on the main movement. Rotation of the whole object or of lights/colors around the body's circumference was noticed during 6 sporadic and 8 Traunstein encounters.

Sound

No sound at all was heard during Traunstein episodes

regardless of the objects' apparent distance or motion. Only 5 of 54 sporadic Austrian cases included sound effects, although searching questions were never omitted. The descriptions varied from "a low roaring", "whirring", "whistling", "whooshing" to "high, vibrating". The paucity of auditive data may be correlated with the average greater distances between object and observer (only 5 sporadics rate as CE I).

Electromagnetic and other effects

One sporadic CE I happened near the end phase of a local power failure but with no apparent causal relation to it. No EM anomalies were noticed at Traunstein, where a witness even followed one of the "solid light" phenomena with the TV set playing - BERGER (5). Consequently it is no surprise either that there has been no CE II or III incident throughout the 5 year-period. A lack of phenomena near the soil is typical for Austrian activity.

Austrian patterns

Out of a number of possible patterns the following seem to be confirmed beyond doubt statistically:

Most cases are reported at night.

Many cases lasted between 1 and 30 minutes. Over the whole time scale a tendency of flap sightings to last longer than sporadics exists.

Many sporadic reports are clustered between 6 and 9 P.M. CET; there is also a small morning peak.

Nearly 50 % of the Traunstein reports occurred between 6 and 9 P.M. CET; the same amount lies between 9 and

12 P.M.

Every third sporadic witness had a higher or specialized education.

Single object cases are most frequent at Austria.

Every second object is observed under 10° elevation in the sky. A noticeable percentage of sporadic objects "switched off", i.e. disappearing instantly at the end of the sighting.

Object sizes and shapes are not suggesting larger, mechanical structures in most cases.

Sporadic objects are mostly of a white or yellow/orange color, flap objects were yellow/orange or showed marked color variations. Most objects are self-luminous.

Angular motion, if reported, is mostly slow.

Other than special light effects are rare; at Traunstein a combined form of size, color and brightness variation occurred several times.

DISCUSSION

Comparison with HANSEN

HANSEN (18), a leading member of SUFOI, Denmark, has published a statistical survey on the year 1972 a German translation of which was available to the author.

As Denmark is European territory about 1000 kilometers north of our field investigation area and no reliable data have been published for Germany or Switzerland, the HANSEN analysis was taken for a first comparison.

Coverage of SUFOI seems to be greater in Denmark than of

MUFON in Austria. Whereas SUFOI classifies 86 cases as unidentified for 1972, our 85 cases were collected in a 5 years work, although Austria's population was 50 % and the total area even 100 % greater than the Danish one in 1972. The number of cases is nearly equal which makes a comparison of the phenomenon's characteristics interesting. Danish witnesses were younger on the average - HANSEN's age classes from 50 to 79 years contain 21 %, our own 50 - 75 years class 53 % of the witnesses with known age. One witness reports were most frequent, as in Austria. The same goes for the number of objects. 52 % of the Danish cases described only one object, in Austria 78 %. The percentages of sighting duration class frequencies are compared in Figure 7. Only for 1 - 5 minutes sightings a bigger deviation exists.

Object colors in Denmark - 29 % white, 32 % yellow/orange objects - were similar to the Austrian sporadics. The large Traunstein color change percentage remains a phenomenon unique for Austria. In Denmark only one object had "rainbow colors". 25 % of the Danish objects were round, dot- or starlike. 56 % of the Austrian objects looked like that. For one blinking or pulsating light two continuously lighted objects were seen in Denmark. At Austria, 61 case histories mention continuous light, 24 discontinuous, which gives a proportion of 2,5 : 1.

50 of 86 Danish cases (58%) dealt with motion discontinuities, in Austria 30 of 85 cases (35%).

98 % (84) of Danish and 94 % (80) of Austrian cases passed completely soundless.

Comparison with POHER

POHER's study (21) is based on 825 reports, 250 of them from France, and more detailed than the HANSEN evaluation (19). The Austrian amount of cases equals somewhat more than 10 % of his data mass. We will compare point by point in the order POHER has chosen.

65 % of the POHER study (= PS) witnesses was 21 - 59 years old. At Austria, 33 % were between 25 and 50, 53 % between 50 and 75 at the times of their sightings.

Most PS objects were noticed near the horizon, also 43 % of the Austrian objects (with elevations under 10°).

In most cases (PS and Austrian) no observational aid was at hand.

80 % of all PS cases mention one object, 8 % two.

78 % of all Austrian cases report one, 7 % two.

22,5 % PS objects were round (Austria 33 %),

31 % discs (Austria 7,9 %), 14 % cylindrical (Austria 4,7 %), 11 % eggs (Austria 6,3 % oval, eggs).

32 % PS cases reported red/orange objects (Austria 24,7%),

15 % color changes (Austria 33 %).

98 % PS objects were luminous; the same was true for 97 % of the Austrian objects.

One fourth of the PS cases involved flames/light beams, in Austria only one sixth.

The percentage for PS motion discontinuities was 46 %, at Austria 35 %.

60 % PS cases passed soundlessly, 94 % at Austria.

Spontaneous disappearance of the object happened in 7 % of the PS cases and in 12 % of the Austrian ones.

The day/nighttime PS case percentage was 30 % : 70 %, but 8 % : 92 % at Austria.

The PS mentions a case frequency maximum at 10 P.M. with a sharp rise after 8 P.M., and a morning minimum at 8 A.M.. At Austria, 38 % of all cases occurred between 6 and 9 P.M., 27 % between 9 and 12 P.M., 1 % between 8 and 12 A.M. which is the minimum interval.

Comparison with VALLEE and POHER-VALLEE

In an early study on Type I, II, III and IV observations VALLEE (25) remarks "there is a sudden rise in the frequency of (Type I - E.B.) sightings at sunset, and the maximum is reached almost immediately, while the maximum for Type III phenomena is reached about 3 hours after sunset," and "shows a marked increase between 8 P.M. and 9 P.M. ... the large majority (of Type III - E.B.) are made between 6 P.M. and 12 P.M."

A look at our Figure 4 shows that 38 % of all sightings set on between 6 and 9 P.M. CET, and 27 % between 9 and 12 P.M.. Of the 26 sightings at Traunstein between 6 and 12 P.M. (which is 84 % of all flap cases) one half set on between 6 and 9 P.M., the other half between 9 and 12 P.M. It seems both maxima observed by VALLEE are present in our data which consist of several Type I, one Type II, many Type III and a few Type IV cases.

Results of a joint research project by POHER and VALLEE (22) were published in 1975 and can be compared with the above results with regard to Number of reports as a function of elevation, Number of reports as a function of duration, Sighting duration and Number of witnesses in Type I - cases,

which are some titles of Figures in the POHER-VALLEE paper. An Austrian study on the number of UFO reports as a function of atmospheric transparency is under way and will be presented in the near future.

Under Number of objects as a function of elevation POHER-VALLEE have plotted a regression line for (cumulative) relative frequency of objects in logarithmic scale against $1/\sin h$ (h = elevation). In Figure 8, this POHER-VALLEE line is compared with our own field measurements done with a quadrant. Sporadics and flap cases are shown separately. The deviation of the Austrian data from POHER-VALLEE is so considerable and the corroboration of our own data such that we may infer the following:

The POHER-VALLEE line underestimates the proportions of objects with elevations under 25° by over 100 %. According to the two authors, the contribution of objects under 15° elevation to the total report number should be less than 15 %. For Austria, the true contribution is somewhat less than 60 %. POHER-VALLEE describe their material for the regression line as " 308 cases in the French files ... in which angular elevation (h) is estimated by the observer and in which the object is of small angular diameter."

As the earlier results of POHER (21) tend to match our results, we may venture to explain the observed discrepancy by the general overestimation of elevation angles by witnesses without the aid of a quadrant or theodolite.

After NEUBERGER (16) we may expect all elevation angles in the sky to be overestimated by eye witnesses. In such way, 15° will be estimated as 32° , 30° as 52° , 45° as 65° , 60° as 75° and 75° as 84° , to list a few. The subjective error

is zero for zenith and horizon and reaches its maximum between 0 and 15° , where the deviation of POHER-VALLEE's line from our data is greatest, too.

Consequently, we have reduced the values of h obtained from the POHER-VALLEE line by the NEUBERGER corrections. The result is plotted as a dashed line in Figure 8 and matches our field measurement results almost like a regression line.

The theoretical concept for the POHER-VALLEE line is not given in the original paper, but it seems the phenomena were assumed to be equidistributed in the air their frequency only being reduced by atmospheric extinction. In reality, the proportion of phenomena near the earth is far greater, and only the erroneous estimations of elevation angles by unaided witnesses make it seem small.

Thus, the use of a quadrant is suggested for every investigation to reduce subjective errors to acceptable limits and allow for theoretical studies to be done on the data.

As for the Number of reports as a function of duration, the POHER-VALLEE graph depicts a case frequency maximum at about 6 minutes duration. Sporadics and flap data overlap closely in the 1 - 30 minutes classes (Figure 5). The maximum of the sporadics in the 1 - 10 seconds interval does not match POHER-VALLEE, but the Traunstein maximum in the $> 1 - 5$ minutes class does.

If our data are arranged in a similar way as in the POHER-VALLEE sector diagram on Sighting duration, the maximum sector (33,7 % of all cases) is $> 1 - 15$ minutes duration. Evaluating the Number of witnesses in 878 cases of Type I

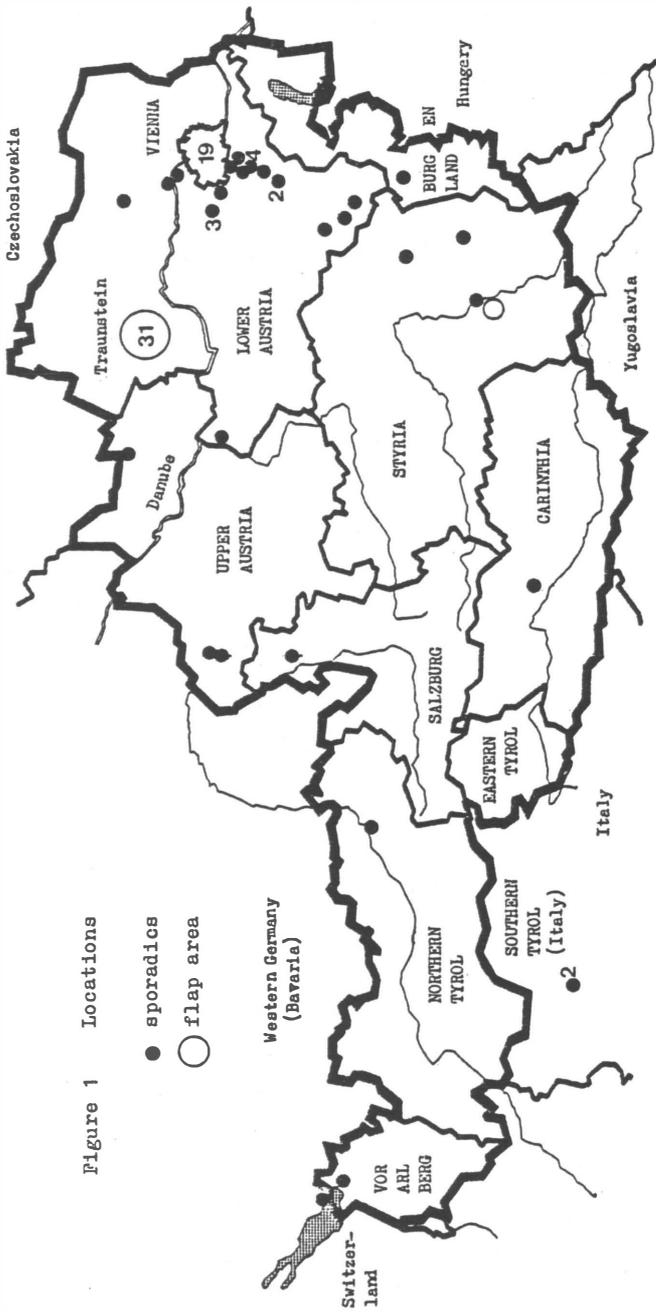


Figure 1 Locations

from before 1947 until 1968, POHER-VALLEE found 56 % of the cases were single witness events. In our data sets of mostly Type III-events, 45 % involved only one witness. The last paragraph of the POHER-VALLEE study (22) deals with the possible detection of UFO events by geomagnetic disturbances recorded by the observatory Chambon-le-Forêt. POHER ventures to establish a correlation between the "peak-to-peak variations of the vertical component" of the geomagnetic field and the "distance from reported UFO to detecting station" although no event was observed closer than 30 kilometers to the automatic observatory. In a similar study done for 15 cases near the Vienna geomagnetic observatory, 4 of which involved objects nearer than 10 kilometers (one even 3 kilometers "beneath" the station) ground distance, all three geomagnetic components were checked for three hour periods around the sighting times. Nothing in the direction of a recorded field disturbance was found. The Vienna instrument is equal to Chambon-la-Forêt as far as sensitivity for the horizontal/vertical component is concerned and registration of lightning flashes is possible when thunderstorms occur not more than 10 kilometers from the instruments. The station is also a good sensor for traffic activities in the streetcar system of the Vienna Transportation Board. When the magnetic field of lightning and even streetcars will trigger the instrument and cause noticeable oscillations, then why not at least one of our objects? It is our present opinion that the problem of UFO detection by recording instruments is still open for the technician and evaluations of strongly attenuated geomagnetic station records will not help in

that respect.

The author hopes it has been possible to show with his contribution the wealth of information extractable from painstaking field investigation records and is open for discussions with colleagues who have similar research aims.

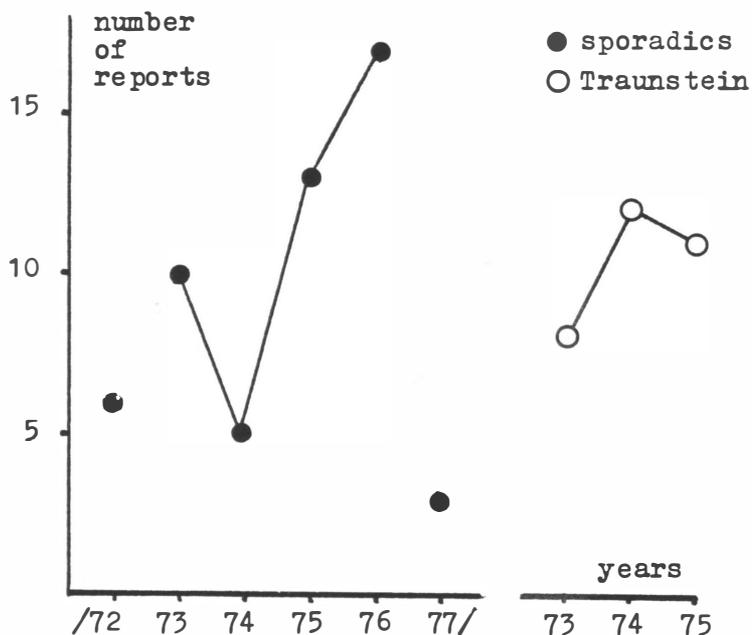


Figure 2 Reports per year

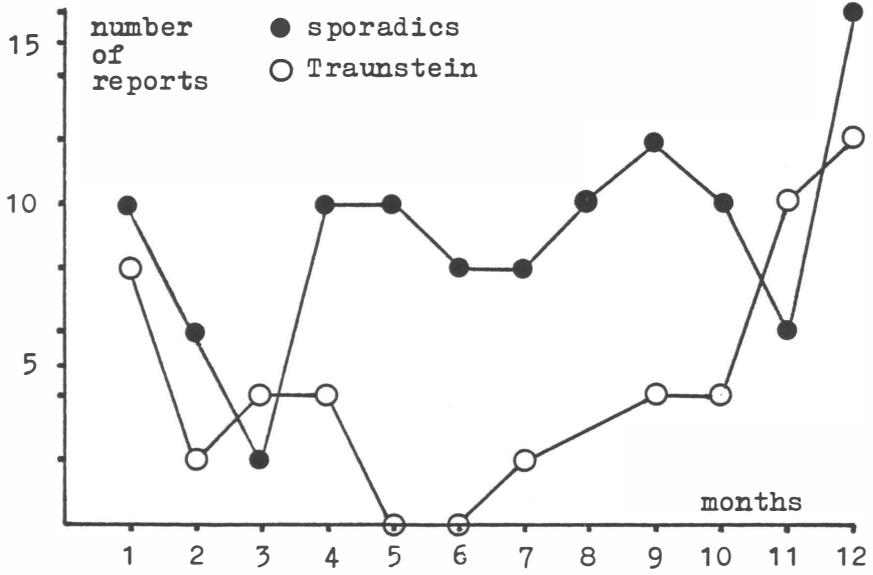


Figure 3 Reports per month, 1972-1977

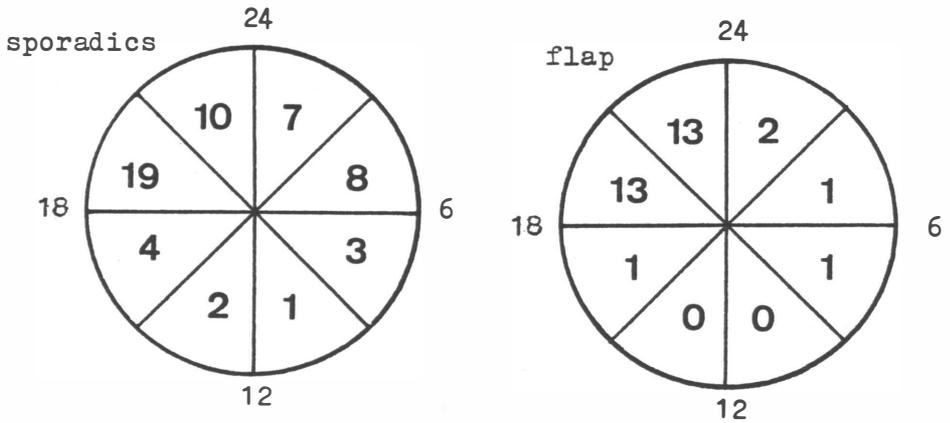


Figure 4 Time of day

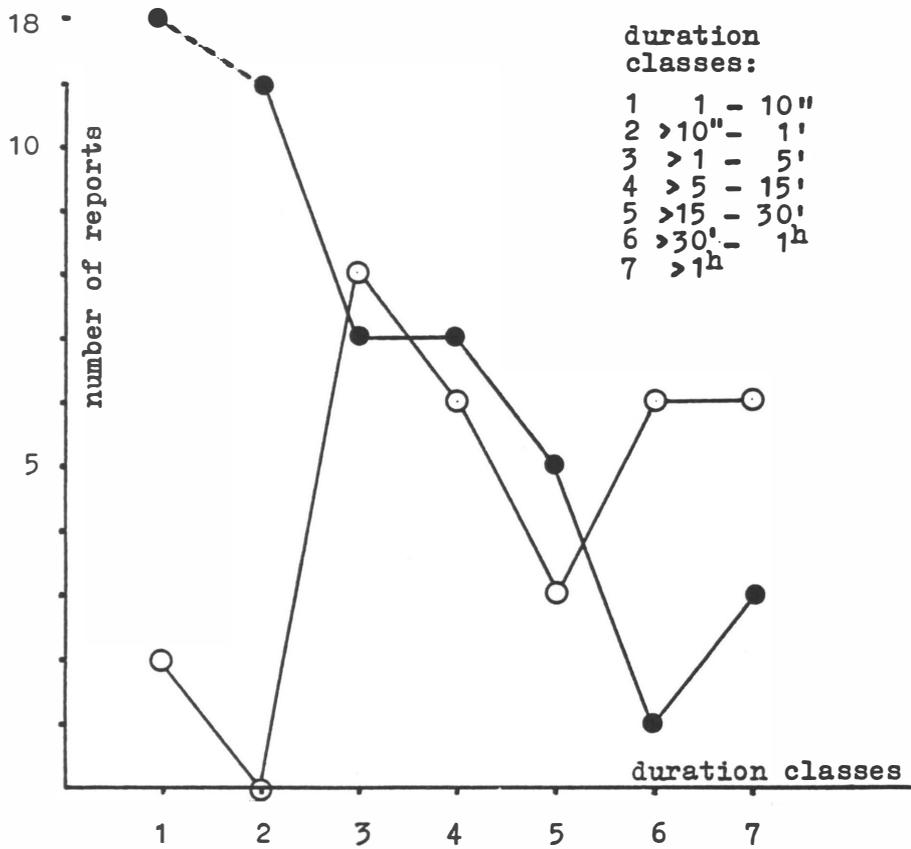


Figure 5

Duration

● sporadics
○ Traunstein

	sporadic	flap cases
Object moves behind terrestrial obstacle	21	6
disappears instantaneously	9	1
moves away into distance	5	2
moves behind cloud	4	1
dims gradually	1	0
Witness discontinues observation	8	20
Unknown, not applicable	6	1
	<hr/>	<hr/>
Totals	54	31

Table A End of observations

Witnesses per case	sporadic	flap cases
1	27	11
2	22	10
3	4	3
4	0	5
5	0	1
6	1	0
.		
10	0	1
	<hr/>	<hr/>
Totals	54	31

Table B Number of witnesses

	sex	no.of witnesses	
Sporadic cases	male	45	} 1 : 1,2
	female	37	
Traunstein cases	male	60	} 4 : 1
	female	15	

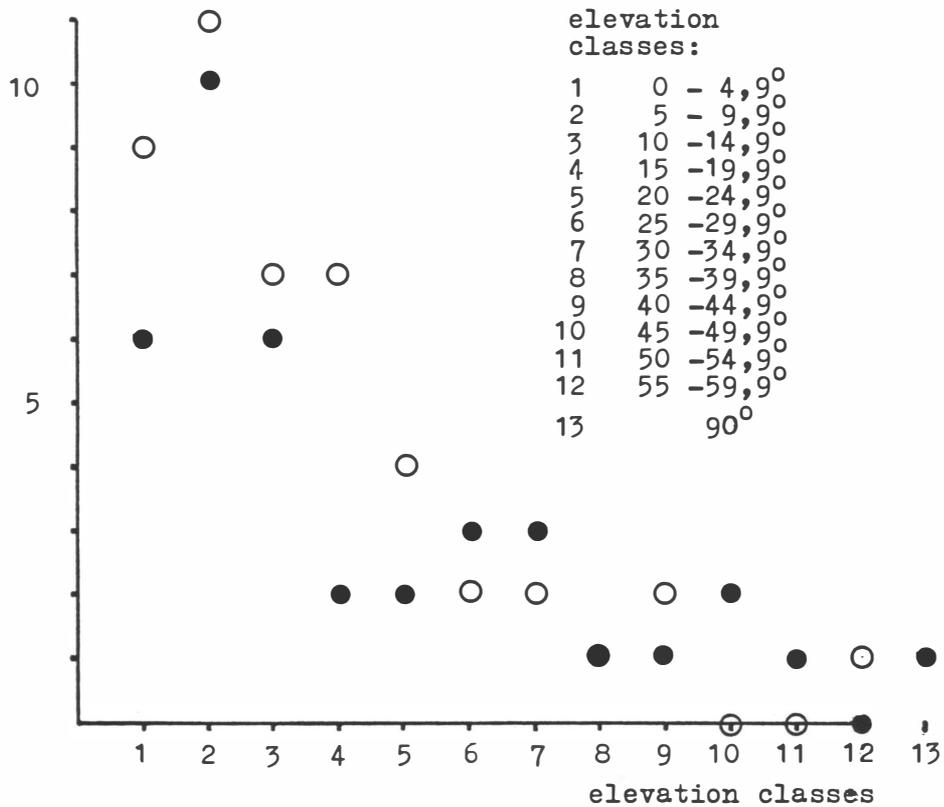
Table C Sex of witnesses

Age	no.of witnesses	Education	no.of witnesses
15-25	9	higher, specialized	20
25-50	21	general	23
50-75	34	low, youngsters	21
unknown	25	unknown	25

Table D Age and Education of witnesses

Objects per case	sporadic	flap cases
1	38	19
2	1	4
3	1	5
4	0	2
5	1	0
6	0	1
•		
8	1	0
uncertain	12	0
Totals	<u>54</u>	<u>31</u>

Table E Number of objects



Size class	sporadic	flap objects
dot - < 5'	19	26
5' - < 30'	15	17
30' - < 1°	6	6
1° - < 2°	7	3
> 2°	4	1
unknown	20	3
	<hr/>	<hr/>
Totals	71	56

Table F Object sizes

Shape	sporadic	flap objects
globe	22	20
point of light	12	17
indefinite, not reported	11	2
disc	4	4
domed	0	2
oval, egg	4	4
cigar, wedge	4	3
complex shape, variable	11	4
angular shape	3	0
	<hr/>	<hr/>
Totals	71	56

Table G Object shapes

Brightness class	sporadic cases
faint - Venus	3
Venus - full moon	17
full moon - dazzling	9
dazzling, extreme	18
unknown, dark	<u>7</u>
Total	54

Table H Object brightness

Color	sporadic	flap cases
white	14	0
yellow(ish)	8	4
orange	8	6
red	4	3
greenish	1	0
silvery	1	0
grey	1	0
variable	11	17
other, unknown	<u>6</u>	<u>1</u>
Totals	54	31

Table I Object colors

Angular motion	sporadic	flap cases
none	17	14
slow	22	9
rapid	9	6
random, dogfight	2	2
unknown	<u>4</u>	<u>0</u>
Totals	54	31

Table K Object motion

Light source(s)	sporadic	flap cases
whole object luminous	25	20
point light source(s)	8	0
only light dot seen	4	7
extended light source(s)	2	3
point light source(s)+ general illumination	2	1
no light or reflected sun/sky light	2	0
unknown, not reported	<u>11</u>	<u>0</u>
Totals	54	31

Table J Source of light

duration classes:
 1 1 - 9"
 2 10 - 59"
 3 1 - 5'
 4 5 - 10'
 5 10 - 30'
 6 30 - 60'
 7 > 1h

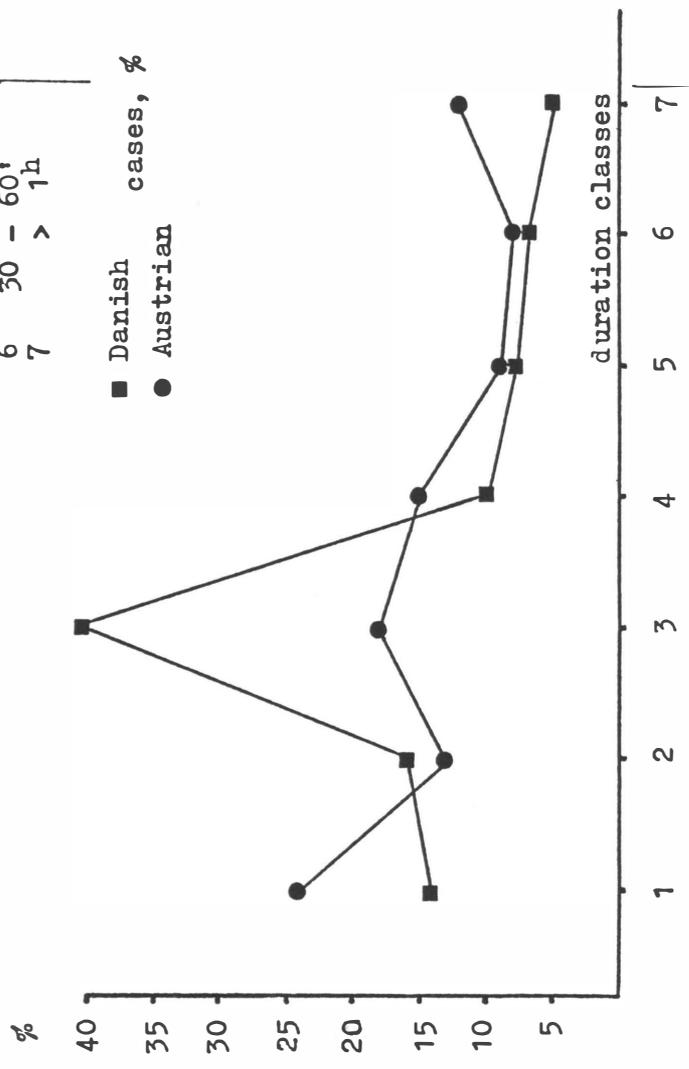


Figure 7 Danish and Austrian case durations

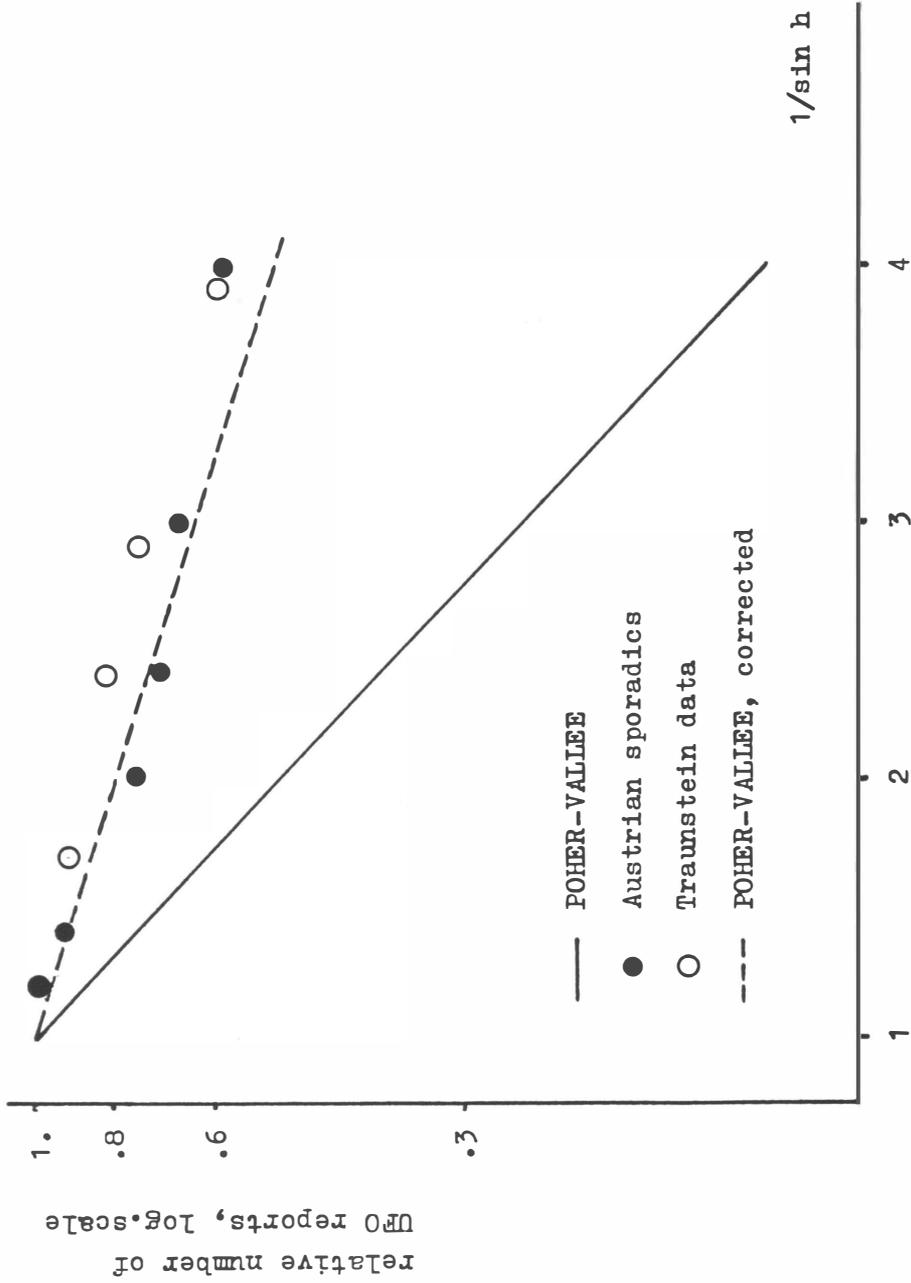


Figure 8 Number of reports as a function of elevation

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Abbreviations: CUFOR - Canadian UFO Report
MUFOJ - MUFON UFO Journal
AUAB - Austrian Abstracts

Latest publication:

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The “CE III”

IS THE LOCUS COERULEUS, AN IMPORTANT ANATOMICAL CENTER OF THE BRAIN, INVOLVED IN THE MOST BIZARRE ASPECTS OF UFO REPORTS?

THE INDUCED DREAM HYPOTHESIS.

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Received August 12, 1977

Résumé

Cette étude se rapporte à une hypothèse qui fut, en premier lieu, proposée par Guérin(1) et qui pourrait permettre de mieux appréhender le contenu étrange des rapports d'UFOs concernant les Rencontres Rapprochées du Troisième Type, tel que l'a défini Hynek(2).

Le Locus Coeruleus est une petite mais fort importante région des cerveaux mammaliens: il serait la région inductrice déclenchant ce que l'on appelle le "rêve"(3).

L'auteur suggère que les UFOs observés à faible distance, et où de soi-disants occupants auraient été vu, interfèrent avec le fonctionnement normal du cerveau à l'état d'éveil en agissant sur le Locus Coeruleus.

L'aspect le plus important de cette étude est que les rapports d'UFOs de ce type ne nous donnent aucune indication sur le stimulus réel qui a engendré le rapport; ils ne nous donnent que la description imaginaire que se fait le sujet à propos de la nature d'un UFO.

Considérer ces rapports énigmatiques de cette façon pourrait permettre de mieux comprendre les événements bizarres associés à ces observations. Les Rencontres Rapprochées du Troisième Type sont ainsi des expériences très similaires à celles que pourrait éprouver un sujet sous état LSD où il perçoit alors un mélange du monde réel et de celui qui habite son inconscient.

Mots-clés:Etat d'éveil; sommeil lent; sommeil paradoxal; Locus Coeruleus; Raphé; Monde Intérieur; Monde extérieur; Hypothèse du Rêve Induit; cerveau; neurone; neurotransmetteur; norépinéphrine; sérotonine; acétylcholine; système limbique; Formation Réticulaire; hallucination induite; projection eidétique; représentation inconsciente; variation culturelle de la perception des Rencontres Rapprochées du Troisième Type; Moi Informationnel; bits; Auto-programmateur; Diffuseur Informationnel; modélisation.

Abstract

This paper deals with an hypothesis, first proposed by Guérin(1), which might help in appraising the weird content of UFO reports defined as "Close Encounters of the Third Kind" by Hynek(2).

The Locus Coeruleus is a small but very important part of mammalian brains: it would be the inducing mechanism of what we call "dreaming" (3). The author suggests that UFOs seen at a close range, and in which the so-called occupants are "sighted", interfere with the normal functioning of the brain in the waking state by acting on the Locus Coeruleus. The most important conclusion of this work is that UFO reports of that type do not give us any indication on the true stimulus which elicited the report; they give us only what the subject fancies about the nature of a UFO.

If we consider these puzzling reports from this vantage point, a better understanding of bizarre events associated to those occurrences might

result. Close Encounters of the Third Kind are LSD like experiences in which a subject perceives a mixture of the real world and of her/his inner unconscious one.

Key-words:Waking-state;slow waves sleep;paradoxical sleep;Loqus Coeruleus;Raphe;Inner World;Outer World;Induced Dream Hypothesis;brain;neuron;neurotransmitter;norepinephrin;serotonin;acetylcholine;limbic system;Reticular Formation;induced hallucination;eidetic projection;unconscious representation;cultural variation of the perception of Close Encounters of the Third Kind;Informational Self;bits;Auto-programmer;Informational Diffuser;modelization.

Introduction

Le chercheur scientifique non spécialisé dans les sciences biologiques a assez souvent tendance à oublier le support objectif de son activité raisonnée, en l'occurrence son cerveau. Pourtant celui-ci est à la base de tous ses jugements, de toutes ses analyses et une meilleure connaissance de son fonctionnement ne serait-elle pas indispensable à tout savant, à tout homme cherchant à caractériser ne serait-ce qu'une faible partie du Réel?

Nous commençons à peine à avoir quelques lueurs de compréhension sur le fonctionnement extraordinairement complexe de cette structure et, si faibles soient-elles, elles peuvent nous aider à mieux appréhender le phénomène curieux qui nous intéresse. Il m'a donc semblé intéressant d'évaluer les rapports d'UFOs par rapport à certains faits précis que nous connaissons actuellement(4). Cette recherche m'a suggéré une hypothèse intéressante à propos de l'étrangeté des Rencontres Rapprochées du Troisième Type, sans préjuger toutefois du stimulus réel déclencheur d'un tel rapport.

Matériel et Méthodes: Les différents états du cerveau

Notre vie est une alternance perpétuelle entre deux états différents de fonctionnement de notre cerveau: l'état de veille et l'état de sommeil.

Du premier nous en connaissons quelques petites choses car nous en sommes plus ou moins conscients tandis que nous sommes si peu conscients du second que nous avons tendance à le reléguer aux oubliettes.

Durant sa vie un homme passe, en moyenne, près de cinq années dans l'univers imaginaire du rêve(5) et, que lui reste t'il comme souvenirs de cette période si riche d'évènements intérieurs sinon rien!

En outre de ces cinq années, il a passé quinze ans de sommeil que l'on pense sans rêve.

Le neurobiologiste caractérise objectivement les états du cerveau au moyen de l'enregistrement de plusieurs paramètres:

- a) Electroencéphalogramme(EEG) du cortex cérébral
- b) EEG de trois régions dénommées: le pont, le noyau genouillé latéral et le cortex occipital(en abrégé: PGO)

c) Mouvement des yeux (ou phase REM, de l'anglais Rapid Eyes Movements)

d) Tonus musculaire au niveau de la nuque

En effet, l'on observe des variations caractéristiques de l'activité électrique des différents ensembles de neurones selon l'état de veille ou de sommeil. Tous ces phénomènes (6,7,8,9) ont été particulièrement étudiés aux Etats Unis (Dement, 1958, 1969) et en France (Jouvet, 1974, 1975). Nous prions donc le lecteur de s'y référer.

C'est grâce à ces études que l'on découvrit, notamment, que le sommeil comportait deux phases bien distinctes, l'une qui fut appelée "sommeil à ondes lentes" et l'autre "sommeil paradoxal". La première doit son nom au fait qu'elle se caractérise, à l'encéphalogramme, par l'apparition d'ondes lentes de 1 à 3 cycles par seconde, nommées ondes delta, et de fuseaux. La seconde fut ainsi nommée car, assez paradoxalement, justement, l'on remarqua durant le sommeil une période d'intense activité électrique corticale, très similaire à celle de l'état d'éveil, associée à un endormissement profond caractérisé par une relaxation musculaire totale et l'élévation du seuil des stimulations nécessaires à réveiller le dormeur.

Nous ne reviendrons pas sur tous ces faits désormais classiques.

Sachons seulement que nous connaissons actuellement trois états habituels différents du fonctionnement du cerveau (nous pourrions encore en ajouter un quatrième, moins courant, à savoir celui de "schizophrénie" hallucinatoire):

a) L'éveil

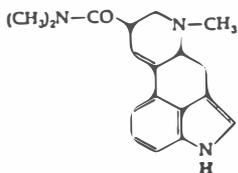
b) Le sommeil à ondes lentes (où SWS, de l'anglais Slow Waves Sleep)

c) Le sommeil paradoxal (où encore sommeil REM)

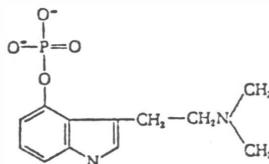
D'après les données actuelles l'on associe les rêves à la phase REM du sommeil bien que l'on ne puisse l'affirmer avec certitude. Cependant cette affirmation est fort probable étant donné le fait théorique qu'à ces périodes oniriques le cerveau manipule, de toute évidence, une information extrêmement complexe et que cette activité doit forcément se manifester électriquement par une hausse générale des phénomènes enregistrés à l'encéphalogramme. Ce qu'il est important de retenir est le fait que différentes structures du cerveau sont impliquées dans ces phénomènes et que leur fonctionnement varie de manière phasique entre la veille et le sommeil.

Ainsi, durant le jour, le cerveau se met à l'écoute du monde environnant, le Monde Extérieur, et certaines structures cérébrales s'activent tandis que d'autres se mettent au repos. Quand arrive le soir et la phase REM du sommeil, il se met à l'écoute du monde mémorisé, celui de l'information endogène: le Monde Intérieur.

La différence fondamentale entre ces deux modes de perception est donc qu'à l'état d'éveil l'information perçue par les systèmes intégrateurs des organes des sens est de source exogène tandis que dans le second elle est endogène. Rappelons que l'on peut noter certains états intermédiaires: ce seront les hallucinations, soit en réponse à une désadaptation au Monde Extérieur, suite à une trop grande stimulation d'un "centre de la souffrance", le Système Périventriculaire (Laborit 1973), soit suite à l'ingestion d'une substance chimique telle que la diéthylamide de l'acide lysergique (LSD) ou la psilocybine (figure I).



Diéthylamide de l'acide lysergique



Psilocybine

FIGURE I

Une autre différence importante concerne le souvenir: on se rappelle et l'on a conscience de l'éveil, ce qui n'est pas le cas du rêve sauf dans certaines situations particulières: ainsi, consécutivement à un endormissement difficile il arrive de rêver en demeurant parfaitement conscient

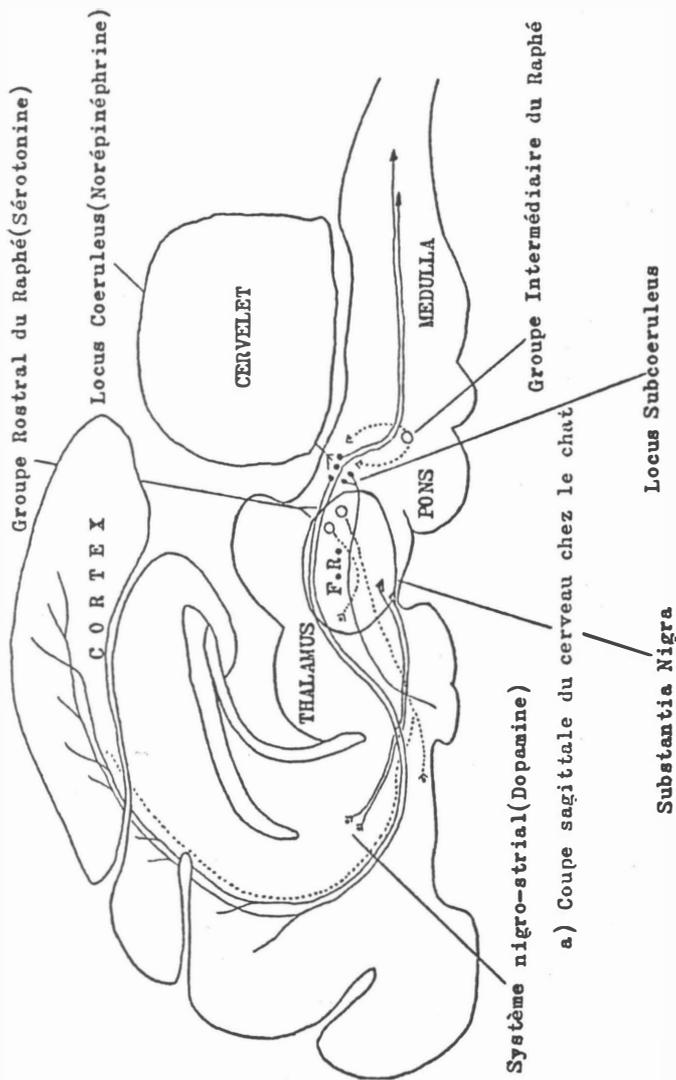
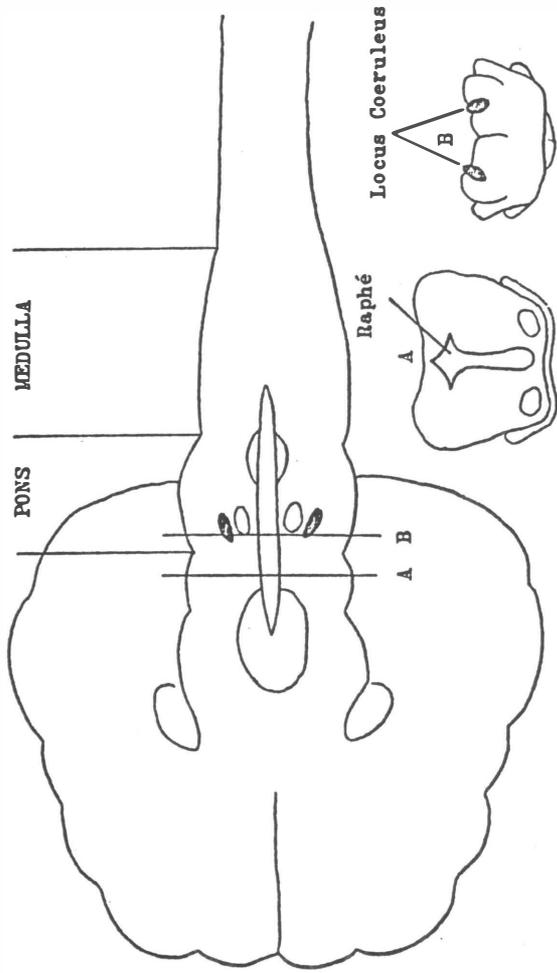


FIGURE II (d'après Jouvet 1967)
 + Maeda et Pin 1971

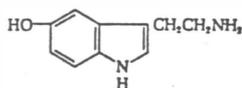


b) Coupe horizontale au niveau du Raphé et Locus Coeruleus

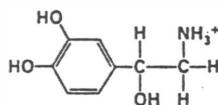
FIGURE II (d'après Jouvet 1967)
+ Maeda et Pin 1971

et en gardant un souvenir aussi intense de chaque instant onirique vécu comparable à celui de l'état d'éveil(Rifat,observation personnelle non publiée,1976).Les mécanismes physiologiques responsables de ces différents états sont encore assez mal connus mais l'on sait(I0,II,I2)que la Formation Réticulaire(FR)du tronc cérébral,ensemble de neurones aux communications diffuses,est indispensable au maintien de l'éveil et de la conscience,cependant que Jouvet a montré(I3)l'importance fondamentale d'une toute petite région du cerveau mammalien,située dans le pont,dans le déclenchement des états oniriques(figure II).

Cette région mesure à peine 4mm de long sur 2mm de large et 2mm d'épaisseur chez le chat;pourtant elle semble commander à une activité aussi importante que le rêve.Le Locus Coeruleus est représenté à deux exemplaires et il jouerait le rôle d'un interrupteur branchant le cerveau sur le Monde Intérieur.Tout cela est encore loin d'être parfaitement compris mais,du point de vue théorique,il paraît évident qu'il se trouve sur une voie physiologique servant à mettre en relation le système limbique,qui serait le siège de la mémoire(I4),avec les systèmes intégrateurs corticaux.Les deux noyaux du Locus Coeruleus,comme on le voit sur la figure II,bordent certains noyaux du Raphé,éléments essentiels de l'apparition du sommeil lent selon Jouvet.Ce qu'il est important de noter est le fait que les neurones des noyaux du Raphé sont à médiation sérotoninergique(ce qui veut dire qu'elles utilisent,dans leurs communications,un neurotransmetteur qui est la sérotonine - encore appelée 5 hydroxytryptamine -)tandis que celles du Locus Coeruleus sont noradrénergique et utilisent la norépinéphrine,encore appelée noradrénaline(figure III).



Sérotonine



Norépinéphrine

FIGURE III

Ces systèmes de noyaux seraient reliés par des relations de type antagoniste: une augmentation de norépinéphrine entraînerait une diminution de sérotonine ainsi que l'éveil, cependant que l'inverse entraînerait l'endormissement, à savoir le sommeil lent. Mais, comme le soulignent bien Jacobs, Mosko et Trulson (15), il serait erroné de tirer ce genre de conclusion simpliste tant que l'on ne connaît pas la participation de chacun des noyaux du Raphé par rapport à un phénomène générale observable que nous voudrions étudier, ce qui n'est guère le cas. Méfions nous ainsi des simplifications hâtives qui sont trop souvent de règle en ce domaine. Nous y reviendrons plus loin lorsque nous verrons les effets des substances hallucinogènes sur ces mêmes neurotransmetteurs et, en particulier, sur le système du Raphé.

Mais d'abord que sont les neurotransmetteurs?

Les neurotransmetteurs sont les molécules informatives avec lesquelles communiquent, généralement, les neurones. Leur libération dans la fente synaptique entraîne la dépolarisation membranaire du neurone post-synaptique et, éventuellement, la propagation d'un potentiel d'action le long de l'axone de celui-ci, dans le cas d'un neurotransmetteur excitant. Cependant, dans le cas d'une substance neurotransmettrice inhibitrice, leur libération entraîne l'hyperpolarisation membranaire du neurone suivant.

Le cerveau semble comporter des ensembles fonctionnels utilisant chacun préférentiellement un neurotransmetteur (ou neuromédiateur) bien défini.

Il existe ainsi des neurones catécholaminergiques (dont les neuromédiateurs sont des catécholamines telles que l'épinéphrine ou la norépinéphrine), d'autres cholinergiques (médiation assurée par l'acétylcholine) et peut-être même certains peptidergiques (dont les neuromédiateurs seraient les enképhalines, peptides morphinomimétiques).

La liste est loin d'être exhaustive; on pourrait ainsi ajouter les neurones utilisant le GABA (acide gamma-aminobutyrique), peut-être le 4-OHB (acide gamma-hydroxybutyrique, l'octopamine, la dopamine, etc.

Notons cependant que la fonction neurotransmettrice dans le système nerveux central des mammifères de toutes ces substances n'est pas toujours encore formellement démontrée bien que très souvent probable.

En agissant sur la synthèse, le turn-over, la facilitation ou l'antagonisation

de l'action de ces substances, il est possible de moduler et d'influencer le fonctionnement du cerveau, de façon parfois assez dramatique.

Notons enfin que, du point de vue des sciences informatiques, le rêve est une extraordinaire synthèse d'information quasi parfaite, une reproduction imaginaire d'un réel mémorisé modulé par les désirs. C'est sans doute durant cette période que notre cerveau montre ses véritables possibilités en maniant à une vitesse prodigieuse une quantité phénoménale de bits informationnels, ce qu'il est loin d'accomplir à l'état de veille. La texture et la génération du rêve, obéissant à une logique non-linéaire non-séquentielle mais intégrée par opposition à la logique analytique linéaire et symbolique qu'utilise l'être humain conscient, constitue bien l'activité la plus complexe du cerveau que même les ordinateurs contemporains ne sauraient égaler. Mais, à quoi donc peuvent nous servir tous ces développements quant à l'objet d'étude qui nous concerne?

Nous allons le voir.

Résultats et Discussion:

De l'étrangeté des Rencontres Rapprochées du Troisième Type

Le scientifique intéressé par l'étude sérieuse des rapports d'objets volants non identifiés reste confondu non seulement devant l'incroyable diversité du phénomène mais encore devant la bizarrerie et le caractère apparemment fantasmagorique et délirant des Rencontres Rapprochées du Troisième Type.

Si, par exemple, nous choisissons de tester l'hypothèse extraterrestre, comment concilier la venue d'intelligences extérieures avec le comportement aberrant que présentent les "humanoides" si souvent décrits par les témoins?

Le dit comportement est bien loin de satisfaire les critères avec lesquels nous estimons pouvoir raisonnablement juger de l'intelligence d'un système biologique!

Nos critères seraient-ils trop anthropomorphiques?

Je ne le crois pas; c'est pourquoi je pense que ce que disent les témoins, si cette hypothèse extraterrestre se vérifie un jour, n'a rien à voir avec le phénomène qu'ils décrivent, ainsi que l'a déjà dit Guérin(16).

En Science il est toujours plus conséquent de se baser sur un ensemble de phénomènes déjà bien établis que de rechercher du mystère dans des domaines encore peu compris. Il n'est cependant pas interdit de supposer que l'UFO puisse agir à distance directement sur les noyaux du Locus Coeruleus en induisant celui-ci à brancher le cerveau du sujet non plus sur le Monde Extérieur mais sur son Monde Intérieur.

Ce que percevrait le témoin ne serait donc que la représentation inconsciente qu'il se fait des objets volants non identifiés, représentation bien entendue très différente d'une personne à l'autre.

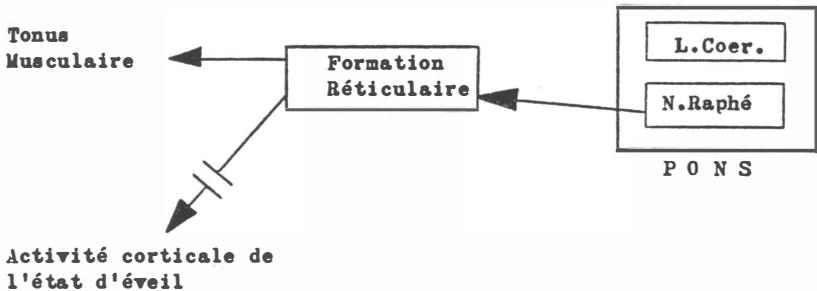
Vallée(17) a noté que le phénomène en question paraît varier en fonction des cultures et des époques. Par exemple, à l'ère pré-technologique l'on voyait des lutins et des fées, supposés hanter le tréfond de la sylve forestière, ou encore des personnages associés aux grands mythes religieux, ensuite de brillants inventeurs ayant réalisé le plus lourd-que-l'air en 1897 et, maintenant, des créatures les unes plus invraisemblables que les autres mais présentant, cependant, encore certaines ressemblances en fonction des pays: les "monstres" Américains, les "gentils martiens" Français, etc.

Tout cela me paraît parfaitement coïncider avec l'hypothèse sus-mentionnée: un sujet décrit en fait ses croyances, modelées par la culture ambiante, bien que dans notre cas le stimulus déclencheur semble être toujours le même, à savoir un objet apparemment structuré et guidé intelligemment.

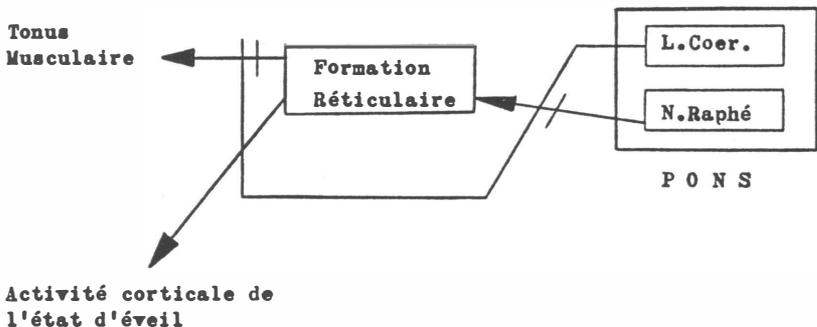
Ainsi considérées les Rencontres Rapprochées du Troisième Type s'intègrent plus aisément avec le reste des rapports d'UFOs et avec nos connaissances scientifiques actuelles.

McC Campbell(18) a proposé l'idée que les UFOs seraient d'importants émetteurs de microondes; de plus l'on sait que celles-ci ont des actions biologiques et qu'elles peuvent, notamment, induire des différences de potentiel membranaire(19) suffisamment importantes pour influencer le fonctionnement d'une cellule vivante. Ne serait-il donc point possible d'agir directement sur les circuits catécholaminergiques du Locus Coeruleus par cette voie ou encore ceux sérotoninergiques du système du Raphé? Je n'en sais rien, mais voici déjà une hypothèse testable: est-il possible d'influencer la synthèse et la libération de norépinéphrine ou de sérotonine dans les noyaux du Raphé et du Locus Coeruleus de l'extérieur, par ondes électromagnétiques.

Une activité catécholaminergique plus grande du Locus Coeruleus ainsi induite produirait un état onirique, si l'on s'en réfère au modèle proposé par Jouvet dans lequel l'apparition du rêve serait due à une inhibition de l'activité sérotoninergique du système du Raphé, agissant normalement sur l'activation de la Formation Réticulaire, produite par la norépinéphrine émise par le Locus Coeruleus (figure IV).



A) Le sommeil à ondes lentes apparaît lorsque la sérotonine produite par les noyaux du Raphé modifie certains effets de la Formation Réticulaire, nécessaires à l'éveil:



B) Le sommeil paradoxal s'en suit après que le Locus Coeruleus produise suffisamment de norépinéphrine afin que de contre-carrer les effets de la sérotonine produite par le Raphé:

FIGURE IV (modifié d'après Jouvet 1967)

Légende: (sous A)

(—→ agit sur. —|→ inhibe.)

Légende sous B:

(idem)

Cependant si l'on considère les données récentes acquises par Jacobs, Mosko et Trulson(20) sur la destruction spécifique de certains noyaux du Raphé, il semble fort probable que ce modèle devra être révisé et affiné.

Par ailleurs un autre fait semble corroborer ces conclusions: ainsi on ne peut qu'être frappé par la grande ressemblance existant entre les phénomènes de projection eidétique, à savoir les phénomènes dits hallucinatoires, et les phénomènes oniriques, tous deux procédant de l'apparition d'une information endogène complexe dans les systèmes intégrateurs corticaux. L'on sait encore que le LSD, par exemple, produit une augmentation du taux de sérotonine cérébral concurremment à une diminution de norépinéphrine(21,22) et qu'il a une puissante action inhibitrice sur les neurones du Raphé(23). De toute évidence les substances hallucinogènes agissent par un mécanisme très proche de l'induction des états oniriques à la différence qu'elles ne semblent pas diminuer l'activité de la Formation Réticulaire puisque les sujets qui y sont soumis restent parfaitement éveillés et conscients. Selon Jacobs, Mosko et Trulson(24) les substances hallucinogènes de type indolique, tels que le LSD, la diméthyl-tryptamine ou la psilocybine, agiraient en déprimant l'activité sérotoninergique de neurones du Raphé ce qui aurait pour conséquence de désinhiber les neurones post-synaptiques normalement soumises à l'inhibition exercée par la sérotonine, neurotransmetteur inhibiteur. Ce processus libérerait ainsi un système qui, à l'état de veille, bloque la diffusion d'information stockée du système limbique aux systèmes intégrateurs corticaux.

Si l'on suit ce raisonnement l'on voit que, pour être strict, les Rencontres Rapprochées du Troisième Type s'apparenteraient plutôt à des hallucinations induites que des rêves induits puisque les sujets qui y auraient été soumis gardent, de toute apparence, un parfait souvenir de l'expérience en question. En tout état de cause, et indépendamment des deux alternatives possibles, nous voyons, grâce à ces considérations, qu'il n'est plus besoin de recourir à des hypothèses où l'on sent le soufre et le mystère fumeux planer...

Malheureusement, celle-ci, si élégante soit-elle, comme beaucoup d'autres aspects du phénomène, reste difficile à tester directement et n'explique pas tout, comme par exemple les rapports absolument identiques de plusieurs témoins simultanés comme dans le célèbre cas de Kelly-Hopkinsville(25) à

moins que l'on considère que l'UFO en question soit capable de projeter un "programme",une sorte de pièce de théâtre où tous les acteurs-sujets percevraient et se souviendraient d'une histoire rêvée identique,ce qui me paraît très difficile à concevoir pour l'instant.

Et,dans ce cas,pourquoi?

Avant de conclure,j'aimerais préciser un peu plus ce que j'entends par le terme de "Monde Intérieur".

D'un point de vue purement théorique et heuristique l'on peut diviser, très schématiquement,la mémoire humaine en deux parties assez distinctes. La première,qui est sans nul doute la plus importante du point de vue de la quantité de bits informationnels stockés,est ce que Freud a appelé l'Inconscient et que je baptiserai plutôt,selon le contexte,le "Diffuseur ou Projecteur Informationnel" ou encore "l'Auto-programmateur ou Modélisateur".

L'autre partie est ce que j'appelle le "Moi Informationnel".

Pourquoi ces termes nouveaux?

Ils ont,à mon avis,le mérite de décrire plus objectivement et avec moins de métaphores la mémoire humaine en termes d'informatique,ce que Freud n'a pu évidemment faire à son époque(figure V)!

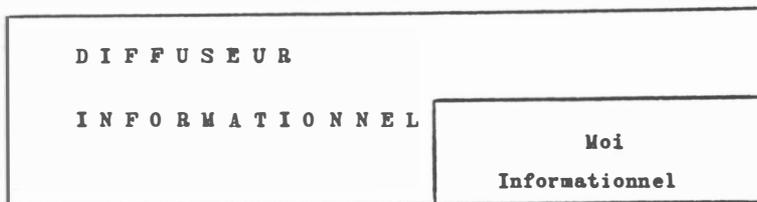


FIGURE V

Le Diffuseur Informationnel est cette partie de la mémoire qui enregistre, sans doute constamment et très fidèlement, et de façon encore bien mystérieuse, l'information que reçoit le cerveau tout au long de son existence grâce à ses multiples détecteurs périphériques organisés en différents canaux ou modalités sensorielles.

Le Moi Informationnel est la partie stockée, comme son nom l'indique, de toutes les caractéristiques qui font que l'on connaît, consciemment ou non, ses bornes corporelles et sensitives. Cette structure est sous la dépendance du Diffuseur qui la construit, en quelque sorte, à chaque fois que l'on rêve ou qu'un sujet est sous l'effet d'une substance hallucinogène.

Disons que ce que l'on appelle, traditionnellement, le Conscient de l'état d'éveil est, plus ou moins, l'équivalent du Moi Informationnel mémorisé, à ce détail près qu'il l'équivaut totalement que lorsqu'un sujet fait un rêve conscient, c'est à dire un rêve où il peut agir et se comporter consciemment, donc en mettant en jeu ses capacités de raisonnement analytique et d'action selon sa logique habituelle de l'état d'éveil, sans se laisser déborder par la logique étrange et "irrationnelle" du Diffuseur, ou qu'il subit l'effet d'un hallucinogène en gardant ces mêmes capacités.

Dès qu'il perd ces facultés qui font, somme toute, ce que nous appelons la "conscience", le Moi Informationnel n'est plus équivalent au Conscient de l'état d'éveil, car il est alors sous la dépendance complète de la logique qui anime l'Auto-programmateur.

On peut ainsi distinguer deux aspects fonctionnels différents du Moi Informationnel:

a) Le Moi Informationnel Conscient

b) Le Moi Informationnel Onirique

Dans le premier cas, il est évident que les structures nerveuses responsables des facultés de raisonnement logique et rationnel de l'état d'éveil (c) restent activées tandis que dans le second elles sont mises en veilleuse (figure VI). De quelle façon? On ne peut le dire, nos connaissances actuelles étant bien trop parcellaires et encore dans l'enfance; cependant la modulation de l'activation de la Formation Réticulaire semble évidente.

Le Moi Informationnel Conscient met en jeu une plus grande quantité d'infor-

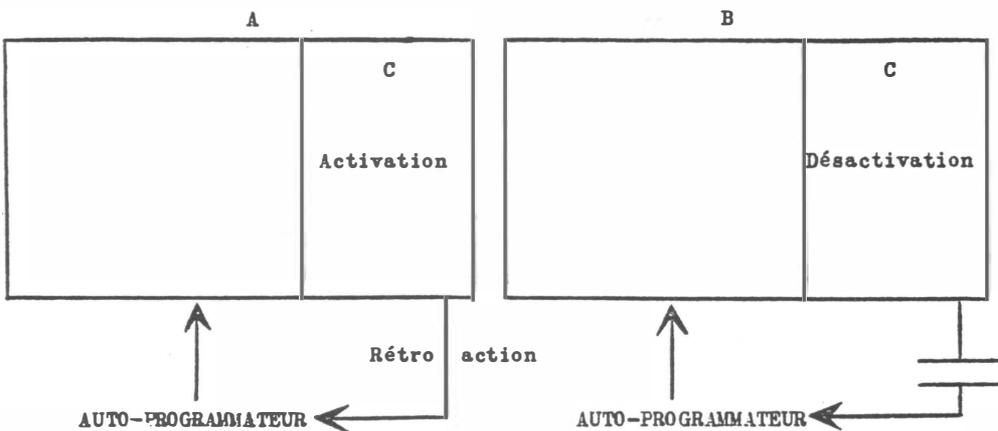


FIGURE VI Légende:voir texte ci-dessous.

mation que le second puisqu'il utilise des circuits élémentaires. Le Moi Informationnel Onirique, dégagé de l'asservissement de ces circuits, est caractérisé par une logique étrange qui n'a plus rien à voir avec la logique rationnelle de l'état d'éveil; il obéit à la logique inconnue du Diffuseur et, pour peu que l'on puisse se souvenir de ses propres rêves (ce qui est le cas de l'auteur), cela est absolument clair mais évidemment difficile à prouver scientifiquement, pour des raisons de méthodologie! Ces schémas fonctionnels différents du Moi Informationnel obéissent à la même structure de base sauf qu'un semble mettre en jeu l'activité d'une structure nerveuse additionnelle. L'activation de cette structure permettant alors une certaine autonomie du Moi mémoriel par rapport au Diffuseur dont il est issu, en quelque sorte une rétroaction du premier sur le second (figure VI). Quel qu'il en soit le Moi Informationnel est, certainement, un petit sous-ensemble du Diffuseur, cela mesuré en termes de quantité d'information nécessaire

pour les spécifier. On ne peut, bien entendu, guère pour l'instant donner aucun ordre de grandeur quant à la valeur quantitative à attribuer à cette information mémorisée mais l'on peut, intuitivement, deviner que la différence doit être très importante.

Cela sera, sans doute un jour futur, un problème intéressant à résoudre pour une discipline récente: la neuro-informatique(39).

Pour peu que l'on étudie sous cet angle conceptuel les récits subjectifs des sujets sous hallucinogène, ou que l'on fasse attention à sa propre vie onirique, il devient assez clair que le Moi Informationnel est bien directement issu de l'Auto-programmateur et qu'il ne dépend pas d'une structure autonome. Cependant les preuves directement scientifiques pour étayer ce fait resteront sans doute encore pour longtemps absentes.

Ainsi, par exemple, un sujet (observation personnelle) d'un sexe déterminé peut, lors d'une période onirique consciente, subitement se voir "transformé" en l'autre sexe et éprouver des sensations physiques imaginaires qu'il ou elle n'ont jamais éprouvées!

Ce genre de phénomène est de toute apparence très courant si l'on consulte la littérature s'occupant de décrire les expériences subjectives de sujets sous hallucinogène(26).

Dans ces cas, il est parfaitement apparent que le Projecteur Informationnel fait appel à une expérience perceptive ancienne du sujet pour la transposer à son niveau en réorganisant la structure du Moi Informationnel selon un nouveau schéma dérivé de l'acquis mémorisé de ladite expérience; en quelque sorte, il fait une modélisation, tout à fait comparable sur le plan de la complexité à celle que pourraient accomplir des ordinateurs dans d'autres domaines, d'un phénomène à partir de données précédemment stockées et intégrées. Ainsi un sujet mâle, dans l'exemple cité ci-dessus, ayant mémorisé inconsciemment les paramètres de son partenaire femelle pourra les transposer à son Moi Informationnel généré par l'Auto-programmateur et modéliser, simuler - imaginer donc - ce que cela pourrait être d'être une femme! Ces considérations démontrent, s'il en est, les capacités absolument prodigieuses et inutilisées à l'état conscient de nos cerveaux...

Lorsqu'un cerveau rêve ou fait des projections eidétiques, il accomplit

un travail de manipulation d'information encore plus complexe que celui d'un grand ordinateur moderne en traitant et en intégrant simultanément, avec une facilité et une rapidité tout à fait déconcertantes, une grande quantité de paramètres différents pour finalement synthétiser tout un monde informationnel aussi fin et structuré que le monde réel perçu par les modalités sensorielles!

Cependant, lorsqu'il est "conscient" et éveillé il semble que ses facultés soient considérablement atténuées et il devient bien incapable d'accomplir de telles performances, peut-être parce que l'être humain auquel il appartient n'a jamais été conduit à recevoir une éducation destinée à développer ses facultés de "raisonnement non-séquentiel et non-symbolique", en l'occurrence de modélisation quasi instantanée. Ce fait provient encore sans doute du mode de communication primitif que nous utilisons tous les jours, échange informationnel médié par des symboles peu riches en information et véhiculés séquentiellement d'un individu à un autre par des ondes acoustiques émises à un faible débit. Le cerveau humain utilise un langage essentiellement non-séquentiel et non-symbolique; cependant, dans le cours de l'Evolution, l'homme a développé un système communicationnel inter-individuel basé sur un langage séquentiel et symbolique à faible performance. Cette spécialisation communicationnelle est très certainement à l'origine de l'incapacité qu'à l'homme éveillé d'utiliser consciemment le langage naturel de son cerveau.

Il existe, apparemment, certaines personnes très intéressantes que l'on nomme eidétiques possédant un certain contrôle conscient de ce langage. Ainsi un eidétique peut surimposer une image hallucinatoire voulue sur sa perception d'une réalité externe: par exemple, un arbre dénudé pourra lui apparaître couvert de feuilles(27)!

Un phénomène de ce genre représente bien un exemple de ce que j'ai appelé un "raisonnement non-séquentiel et non-symbolique", autrement plus riche en information et complexe que les raisonnements analytiques séquentiels et symboliques que nous utilisons, à l'état d'éveil, tant dans le langage commun que le langage scientifique.

L'existence de tels faits associée à l'existence des phénomènes oniriques ou hallucinatoires tendrait à faire supposer l'existence d'une mémorisation

très fidèle chez tous les hommes mais soumise au contrôle rigoureux d'un Atténuateur, structure importante destinée à éviter l'apparition d'une information endogène aussi claire qu'une information exogène dans les centres intégrateurs corticaux à l'état d'éveil ce qui, autrement, aurait pour résultat de rendre difficile la discrimination chez un individu entre son Monde Intérieur et le Monde Réel.

Une personne eidétique agirait donc plus ou moins consciemment sur cette Atténuateur, à la différence de la plupart d'entre nous.

De plus, cet Atténuateur serait, évidemment, inhibé inconsciemment chez tout sujet normal lors des périodes de rêve ou sous l'action d'un hallucinogène (voir résumé, figure VII). Des recherches futures permettront de mieux poser le problème et s'avérera t'il, peut-être, que celui-ci s'identifie aux noyaux du Raphé serotoninergique inhibés présynaptiquement par les hallucinogènes indoliques. Quoi qu'il en soit voici de passionnantes recherches!

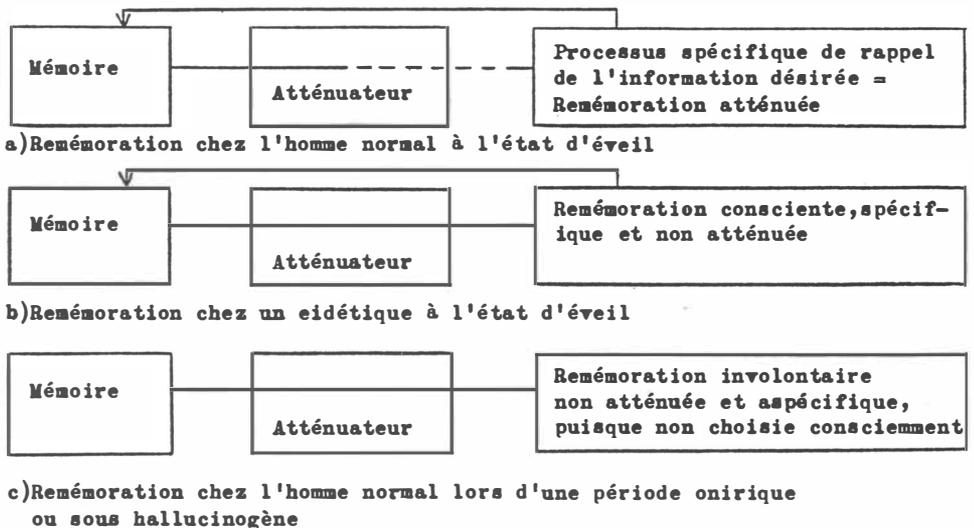


FIGURE VII

Figure VII

Légende:

A l'état d'éveil(a)un sujet peut rechercher sélectivement une information stockée dans sa mémoire(processus ici symbolisé par une flèche). Cependant cette information n'est plus semblable à l'engramme originale:la plupart de ses caractéristiques ont été comme effacé ou "atténué" (pointillés) de sorte qu'elle n'interfère pas avec l'information provenant directement des organes des sens.

Un eidétique(b)peut rechercher sélectivement une information sans l'atténuer: une information endogène apparaît dans sa conscience aussi claire et complexe qu'une information exogène.

Lorsque l'on rêve(c),l'information rappelée n'est plus atténuée:elle garde toute sa complexité initiale.Cependant elle n'est plus choisie consciemment; elle est émise par l'Auto-Programmeur au Moi Onirique.

Qu'est-ce que le Diffuseur Informationnel? C'est un générateur d'information qui "projette" et diffuse,d'où son nom,un programme imaginaire au Moi Informationnel,une sorte d'Auto-programmeur se programmant sans doute au travers d'un réseau complexe d'interactions entre les programmes innés de l'espèce (instincts),ceux appris(besoins,interdits socio-culturels)et certainement une multitude d'autres facteurs inconnus.

Ce projecteur d'information peut,dans certains cas extrêmes(par exemple dans les cas de schizophrénie hallucinatoire)manipuler complètement le Moi Informationnel et le sujet conscient perd alors ses facultés de raisonnement rationnel et sombre dans ce que l'on appelle la démence qui est,peut-être,équivalente à la mise en marche du Moi Informationnel Onirique par inactivation des structures nerveuses responsables des facultés d'analyse logique de l'état d'éveil simultanément à une libération plus ou moins modulée d'information endogène dans les systèmes intégrateurs corticaux.

Cette discussion pourrait sembler être une longue digression sur le sujet qui nous intéresse.Bien au contraire,une meilleure connaissance de ce qui se passe dans notre cerveau ne peut que nous aider dans l'étude d'un phénomène aussi curieux que celui qui nous préoccupe.

De plus, ces considérations me paraissent être d'une importance fondamentale car il est nécessaire d'arriver à comprendre comment les témoins de Rencontres Rapprochées du Troisième Type arrivent vraiment à croire en la "réalité" de ce qu'ils ont prétendument observé malgré l'absurdité si manifeste de ces observations. La réponse est que l'expérience eidétique est vécue sans nul doute avec autant d'intensité que n'importe quelle expérience réelle et tant, même, que l'individu qui y est soumis arrive difficilement à croire que celle-ci ait pu être imaginaire.

L'expérience des Rencontres Rapprochées du Troisième Type laisse des traces durables dans l'esprit de ceux qui l'ont vécue(28) simplement du fait que leur Moi Conscient a cru au programme projeté par le Diffuseur!

Cela s'entend aisément si l'on considère avec quelle fidélité ce dernier recrée de l'information synthétique minutieusement détaillée et d'apparence aussi réelle que de l'information perçue par les organes des sens. De plus, ce modèle fait une prédiction intéressante mais pas forcément obligatoire: en recherchant dans la littérature, l'on devrait pouvoir trouver des expériences d'un type particulier où les sujets ont cru comprendre des "vérités fondamentales" sur l'Univers, de la même façon que des sujets sous haute dose de LSD vivent des expériences quasi mystiques(29) qu'ils décrivent comme une disparition complète de leurs bornes corporelles et sensitives, concomitante à une "fusion" de leur moi avec "l'Univers", en l'occurrence, selon notre terminologie, nous pouvons dire qu'ils expérimentent alors un mélange de leur Moi Informationnel avec leur Auto-programmateur, ce qui doit certainement être une plaisante et riche expérience!

Nous voyons ainsi que le Monde Intérieur d'un être humain est sans doute aussi complexe et structuré que le Monde Extérieur qu'il perçoit grâce à ses différents modes sensoriels mais, malheureusement, encore totalement inexploré en raison de la nature particulièrement individuelle de sa découverte, difficilement réductible aux méthodes traditionnelles de la Science. Il est certainement fort important d'en tenir compte par rapport aux témoignages qui nous intéressent qui sont, selon l'hypothèse présentée, un intime mélange de ces deux réalités.

Conclusion

L'hypothèse présentée dans ce rapport, comme toutes les hypothèses à propos des UFOs, reste à démontrer mais elle a non seulement le mérite de donner une unification rationnelle et intelligible entre les aspects anthropologiques et biologiques les plus étranges du phénomène et ceux plus "habituels" (réservés aux physiiciens) (30), si tant est que l'on peut considérer ces derniers comme habituels, mais encore elle est parfaitement testable en laboratoire:

peut-on agir sur les réseaux de neurones catécholaminergiques du Locus Coeruleus ou ceux sérotoninergiques du Raphé et en moduler les taux de neuromédiateurs par voie indirecte au moyen d'ondes électromagnétiques de courte longueur d'onde de façon à provoquer l'apparition d'information endogène dans les systèmes intégrateurs corticaux?

Je laisse ces expériences à mes collègues biologistes susceptibles d'avoir l'opportunité et les facilités de les réaliser. L'auteur de l'article, malgré un certain scepticisme fluctuant vis à vis d'un phénomène si éluéif a néanmoins tenté de trouver un schéma conceptuel permettant de lever l'étrangeté "mystérieuse" de certains rapports.

Appendice I

En marge de l'objet principal de cet article il serait, peut-être, intéressant de noter encore un fait expérimental susceptible de donner une explication physiologique parfaitement concrète à un fait qui a longtemps semblé mystérieux à ceux qui étudient les rapports d'UFOs, à savoir les cas de paralysie temporaire (31).

On a ainsi démontré (32) que la région caudale du complexe du Locus Coeruleus commande l'inhibition des efférences motrices lors du rêve, c'est à dire qu'elle est responsable du blocage de l'activité musculaire au cours du sommeil paradoxal.

Si l'on détruit sélectivement cette région chez le chat(32)l'on observe alors,lors des périodes de rêve,que l'animal peut se déplacer et,apparemment,suivre des objets imaginaires bien qu'il soit profondément endormi. Ainsi si les descriptions de paralysie temporaire sont vraiment réelles, il serait fort probable qu'elles soient justement déclenchées par une action à distance sur ce complexe.Assez souvent les Rencontres Rapprochées du Troisième Type font état de paralysie associée à la description d'évènements bizarres et,apparemment,irrationnels.

Cela serait bien ce à quoi l'on devrait s'attendre si tout le système du Locus Coeruleus était influencé lors de ces cas:induction de rêves ou semi-rêves,d'une part,et induction d'une inhibition du tonus musculaire. Cependant,notons,qu'il existe une inconsistance assez importante avec les faits allégués:quant un sujet rêve,le complexe coerulein agissant sur les efférences motrices fait disparaître le tonus musculaire.En d'autres termes si le sujet était debout,il tomberait soudain à terre au lieu de demeurer en position verticale ce qui n'est pas le cas si l'on doit en croire les témoins.

Néanmoins ce modèle répond presque à tous les effets jusqu'ici non expliqués des Rencontres Rapprochées du Troisième Type,en ayant l'avantage de réconcilier des données apparemment absurdes avec des connaissances évolutives de la neurobiologie moderne.

Des recherches futures répondront sans doute aux questions encore imparfaitement résolues.

Appendice II

En raison de la nature évolutive et encore très incomplète de nos connaissances sur les phénomènes oniriques ou eidétiques,il ne m'a pas paru utile de discuter de l'action probable d'autres systèmes neuronaux et neurotransmetteurs associés quant à leur régulation.

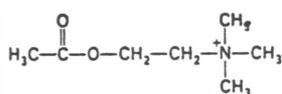
Mais il est certain que le modèle relativement simple et manichéen, proposé par l'équipe de Jouvet, risque d'être un jour prochain grandement modifié et inclure l'action concertée de plusieurs systèmes de noyaux pontiques différents et de leur neurotransmetteur spécifique.

Ainsi l'on sait que des processus cholinergiques sont impliqués dans l'apparition du sommeil paradoxal puisque des substances anticholinergiques, comme l'atropine, par exemple, peuvent le supprimer tandis que des agonistes de l'acétylcholine (figure VIIIa), comme l'éserine, peuvent l'augmenter (33).

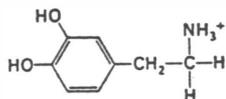
D'autre part, fait intéressant montrant encore, s'il en est, l'intime ressemblance entre les phénomènes oniriques et eidétiques, il est bien connu (34) que les substances agissant par compétition antagonistique avec les sites récepteurs post-synaptiques de l'acétylcholine, ainsi que l'atropine, justement, ou encore l'hyoscine, provoquent à faible dose de la somnolence et, à plus forte dose, des projections eidétiques.

Par ailleurs, l'acide gamma-hydroxybutyrique augmente, lui aussi, la durée du sommeil paradoxal (35) en agissant sélectivement sur le système dopaminergique du striatum et du noyau caudé (36), ce qui implique donc encore une participation de la dopamine (figure VIIIb) dans la régulation ou la modulation des phases oniriques.

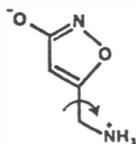
De plus, le muscimol (figure VIIIc), substance responsable de l'action hallucinogène de la célèbre *Amanita Muscaria*, ou Amanite tue-mouches (37), magnifique champignon de nos régions tempérées, et agoniste du GABA (figure VIII d) (38), lui-même très proche du 4-OHB, pourrait suggérer d'autres mécanismes!



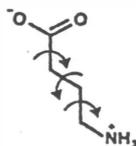
a)



b)



c)



d)

FIGURE VIII

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PSYCHOLOGICAL and PERCEPTIVE ASPECTS

UFO DRAWINGS BY WITNESSES AND NON WITNESSES: IS THERE SOMETHING IN COMMON?

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ABSTRACT

This paper describes the results of two separate efforts: (1) administration of a specially prepared UFO drawing "test" to several groups of alleged UFO eye witnesses and non-witnesses, and (2) a relatively comprehensive review of the published UFO literature containing drawings of UFOs by eye witnesses. This was done in order to determine whether or not any differences might be found between the drawings of the two groups in terms of such features as the UFO's width to height ratio, amount and kind of surface detail, presence or absence of other (environmental) scene detail, and other readily quantifiable information. A second and equally important objective was to allow for the development of a UFO Appearance Recognition and Identification Test Procedure which has appeared in the first issue of this journal (vol. 1, no. 1, 1976). It was found that there are

not any readily discernable differences between the eye witness and the non eye witness UFO drawings on the above features. While this evidence does not prove that the two participant groups come from the same population sample or that all UFO witnesses may be merely portraying (through their drawing) a commonly held social stereotype image of what UFOs are supposed to look like, the evidence could be interpreted this way. Another tentative hypothesis raised from these findings is that almost everyone (eye witnesses and non eye witnesses alike) has seen a drawing, photograph, movie, etc. of a UFO at some time in the past (in distinction to having seen an actual UFO) which might account for the similarities between these two sets of drawings. The paper concludes with illustrations of the most common UFO shapes along with their respective shape/detail codes derived from the previously published paper (referenced above).

KEY WORDS: UFO shapes; UFO shape/detail codes; eye witness drawings; non eye witness drawings; computer coding baseline data.

If a picture be worth a thousand words then
a drawing should be worth at least a hundred.

Until such time as UFO investigators and analysts are presented with so-called scientifically acceptable evidence¹, we must be content with the reports made by the eye witnesses of UFO phenomena. Fortunately there is a growing concern for including in the eye witness interview a request for a drawing of what was seen. If the above motto is correct then such a procedure is justified on the grounds of saving space on the report form. Yet there is another important reason for obtaining a drawing of the phenomena which will become clear later in this paper. A review of the published UFO literature has shown that a wide variety of names are given to the shape of the UFO(s), e. g., disc, plate, top, airfoil, wing, boomerang, wedge, tetragon, point, star, and scores of others. While these verbal labels may be perfectly clear to the witness (and even the field investigator involved in the sighting) they may not be so unambiguous to others. And so a drawing can immediately make more clear what the UFO looked like².

An important element in understanding how useful UFO drawings might be in the understanding of the core UFO phenomenon is knowing whether these drawings actually represent a clearly identifiable class of drawings within some larger set of object drawings. In other words, do UFO drawings made by alleged eye witnesses of UFOs differ from drawings made by people who claim they have never seen one³.

I. UFO Shape and Detail Drawings by People Who Claim to Have Seen A UFO and by People Who Believe They Have Not Seen a UFO.

Method. The following UFO drawing exercise was administered to each of three test groups described in Table 1. In each case each participant wrote his sex, occupation, handedness, and whether or not he sincerely believed he had seen a UFO in the past on a clean 5" x 7" white card. Each group was then requested to "draw what you think a UFO looks like... include whatever details and embellishments you think are necessary." After all cards had been collected I stamped the test date and other information on each of the 177 cards.

Table 1
Test Participant Information

	Group 1 ⁽¹⁾	Group 2 ⁽²⁾	Group 3 ⁽³⁾
Test Date	11-6-76	8-6-77	9-29-77
Number of Participants	38	67	72
Males (right handed)	25	note 4	42
(left handed)	3	note 4	4
Females (right handed)	9	note 4	25
(left handed)	1	note 4	1
<hr/>			
"Have Seen a UFO"			
Males	13 (34.2%)	24 (35.8%)	7 (9.7%)
Females	3 (7.8%)	12 (17.9%)	3 (4.2%)
Age Range (mean)			22-72
Yr. UFO field invest. exper.	0-9	(34.5 yrs)	(35.7 yrs)
		0-30	

Table 1
Test Participant Information

	Group 1 ⁽¹⁾	Group 2 ⁽²⁾	Group 3 ⁽³⁾
"Have Not Seen a UFO"			
Males	15 (39.4%)	16 (23.8%)	39 (54.1%)
Females	7 (18.5%)	15 (22.4%)	23 (31.9%)
Age Range (mean)			
Males		} (36.1 yrs)	24-84 (46)
Females			12-81 (41.6)
UFO field investigative exp.	0-8 (yrs)	Mean=7 yrs	

Notes for Table 1:

- (1) Group 1 represented individuals already interested in UFOs; this meeting was intended as an opportunity to discuss the possibility of forming a San Francisco Bay area UFO study group. The attendees were members of such organizations as Aerial Phenomena Research Organization (APRO), Center for UFO Studies (CUFOS), Mutual UFO Network (MUFON), and the National Investigations Committee on Aerial Phenomena (NICAP).
- (2) Group 2 represented most of the attendees at the 1977 International UFO Conference held at the Hotel San Franciscan in San Francisco, California.
- (3) Group 3 consisted (primarily) of professional architects attending a monthly chapter meeting of the American Institute of Architects at which the author spoke about UFOs.
- (4) Handedness was not recorded due to a procedural oversight.

Results. Table 2 presents the results of these three UFO drawing tests. The "Have" column for each group is for those participants who indicated that they had witnessed a UFO; the "Have not" column for each group indicates the opposite. The measures used to quantify each drawing were selected on the pragmatic basis of relative unambiguity of interpretation by the scorer. No attempt was made to label or interpret the actual identity of any UFO detail, e. g. , if two thin projections were drawn protruding from a dome-like structure on top of the UFO shape, these projections were not considered to be antennas.

Regarding the general measures presented in Table 2 the following may be said: (a) the "Have" participants drew a larger percentage of valid UFO shapes than the "Have not" participants in all three groups, (b) group 1 and 2 drew a larger percentage of symmetrical shapes than did group 3 in the "Have" and the "Have not" sub groups. It may be noted that groups 1 and 2 were UFO "buffs" while group 3 was made up (primarily) of professional architects and designers, (c) group 3 drew an extraordinarily large number of asymmetrical UFO shapes compared with the other two groups for some undetermined reason. Perhaps this group used this exercise as an opportunity to express their "artistic creativity" without fear of ridicule or censure, and (d) if all of the 136 valid drawings were randomly shuffled into a single stack of cards, it would be virtually impossible to sort the "Have" from the "Have not" drawings beyond the chance level of performance⁵.

Table 2

Summary of UFO Shape and Detail Drawings by People Who Claim to Have Seen and Not Seen a UFO

Measures	Group 1		Group 2		Group 3	
	"Have"	"Have not"	"Have"	"Have not"	"Have"	"Have not"
General Number of...						
Valid Drawings ¹	15 (93%)	20 (91%)	28 (77%)	21 (67%)	7 (70%)	45 (62%)
Symmetrical Drawings	13	16	23	19	5	25
Asymmetrical Drawings	2	4	5	2	2	20
Side View Drawings	7	11	17	13	4	22
Isometric View Drawings	4	8	7	6	0	15
UFO at indeterminate angle	4	1	4	2	3	8
UFO Drawn parallel to grnd.	8	15	18	21	6	27
Cards with no shape drawn	1	1	5	7	3	9
Cards with 1 UFO drawn	13	18	22	20	5	42
Cards with 2 UFOs drawn	0	1	2	0	1	3
Cards with 3+UFOs drawn	2	1	4	1	1	0
UFO Major Outline Measures						
Mean width/height ratio	4.64	6.44	4.28	2.84	7.98	4.93
Max. width/height ratio	8.00	14.6	11.58	3.96	24.66	18.60
Min. width/height ratio	1.00	1.98	1.00	1.60	2.13	1.32
Max. width of UFO (mm)	168	162	197	106	117	138
UFO "Dome" Measures						
Mean width/height ratio	6.87	3.76	3.48	1.88	7.55	2.28
Max. width/height ratio	17.4	7.60	4.42	5.71	note 2	5.12
Min. width/height ratio	2.42	1.64	1.14	1.13	note 2	0.84
Miscellaneous Measures Number of drawings with...						
Round openings (apertures?)	1 (6.6%)	4 (20%)	11 (39%)	8 (38%)	1 (14.2%)	13 (29%)
Other shaped openings	5 (33%)	7 (35%)	7 (25%)	6 (29%)	0	12 (26%)
Thin lines extending from UFO	0	5 (25%)	5 (18%)	2 (9.5%)	0	9 (20%)
Wavy lines from UFO body	5 (33%)	8 (40%)	8 (29%)	9 (43%)	3 (43%)	12 (27%)
Markings, insignias, etc.	0	1 (5%)	1 (3.5%)	2 (9.5%)	0	1 (2%)

note 1. Obviously ludicrous shapes were not included (e.g., "UFO initials, "cup on saucer. ").

It is essential to caution against drawing unwarranted conclusions from data such as these. For one thing, the sample size is quite small; for another, the participants met together in these groups for a common purpose which, in the case of group 1 and 2, was closely related to the discussion of the UFO phenomenon. Further UFO shape/detail drawing tests should be conducted on a larger sample size drawn at random from the general population. In light of this caution what can be said of these findings? A few tentative hypotheses are offered: (first) how is it possible for both the "Have" and the "Have not" sub groups to draw such similar UFO shapes except that both groups have been exposed to the same basic shape and details. Perhaps it may be said that almost everyone in the modern world has seen either an actual UFO (as some claim) or some graphic - visually perceived - representation of one. If this is true then it is not only imprecise to speak of a "Have not" sub group but downright erroneous. If almost everyone has already seen at least a pictorial representation of a UFO then the UFO field investigator should make a serious attempt to determine the appearance of these "false UFOs" that a UFO witness has seen in order to be able to compare their features with the features of the actual UFO. This would seem to be an important step in the field investigative procedure since it is well known that ambiguous visual stimuli can be interpreted merely on the basis of the first verbal label one assigns to the stimulus. If one thinks he has seen a UFO, for instance, an amorphous patch of luminous haze may take on a concrete appearance complete with portholes, fins, markings, and other details.

A (second) tentative hypothesis that might be offered is that the "Have" sub group is not as likely to include as many details (cf. Misc. Measures in Table 2) in their drawings as will the "Have not" sub group; the factors that lead the participant to place himself in the "Have" sub group act to constrain him in the number of details drawn. Could it be that the UFO experience acts to form a "model of reality" for what has been (previous to the encounter) only a vague mental concept but which (afterward) becomes a concrete, constrained, and personally real object? Now let us turn to the second set of data available for study.

II. Drawings of UFOs in the Literature.

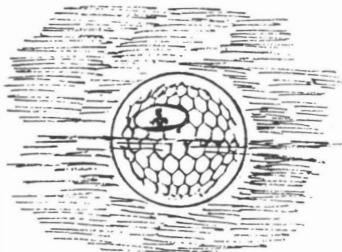
All of the following UFO drawings were taken directly and as accurately as possible (in terms of the line weight, details, etc.) from published UFO reports, magazines, UFO organization bulletins, and other literature available to the general public⁶. These drawings have been grouped into several basic outline shape categories; they form the basis for development of the UFO Appearance Recognition and Identification Test Procedure by the author (Haines, 1976) although space does not permit publication of all of the drawings here.

Table 3 presents the date and time of the sighting, original reference, and shape/detail code for Figure 1.

Fig. 1

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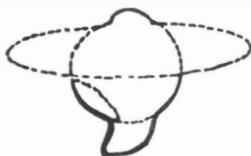
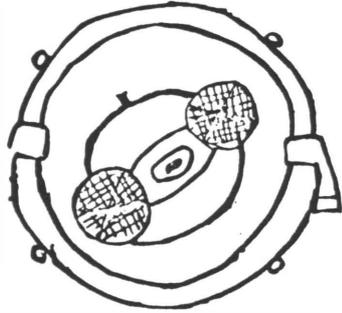


Fig. 1

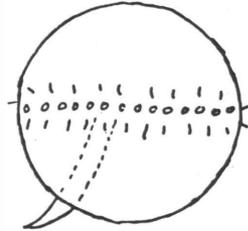
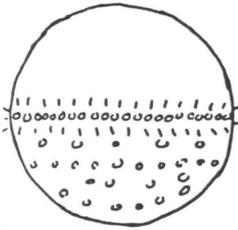
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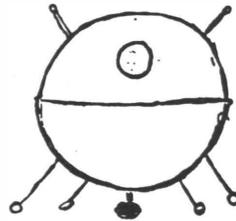


Table 3
References, Sighting Date/Time, and Shape/Detail Codes for Fig. 1 Shapes
- Circular Shape -

Dwg. No.	Sighting Date	Time	Reference	Assigned Outline Code ¹	Detail Codes
					Top;Middle;Bottom
1	9-26-63	0420	The UFO Evidence, 1964, p. 63	TIB1	
2	11-2-73	0245	APRO Bulletin, Jan-Feb. 73	TIB1	
3	9-13-59	0105	Official Guide to UFOs, p. 152	TIB1	
4	12-19-74	2000	Delaware County Journal, (Oklahoma), 1-2-75	TIB1	
5	4-26-54	1530	The UFO Evidence, 1964, p. 67	TIB1	
6	7-21-59	0915	Flying S. Rev., Spec. #4, p. 23	TIB1	
7	5-23-74	1257	Skylook, Jan. 75, p. 5	TIB1	MAI(22);BAI(25)
8	5-23-74	1257	Skylook, Jan. 75, p. 6	TIB1	MAI(14)(SL);BP5(1)
9	9-22-71	1945	Flying S. Rev., Spec. #5, p. 17	TIB1	
10	7-1-66	2300	UFOs Behind the Iron Curtain, 1972, pp. 218-220	TIB1	TD2D8P11
11	11-13-72	1800	Flying S. Rev., Case Hist. #13	TIB1	BP8(S)
12	1-19-67	0905	The UFO Enigma, 1966, p. 9	TIB1	TP8(2)C;BP8(5)C

note 1. The width/height ratio for all of these spherical shapes = 1.

Table 4

References, Sighting Date/Time, and Shape/Detail Codes for Fig. 2 Shapes

Dwg. No.	Sighting Date Time	Reference	Assigned Outline Code ¹		Detail Codes
			Top	Middle	
1	11-13-67 0400	Flying S. Rev. Case Hist. #13, 1973, p. 5	T1	B4	
2	12-24-60 —	San Francisco Examiner, 10-11-75	T1		
3	12-12-75 2300	APRO Bulletin, Jan. 76	T1	TA7(7), (13);	MA7(15); BAJ(17)
4	7-10-74 2345	Skylook, Jan. 75, p. 4	T1	TP5, P6;	BP4(23)
5	12-14-75 2100	APRO Bulletin, Jan. 76	T2	M2	BP1(5)
6	4-21-57 —	The UFO Enigma, 1966, p. 17	T1	BP10(16)-(B)	
7	2-14-67 0700	Skylook, Aug. 75, p. 15	T2	BM21	BA7(8)(SL)
8	9-?-70 1630	Flying S. Rev. Case Hist. #18, 1974, p. iii	T2	M8	
9	?-?-70 2000	Flying S. Rev. Case Hist. #8, 1971, p. 15	T12	TT1-Δ;	MT1-Δ; BT1-Δ
10	1-6-61 0300	Flying S. Rev. Case Hist. #18, 1974, p. 10	T3	BT6	
11	1-30-76 —	Santa Ana Register, 4-17-77	T3	M8; BM3	TD5(SL); MAI (>50)
12	8-27-75 2230	Flying S. Rev. v. 21, n 3&4, p. 60	T22	TD5;	MT1

note 1. Mean width/height ratio = 2.25 (standard Deviation = 0.68)

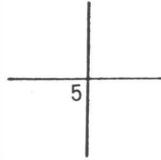
Maximum width/height ratio = 3.75.

Minimum width/height ratio = 0.96.

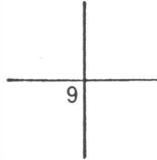
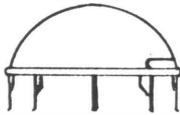
Fig. 2

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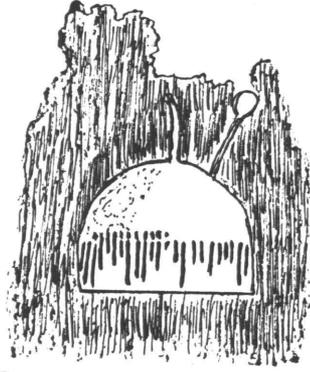
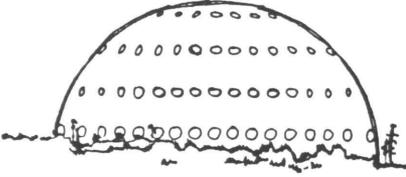
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Fig. 2

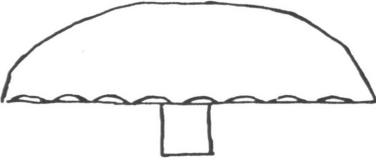
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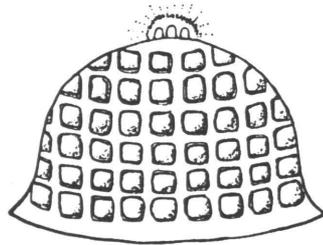
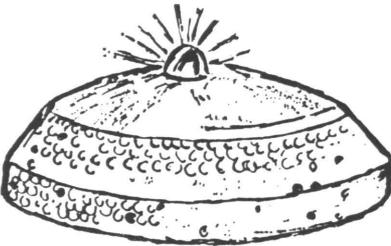


Table 5

References, Sighting Date/Time, and Shape/Detail Codes for Fig. 3 Shapes

Dwg. No.	Sighting Date Time	Reference	Assigned Outline Code ²		Detail Codes
			Top	Middle;Bottom	
1	2-27-74	2145 Flying S. Rev. v.21, n. 3&4, p. 48	T9;B14		A10(NO)
2	2-26-75	2045 Skylook, July 75, pp. 4-6	T9;M10(R);B14		MAI(7)(SL)
3	9-20-66	2030 The Utah UFO Display, Salisbury, 1974, p. 23	T9;B14		MAI(6)(SL)
4	3-13-75	2100 APRO Bulletin, April 75, p. 1, 3	T22;B15		MA6(1)(SL);BA1(11)(SL)
5	8-20-66	Dusk The Utah UFO Display, Ibid, p. 241	T9;B14		A10(NO)
6	3-20-66	2035 UFOs Past, Present, & Future, Emenegger, 1974, p. 76	T7;B14		BA4(2)(SL), A8(1)(SL)
7	12-21-64	1700 Official UFO, Oct. 75, p. 22-3	TD6(6);B14		A10(NO)
8	5-11-50	AM The UFO Evidence, NICAP, p. 93 [note 1]	T6;BM2		TP5(1)
9	3-?-54	— The UFO Evidence, Ibid, p. 93 [note 1]	T6;BM20		TP8(1)-S

Table 5

References, Sighting Date/Time, and Shape/Detail Codes for Fig. 3 Shapes

Dwg. Sighting Date Time	Reference	Assigned		Detail Codes
		Outline Code ²	Top;Middle;Bottom	
10 10-19-73 1500	Flying S. Rev. Case Hist. #18, 1974, p. 12	T2, M2(2), M3, M8; BT2	TP8(C), A1(5); BD8(SL), D5(2)	
11 2-28-76 2115	Arizona Sun & Sentinel, Yuma, 3-4-76	T17; BM15	TD3(TR)(SL), A1(2), A2(2); BA 7(5)(SL), D9(1)	
12 8-16-68 2300	The UFO Enigma, Ibid, p. 6	T12	MA10(NO); BP10 (5)(B)	

note 1. Drawing from black & white photograph. Drawn by NICAP artist Eric Aldwinckle.

- Mean width/height ratio = 3.40 (standard deviation = 2.10).
Maximum width/height ratio = 7.63.
Minimum width/height ratio = 1.37.

Fig. 3

1

2



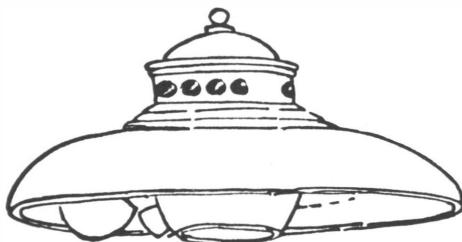
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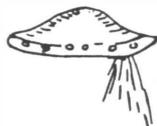
10



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Fig. 3



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Table 6

References, Sighting Date/Time, and Shape/Detail Codes for Fig. 4 Shapes
- Domed Top and Bottom Disc -

Dwg. No.	Sighting Date Time	Reference	Assigned Outline Code ¹	Detail Codes Top;Middle;Bottom
1	3- 9-69 2200	Flying S. Rev. Spec. Issue #4, Aug. 71, p. 54	T3;M3;B3	MAU(5)
2	8- 4-72 evening	Flying S. Rev. Case Hist. #15, 1973, p. 7	T3;M3;B3	TD2(1)(SL);MA8(1)(SL)
3	8-10-68 2000	Official UFO, April, 76, p. 14	T3;M3;B3	TD5(1)(SL);BD5(1)(SL)
4	4-22-66 0015	UFOs: A New Look, NICAP, May 69, p. 8	T13;MB14	TD9(1)(SL);MA1(10)(SL)
5	4-22-67 2010	The UFO Enigma, Ibid. p. 9	T6;M3	TD7(1);MA2(7)(SL)
6	1- 1-51 0700	Skylook, May 74, p. 8	T2;M3(R);B2	MA2(6)
7	9-15-66 1400	The Utah UFO Display, Ibid., p. 242	T3, M2;M3; BM2, B3	TD7(1)(SL);MA2(8);BD7(1)(SL)
8	7- ?-64 1130	Flying S. Rev. v.21, n. 2, P. 7	T15;MT12;B12	MA8(7);BA8(7)
9	7-25-38 1130	Flying S. Rev. Spec. Issue #4, Aug. 71, p. 46	T10;M2;B10	DO, P12(H)
10	8-10-68 2000	Flying S. Rev. Case Hist. #13, 1973, p. 14	T3;M3;B3	TD2(1)(SL);BD2(1)(SL)

Table 6

References, Sighting Date/Time, and Shape/Detail Codes for Fig. 4 Shapes
 - Domed Top and Bottom Disc -

Dwg.	Sighting Date Time	Reference	Assigned Outline Code ¹	Detail Codes Top;Middle;Bottom
11	1- ?-75 0200	Skylook, March 76, p. 3	T3;EM3	MA6(20)(SL)
12	11-22-61 1900	The UFO Evidence, Ibid. p. 54	M5	MA2(9)(SL)(B)

note 1. Mean width/height ratio = 3.38 (standard deviation = 1.38).
 Maximum width/height ratio = 6.00.
 Minimum width/height ratio = 1.85.

Fig. 4

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6



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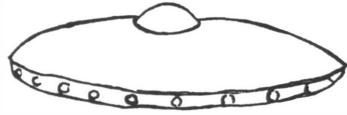
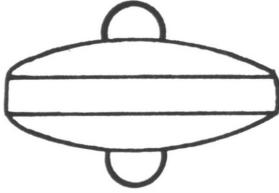
10



Fig. 4

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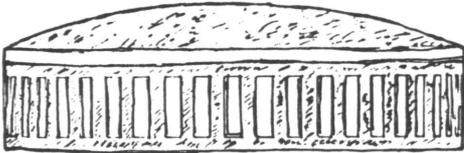
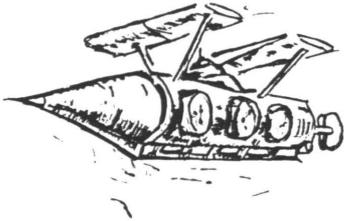


Fig. 5

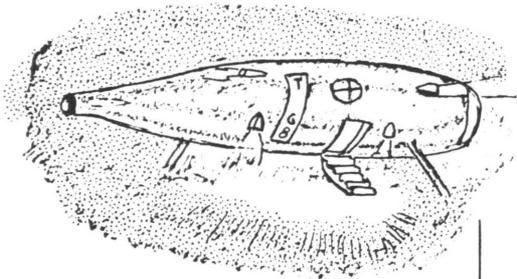
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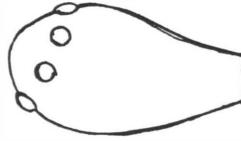
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Fig. 5

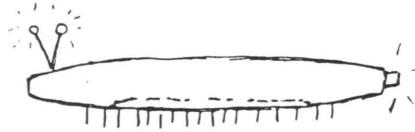
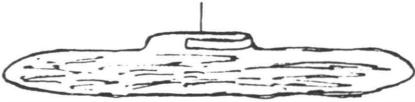
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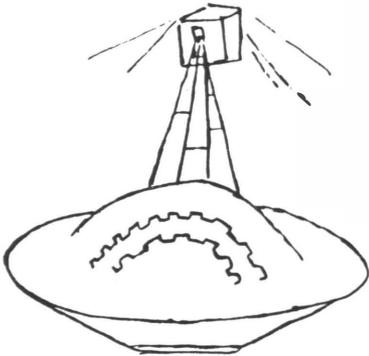


Table 7

References, Sighting Date/Time, and Shape/Detail Codes for Fig. 5 Shapes
- Miscellaneous Asymmetric Shapes -

Dwg.	Sighting Date Time	Reference	Assigned Outline Code	Detail Codes Top;Middle;Bottom
1	4-19-1897 0600	Official UFO, Jan. 76, p. 31	V6;M3 (suspended below 2 wings) note 1	TD6;MA1(3)
2	2-12-73 1315	Flying S. Rev. Case Hist. #14, 1973, p. 16	TB7;MT13;B15	P12(NO),DO
3	5-31-71 after-noon	UFO Investigator, NICAP, Aug. 1971, p. 2	V1CV(1=65,h=45)	TA1-(4)
4	1-29-69 1000	Flying S. Rev. Spec. Issue #4, Aug. 71, p. 54	V9(1=3,h=2.5)	TD2(4)-RE(SL)
5	3-23-67 before dawn	Flying Saucers & UFOs-Quarterly, True, #1,p.12	V7(1=13.2,h=3.1)	TA1(1)(B);MA6(2);BP4(2)
6	4-20-68 0830	UFOs Behind the Iron Curtain, Bantam Publ., 1972, p. 239	T21;MV8(1=3.5,h=0.74);BV28	
7	5-3-75 1334	Skylook, Aug. 75, p. 4	M5	TD1(TR),P1(1)
8	4-23-66 0210	UFOs: A New Look, Ibid. p. 22	T3;M3;B3(1=9.3,h=1.4)	TP8(2)(SL);MP1(17);BD7(1)(SL)
9	2-19-51 0720	The UFO Evidence, Ibid. p. 124	V5(1=3,h=0.7)	
10	5-31-69 0130	UFOs Behind the Iron Curtain, Ibid., p. 162	V5(1=4.3,h=0.7)	
11	2-12-76 2345	Skylook, March 76, p. 16	TM21;MT20;BT3, B12, B16	T(B)
12	10-23-73 1130	Flying S. Rev. v.21, n. 1, pp. 3-6	V28	

note 1. Some UFO sightings require the use of a text description in addition to the coding symbols. Such text must be kept very brief and precise.

Some Observations. The UFO drawings presented in Figures 1 through 5 are but a small sample from the author's files. They were selected for presentation because they illustrate the basic outline shapes and details commonly reported in the open literature. Several observations may be made about these alleged eye witness UFO drawings: (a) in those cases where it is verified that a professional artist has drawn the UFO from eye witness sketches and verbal description the resulting drawing becomes more symmetrical. While this is not particularly bad, some attempt should always be made to have a third party verify that the final drawing corresponds closely with the original sketch and verbal description. In addition, it should become standard practice to indicate on every UFO drawing the name (or initials) of the artist, (b) after comparing the UFO shapes presented in Figures 1 through 5 with the drawings upon which Table 2 is based it is clear that the present participants in the UFO drawing tests drew only two basic outline shapes, viz., the flat bottom domed top disc (cf. Fig. 3) and the domed top and bottom disc (cf. Fig. 4). None of the participants drew spheres or hemispheres and only 35 drew asymmetric drawings, (c) referring to the assigned outline code of Table 3 through 7, the longest code contained 5 "elements"⁷ and the shortest only one. This outline shape coding procedure appears to be valid for dealing with large numbers of highly diverse outline shapes in a way that allows the investigator to perform statistical analyses, and (d) referring to the detail codes of Table 3 through 7, it is apparent that once the coding

layout format is known (including the various conventions for punctuation, etc.) it is possible to string together a wide variety of "elements" in their approximate spatial location on the UFO outline to yield a basically representative symbolic representation of the original UFO witnessed.

The experience of several UFO investigators who have used the UFO Appearance Recognition and Identification Test Procedure has shown it to be an effective tool.

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Haines R. F. (in press-anticipated publ. date 1978) OBSERVING UFOs, Nelson-Hall, Chicago.

FOOTNOTES

1. Controversy continues concerning what constitutes "scientifically acceptable evidence" of UFOs. For present purposes we will simply assume that it includes (at its minimum) some physical object(s) that can be subjected to all necessary and sufficient analyses conceived by the interested scientific community.
2. The author has presented an in-depth discussion of the perceptual capabilities and limitations of humans in a recent book titled Observing UFOs, Nelson-Hall Co., Chicago, 1979.

3. I do not mean to imply that one group represents the "truth" and the other does not. The point is not to question the credibility of either test group but rather to accept the statements of each as being true (however naive this may appear).
4. Drawings that were not used in these analyses (invalid drawings) were those which were obviously ludicrous. Some examples of invalid drawings were the three initials "U-F-O" with many fine embellishments drawn above a layer of clouds, a cup on top of a saucer and labelled as such, and a jet fighter aircraft.
5. It is acknowledged that one must possess some cognitive model of what a UFO looks like before one can validly sort drawings into these two categories. Nevertheless, the present set of drawings contained such a similar amount of outline shapes and detail that regardless of what model one possessed, it would have been descriptive of as many drawings of the present "Have" sub group as of the present "Have not" sub group.
6. I am deeply grateful to Peri Cline for her fine assistance in collecting and cataloguing many of these drawings.
7. An "element" is defined as any combination of letters and numbers lying between commas, semi-colons, or other punctuation.

EPISTEMOLOGY of the RESEARCH

THE PRESENT SITUATION OF UFO RESEARCH

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ABSTRACT

This paper compares the present situation of UFO research with the phases in the development and in the structure of a scientific discipline in general. Some of the problems of documentation as well as of the interpretation of UFO reports are touched. Special attention is given to the question of disinformation (if we are to assume that the UFO phenomenon is a manifestation of some unknown intelligence). The necessity of a thesaurus for all UFO-related qualities is stressed and the main advantages of a proposed 'unlimited' machine readable UFO data base are demonstrated. Finally this paper discusses the possible meanings of the prevalence of the extraterrestrial hypo-

thesis (ETH) in UFO research: Does this hypothesis constitute a methodologically feasible tool or is it merely an indication, that UFO research is partly still in a pre-scientific phase ?

Key Words

Analysis	Heuristic
Data Base	Methodology
Description	Noise
Descriptive Phase	Persecution Mania
Disinformation	Pre-Scientific Phase
Explicative Phase	PSI
Extraterrestrial Hypothesis	Random Sample
Extrinsic Factors	Signal
Field Investigation	Strangeness
Formalization	Theoretical Phase
Game Theory	Thesaurus

INTRODUCTION

Development and structure of a scientific discipline are usually classified by three phases or activities:

The Descriptive Phase

It stands at the beginning of any analysis of a problem - if this analysis may be called 'scientific' at all. The purpose of this phase is the collection, description and the storage of statements about facts, which present themselves at first frequently of their own accord, while they are later obtained by systematic search (experiment). Important instruments for this phase are the various methods for the documentation of data.

The Explicative Phase

The attempt to describe statements (which may appear non-problematic at first sight) more and more precisely leads to the development of a technical language with more exactly defined terms than those used in colloquial speech.

The Theoretical Phase

The descriptive and the explicative phases are necessary prerequisites for the beginning of the theoretical phase. In it hypotheses are formed, i.e. still unproved assumptions which are supposed to explain a given set of facts. Different hypotheses, possibly hierarchically interdependent, may form theories.

A theory consists of two parts:

a) The Basis

It rests upon the exactly defined statements provided by the descriptive and the explicative phases.

b) The Theoretical Part

There a logically consistent, non-contradictory , arrangement (explanation) of the basis by as simple as possible, i.e. economically, laws is attempted.

Sometimes the above three phases are preceded by a state that could be called

The Pre-Scientific Phase

In this phase man recognizes the presence of a problem by observing in his environment or by himself effects for which he wants an explanation. The present state of his science however, does not enable him to overcome this situation in an adequate manner. In this stage therefore pseudo explanations, perhaps in the form of anthropomorphisms or inadequate analogies, are too easily taken for granted. For this phase it is a characteristic attitude, appearing in many disguises, to ascribe the observed effects to the direct intervention of some hypothetical superior intelligence.

It would be presumptuous to deny the possibility of a direct interaction by god or other superior non-human intelligences in our world. In the concrete case however a suspension of judgement will probably be in general more appropriate with respect to genuine faith as well as scientific methodology, than to accept such an interaction prematurely as proved.

MATERIALS AND METHODS

Following are some of the aspects which are of importance for the documentation and interpretation of UFO reports:

Observed and Not Observed Activity

If all UFO events were only fables, prompted by a desire for publicity or bona fide hallucinations created by the psychic situation of the observer, then the number of actual events would be equal to the number of observations. The same would be true if UFOs were real physical phenomena, created by the psychic powers of the observer (ideoplasty). Real and observed activity would also be largely the same, if UFOs do indeed exist independently of the observer, but do for some reason follow the tracks of humans.

Contrary to the above is the hypothesis of chance obser-

vation, i.e the phenomenon has either no relation to the observer or that it does even avoid him. If this would be the case one would have to suspect a considerable amount of non-observed activity.

Other circumstances influencing the probability of an observation are weather, population density, habits of every day life etc.

Reported and Observed Events

The astronomer J. Allen Hynek, from 1949 to 1969 one of the consultants of the US-Airforce for the evaluation of UFO reports introduced the term 'strangeness' into UFO research.

The degree of strangeness in an UFO report is the greater the more elements the report contains, that defy explanation in terms of present knowledge. (4)

The author of this paper assumes, that the readiness to discuss an experience with others depends largely upon the degree of strangeness the observer himself assigns to his experience. The diagram (figure 1) assumes that within a given period of time the number of observed events is the same in all strangeness categories. The curve of those events is therefore identical with the horizontal line on top of the diagram (100%). The curve for the reported

events then cannot be represented, say, by the dotted line (10 - 13%), but rather by the bell-shaped distribution curve below, because we may expect the greatest readiness

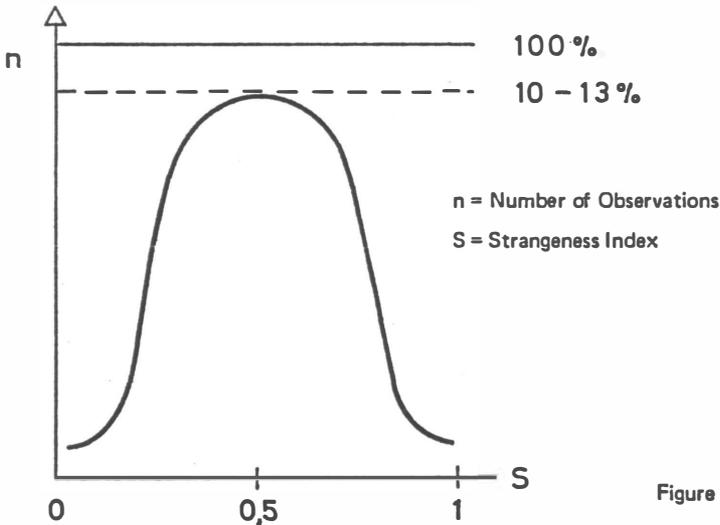


Figure 1

to report an observation in the middle of the strangeness scale. Contrary to a widespread opinion it seems that this readiness is rather low. Thus a considerable number of non-reported events must probably be taken into account. Already in 1952, Cpt. Edward Ruppelt, then head of Project Bluebook, suspected that at best 10% of all UFO observations were actually reported to the US-Airforce.

According to the Condon Report (1969) only 10 - 13% of all UFO observers report their experiences to other persons, police, military, press, radio, TV or private UFO research groups. (2)

This alone permits no conclusion as to the ratio within the various strangeness categories. It is however a plausible assumption that an event has to have for the observer a minimum of unusualness (if judged by his own average experience) so that he is motivated to report it at all. On the other hand the event must not be so unusual that the observer has to fear he wouldn't be believed or that he would render himself ridiculous by revealing his intimacy to others.

Published and Reported Events

In spite of the work of groups and individuals in the field-investigation, i.e. the gathering of UFO data by direct interview of the witnesses and investigation on the spot, our picture of the UFO phenomenon is still largely based upon reports from the media. Here we recognize the presence of many factors with a selective if not repressive effect: the news value of such reports, editorial policy, military and civil secrecy regulations, repression by other informations (sports, politics),

density of the communication network, circulation (newspapers), number of listeners (radio, TV).

The fact that UFO reports appear in the press often in times when there is little news from other sources, should be considered under this aspect. It doesn't mean that the events themselves were restricted to those periods or that the reports were invented in the editor's offices. It is however an indication, that this sort of news has only a chance to come through, when other informations are lacking.

Recorded and Published Events

By 'recorded' we mean events which become known to individuals or groups that are engaged in the investigation of the UFO phenomenon. Probably one must not regard this ratio with too much optimism. Before 1967, a search conducted for newspaper reports pertaining to the UFO wave of 1947 revealed a multiple of cases, than were known until then even among experts. (1)

The Causes of the Events

The true scene of UFO events could easily be distorted if we made the mistake to attribute all phenomena compiled under this collective term to one and the same cause. On

the one hand it seems that phenomenologically similar occurrences could be substantially of a very different causation (e. g. ball lightning and 'true' UFOs), on the other hand such a complex stratification is ascribed to the phenomenon, that doubts are justified, whether all those things have a common cause, even if they do appear in a temporal connexion.

Disinformation

The complexity mentioned above is at times interpreted differently: As a disinformation that has its origin in the phenomenon itself and the purpose would be to make it impossible for us to demonstrate any regularity in the diversity of the phenomena. And this, of course, implies that behind the phenomenon there must be an intelligent causation. Therefore it is necessary to use here that caution, which was already under discussion in the last paragraph of the introduction.

Probably it would not be too difficult to relegate the disinformation hypothesis - especially in its more extreme forms - to the persecution mania syndromes. Without going that far it has certainly to be considered as an indication for the helplessness with which we are facing the hair-raising absurdity of some UFO manifes-

tations. Certainly the disinformation hypothesis is not a new one. The idea that there are other intelligences or beings between god and man who are not necessarily benevolent and truthful for a long time has been a permanent constituent of the religious as well as the profane occult traditions.

Were the disinformation hypothesis really correct, then we had to apply the knowledge of game theory - if then the problem were solvable at all.

Such a situation would be similar to that parapsychologists are confronted with when they try to interpret the results of certain PSI experiments. (3)

One is tempted to add: If we are rather helpless with respect to the human unconscious if it happens to be our opponent, how easy would it be then for a really superior intelligence to play with us in the fullest sense of the word ?

The problem of a distinction between information and disinformation is by no means identical with the separation of signal and noise in communication systems. The shape of a noise impulse is different from the form of the signal - if sometimes only statistically. Therefore it is possible in a given case to specify a probability

whether or not an impulse constitutes noise or signal. Thus interference in communication signals may be suppressed.

The impulse form of disinformation however is, so to say, not different from information. Disinformation is essentially falsehood, lie and may be recognized as such only if:

- a) the disinformation is inconsistent by itself or
- b) in comparison to other bases of reference the deception becomes evident or
- c) the deceived realizes in the course of time, that certain informations have motivated him to actions that were disadvantageous for him.

Now a really superior intelligence would probably make no mistake with respect to the first two points. And it would look after its interest before we could profit from the third possibility.

The Random Sample

Because of the so called extrinsic factors mentioned before, which influence the generation and dissemination of UFO reports the material recorded and documented till now cannot be considered as a representative random sample taken from the total of events. The most comprehensive UFO

data collection is the data base UFOCAT. This American project was begun seven years ago. Presently UFOCAT comprises more than 70,000 entries of which a part is certainly redundant. The quality of the data differs because of their heterogenous origin. (UFOCAT: Dr. David Saunders, Center for UFO Studies, 924 Chicago Avenue, Evanston, Illinois 60 202, USA).

For an attempt to compute the influence of some of the extrinsic factors quantitatively see reference (7).

The Description of UFO Events

This is a problem of the documentation as well as of the field investigation. Certainly it would be absurd to restrict research a priori to things that are reproducible and reducible to quantities.

The mere fact that reports coming from different parts of the world since decades are surprisingly in agreement justifies the presumption that objective facts may be sought behind all this.

While instrument data from experimental series can be regarded as sufficiently defined because they originate from calibrated instruments and because all the marginal conditions of the experiments are usually properly described, this cannot be assumed in case of data furnished

by the instrument 'man'.

It is necessary to analyse the description given by the observer, to reduce it to exactly defined descriptors and to formalize it in a manner that makes it possible to store the data most economically. Analysis and formal rigour are the prerequisites for a quick information retrieval in case of need.

If hypotheses are to stimulate the attention of authoritative and competent scientists, they must be based upon analytically unobjectionable data. The prerequisite for this goal is a thesaurus comprising all the qualities that have been observed in UFO phenomena. Such a thesaurus would have to satisfy the following demands:

- a) Clear, precise and non-ambiguous definition of the various descriptors and their logical separation against each other.
- b) Scales for quantitative data with intervals (resolving power) corresponding to the actual precision with which the data can be gathered at all.
- c) By an appropriate classification the user must be able to find quickly all instructions for a given descriptor (user manual).
- d) It would be desirable to strive for optimal complete-

ness of the descriptors. The possibility to add new ones should be provided for.

The last point needs perhaps a remark. All hitherto existing UFO data bases consider (just because of economical reasons) at times only a relatively small, limited number of descriptors. Quite naturally the descriptors chosen are those believed to become significant some time or other in the future. Therefore such limited data bases include already a hypothesis about the phenomenon.

Compared with this the ideal data base would be 'unlimited', neutral and free of any hypotheses. That means that descriptors must be provided for everything that can be stated about the phenomenon, the observer and the circumstances of the event. This of course implies a considerable expense. But such an unlimited UFO data base would have great advantages:

- a) it will serve interdisciplinary research far better just because all possible aspects of the phenomenon are considered,
- b) increased flexibility with respect to quickly changing demands as this is often the case in scientific work,
- c) because the data base is free of hypotheses it is more convincing,

d) it is possible to describe the phenomenon in all its aspects, in its whole bandwidth so to say, regardless of our momentary insight in the causal interdependency of its various qualities, and to preserve it for future studies.

RESULTS

The fact, that essential problems of the documentation and the interpretation of UFO reports are admittedly not yet solved, but at least recognized, as well as the various projects for UFO data bases that have been started (partly by using computers), justifies the assumption that at least a small part of UFO research has entered the descriptive phase and has therefore to be considered as a scientific discipline.

DISCUSSION

One cannot deny however, that a large part of UFO research is showing symptoms, that could be typically for the pre-scientific phase. An indication for this is the fact that in publications on the subject the extraterrestrial hypothesis (ETH) dominates with the claim of a definite solution, while alternative explanations are

not adequately considered (a meteorite has also an extraterrestrial origin - in ufology the ETH always implies an intelligent causation too).

If the territory of a state has been flown over by an unidentified plane, one will first try to find out the type. From this it is possible to deduce the purpose of the mission (e.g. photographic or electronic reconnaissance). From the known range of this type of plane conclusions about possible bases may result. In such a case a hypothesis about the origin of the plane may shorten the whole inquiry (i.e. be of a heuristical value) because one knows something about the technological abilities and the strategic intentions of the potential countries of origin.

In case of the ETH we know virtually nothing about the hypothetical extraterrestrial place of origin. Therefore the ETH can only be verified by elimination of all other possible explanations (unless we get hold of an UFO). For this process of elimination however the ETH itself is unnecessary.

The efforts to establish ufology as a recognized field of interdisciplinary research have probably been impeded by the fact, that right from the start (1947) the UFO pheno-

menon was widely discussed under the aspect of the ETH only. The American historian Jacobs once regarded the ETH flatly as a sort of trap into which fell - starting with the US-Airforce - one scientist after the other. He called the attempt to explain the origin of the phenomenon before its anomaly could be proved, as a logical leap. (6)

Hynek too in his criticism of the Condon Report has emphasized that the ETH does only confuse the problem. The primary question is - according to him - not the validity of the ETH, but whether or not the UFO phenomenon can be - independently of its origin - a legitimate subject for a scientific study. (5)

Recently it looks as if the ETH should become less predominant in the future. It remains to be seen whether this trend will continue.

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This paper has not been prepared especially for UPIAR. It was already published in German language in «GRENZGEBIETE DER WISSENSCHAFT», 26. Jahrgang, 1977, Heft 1, Resch Verlag, Maximilianstrasse 8, Postfach 8, A-6010, Innsbruck, Tyrol, Austria, under the title «WO STEHT DIE UFO-FORSCHUNG HEUTE?».

Publisher and author are grateful to Prof. Dr. Andreas Resch for his permission to publish it in UPIAR.

UFO AND ASTRONOMY TEXTBOOKS

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Until very recently no reference to UFOs was to be found in any respectable scientific journal nor was the subject even insinuated in textbooks, lest the tender minds of the new generations of students could be poisoned with unorthodox questionable concepts.

However, a subtle change in the situation is taking place, and although the journals, mostly controlled by the old guard scientific establishment, have still to accept the reality and respectability of the UFO phenomenon, the topic has been openly mentioned in several recently published books aimed at introductory courses. The treatment is almost apologetic, as if the authors had been forced into it by the circumstances rather than by choice, and undoubtedly negatively biased as a necessary measure to keep one's reputation. We are told there is no such thing as the UFO problem, but nonetheless a considerable effort is invested to convey this point with arguments that on occasion are not very scientific. This is, of course, nonsense, as it is not possible to prove the lack of reality of a non-existent phenomenon, but on the other hand is a sure indicator of the increasing awareness of the scientific community at large that there is an unexplained mystery that defies analysis. And since

scientists are by definition curious, more and more of them have looked into the now rather extensive literature, and found that, contrary to their expectations, there is something there that excites the inquisitive spirits. We have too many unexplained reports, too many marks left on the ground, too many photographs, too many well researched cases that cannot be set aside. I maintain that only the uninformed can persist in the dogmatic attitude that "since there cannot be UFOs, ergo, there aren't." But to have a change of heart, and to risk one's reputation are two different things, and I suggest that those feeble attempts to discuss the UFO phenomenon without a commitment just disguise the innermost convictions of those cautious enough not to come out into the market place until they have some reassurance about the mood of the mob. How, otherwise, can one explain all those pages devoted to a topic in which the author not only doesn't believe, but, he hastens to add, is pure imagination?

Three new astronomy textbooks fall into the scope of these considerations. The first one, CONTEMPORARY ASTRONOMY, W.B. Saunders and Co., 1977, by Dr. Jay M. Pasachoff of Williams College, dedicates four pages to the UFO phenomenon. (Section 19.5, pp. 431-435). The discussion is deplorable to say the least, and would indeed poison the minds of the students, if such a thing were possible in this time and age. Not only is the bias showing, but also the author's total ignorance of the subject is evident. Some of the misrepresentations are so far out, that I cannot refrain from pointing them out in some detail:

- (1)...*most of the sightings of unidentified flying objects that are reported can be explained in terms of natural phenomena.*

True, but the residue after conventional explanations have been ruled out is not negligible, and cases keep occurring at the rate of about 10 a month in the U.S.

alone. The total of unexplained cases is in the order of several thousands, and typically, those are the cases that when studied in depth, defy all the usual explanations.

(ii) *After exhaustive analysis, the Condon group was able to account for these cases on the basis of more commonplace effects.*

It is clear that the author has never read the Condon Report.¹ The analysis of the Condon group was not even superficial: out of over 12,000 cases available to them, they examined only 90 cases, several of which had already been explained by the Project Blue Book in terms of conventional objects. Even so, and in spite of all the scientific effort, the Condon group was unable to explain 25 out of those 90 cases, i.e., 28%!

(iii) *Almost every professional astronomer feels that UFO's can so obviously and completely be explained by natural phenomena that they are not worthy of more of our time...*

Totally false. As early as 1952 Dr. Hyneck made a study by personally interviewing 40 astronomers of international reputation.² In his results (and keep in mind he was at that time a consultant for the USAF), he reported that at least five of them had made sightings of one sort or another. A more recent survey by Dr. Peter Sturrock³ indicates that 5% of the 1356 members of the American Astronomical Society which returned his questionnaire have experienced sightings that they could not explain.

(iv) *...few unexplained reports remain...*

There are not so few, but several thousands, and in addition, the more those cases are investigated, the better they become.

(v) *Scientists have assessed the probability of UFO's being flying saucers from other worlds, and have decided that the probability is so low that the possibility is not even worth considering...*

This is a gratuitous statement since as far as I know, no such study has ever

been made. To present this to the readers as a scientific truth is a dogmatic and dangerous posture.

(vi) we have so many other, simpler explanations of the phenomena that are reported as UFO's that we apply Occam's razor...

But that is the point. We don't have a simple explanation of all or part of the data that could call for the use of Occam's razor. In fact, we do not have any explanation that would explain all the information available. Precisely, this is the central problem of Ufology, i.e., the lack of a paradigm which will tell us in which direction to go.

All the above is unfortunate, because although his readers--probably better informed--will laugh at this part of the book, they might tend, unfairly, to generalize this opinion to the rest of the text, which is serious and rather well done.

The second book I would like to discuss is INTRODUCTION TO ASTRONOMY, by Dr. Oriti and Dr. Starbird, Glencoe Press, 1977. Here, the whole Chapter 18 (pp. 327-341) is dedicated to flying saucers, to be distinguished, we are told, from UFOs. This is already confusing, because although it is true that all flying saucers are UFOs, and not all UFOs are flying saucers, it doesn't follow that flying saucers are "extraterrestrial spacecraft." However, the treatment in this book is more sophisticated and rational, and the old arguments to deny the possibility of extraterrestrial crafts operating in the atmosphere are rehashed. Next, the screening processes that transform UFOs into IFOs (identified flying objects) is described accurately and in detail. Then, the facade crumbles. Instead of telling the reader that this elimination process is the usual method of UFOLOGY, and that after completion a large residue of unexplained cases still remain, and that those stubborn cases that become less

and less explainable as analyzed in depth are the ones that form the core of the UFO phenomenon, the authors change gears and launch an attack on pilots. They are not qualified, we are told, to judge speed and distance in the air (who is qualified then?), and they are prone as anyone to take Venus or some other star, for a UFO. I was very glad to be given this piece of intelligence, since clearly with those gentlemen at the controls the fact that mid-air collisions rarely occur is a miracle. Indeed, they might be happening all the time, and the only safe thing is not to travel by plane anymore! But the parting shot (p. 34) is delightful: "...there is no proof of the existence of extraterrestrial spacecraft, or flying saucers...." and without proof "a scientist cannot believe in their existence." It is obvious that equating flying saucers to extraterrestrial spacecraft is clouding the issue. Practically all UFOLOGISTS will agree that there is no proof that UFOs are extraterrestrial, since this possible origin is one of the many theories. But all of them will agree that there is something that can be photographed, that leaves marks on the ground, that affects people and animals, that has been seen by literally millions of witnesses and described in far apart places of the earth in identical terms. All those events that conventional science cannot explain at present--but undoubtedly will in the future--form what is known as the UFO phenomenon, and its reality is not a question of belief, but of evidence. And as for evidence, if the testimony of two witnesses is enough to hang a man, obviously the evidence collected for UFOs is enough to hang up the skeptics. Besides, scientists do not "believe" in the existence of physical objects. Science is not a question of faith or dogma, and the use of the verb "believe" reveals only the absence of a scientific mind. Scientists gather information--whether about UFOs or elementary particles--and arrive at conclusions from that infor-

mation. The only difference between these topics is that UFOs have not been "respectable" until very recently, although we have more information about UFOs than we have about some of the elementary particles.

A more balanced and objective treatment is presented by Walter H. Hesse in OUR EVOLVING UNIVERSE (Dickenson Publishing Co., 1977). Although the photograph on page 8 of the McMinville, Oregon, UFO is incorrectly printed left to right, his historical description of the UFO phenomenon is fair, and his evaluation of the Condon Report is unusually accurate. The only questionable paragraph is when he says: "...No responsible scientist believes (sic) that UFOs are of extraterrestrial origin, because there is not a shred of evidence to support such hypothesis..." Indeed, there is no more material evidence to support the ET hypothesis than there is to substantiate the existence of quarks, but the fact remains that this hypothesis seems to fit the mountain of information accumulated on UFOs better than any other hypothesis proposed so far. To be interested in UFOs and consider that the ET hypothesis is a definite possibility *does not* make a scientist irresponsible!

-----At any rate, we must be grateful to those authors that have introduced the UFO topic into our textbooks, despite their unrevealed intentions and their blatant mistakes. It is a step forward, and the history of science teaches us that once the step has been taken it is impossible to take it back. Hence, we can only expect that in the future more and more scientists will speak their minds, and that Ufology will be accepted more and more as a respectable interdisciplinary endeavor.

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Jean Claude BOURRET
“Le Nouveau Défi des OVNI”
Editions France-Empire
Paris 1976 pp. 393 Fr. 41.50

The expectations of people seriously interested in ufology in these last years have been finally fulfilled by the issueing of valid books on the argument.

Now we can add to this “Le Nouveau Défi des OVNI” (The new challenge of UFOs) edited by Jean Claude Bourret.

Why do we consider this book important? For different reasons. First of all, because it confirms that to the *Gendarmerie* (i.e. an official government organization) has been given the order to investigate, and therefore to make surveys on the accidents involving UFOs. This is very important, if we think that in European countries the phenomenon usually is regarded as nonsense.

Besides that and perhaps more interesting, this book includes some important papers written by professional scientists.

Let's run now briefly through the most interesting parts of the volume.

The case-histories he examined belong to the file gathered since 1970 up today by the *Gendarmerie* and reports will made surveys, even if information we can take from them, does not seem to have the quantitative data which are often necessary for a statistic handling of information.

In any case, the great importance of this book is linked to the fact that finally the *Gendarmerie* admitted officially its duty, if not interest, towards UFO phenomenon. The cases taken into account cover the large variety of UFO case histories, including apparently false ones.

The most interesting part of the book is the second one: some studies and researches by scientists are reported.

We find two Poher papers, formerly Chief of Scientific Systems and Projects Dept. and actually responsible of GEPAN (the organization to which the French government devolved the scientific study of UFOs). The first one refers to the analysis of B47 case which in 1947 has been followed for more than 1300 Km. by a UFO, while the second basic paper focuses, with statistic methods, on the UFO objective reality as an anomalous phenomenon really present in the atmosphere and with its own characteristics which will undoubtedly permit to recognize it as an anomalous phenomenon.

An article by SVEPS (Société Varoise d'Etudes des Phénomènes Spatiaux) follows and it shows an interesting project of an automatic station for the registration of various physical and meteo parameters during UFO sightings.

We find then a paper of the astrophysicist Pierre Guérin speaking about the basic problem of proof in ufology.

Analyzing the various existing proofs, in case one needs scientific ones in the real meaning of the term 'scientific', it is clear that it should not be easy to gather them, but if we think to witness-evidences (this method is also utilized in science when nothing better is available) they are so numerous that bring to consider the UFO phenomenon more than acceptable and suitable to be studied by science.

Finally, there is a paper by Jean Pierre Petit of CNRS who, starting from what witnesses reported in these years on UFO phenomena, tried, by using our physic laws, to justify through magnetohydrodynamics some manoeuvres and UFO shapes, plus the propulsion and some effects linked to them. This has not been done only at theoretical level, but in cooperation with astronomer Maurice Viton, Petit started to make real experiences on little models. There is a brief appendix, linked to this paper, concerning the plasma physics utilized.

We conclude: this book is really interesting. We recommend our readers to read it carefully.

Roberto Farabone

1973 - YEAR OF THE HUMANOIDS

by David Webb. Second Edition.

Report No. 4

Pp. 110 (Center for UFO Studies:

Evanston, 1976) \$ 7.00

The publication in 1967 of the classic *The Humanoids* of Michel, Vallée, Creighton, Lorenzen, Ribera, Hanlon, Powers and Bowen, established the topic of CE III as a field of study in its own right, a field since then intensively cultivated. Webb's technical report will be of great value to the student of close encounters of the third kind (CE III). David Webb is with Ted Bloecher one of co-chairmen of MUFON's Humanoid Study Group.

He is also actively involved with Hynek's Center for UFO Studies.

For the first time a qualified searcher has brought together a concise but comprehensive one-volume reference work dealing with the extraordinary UFO/humanoid wave occurred in the fall of 1973 mostly in the southeastern part of the United States. The first edition — published in the same year — immediately attracted attention and comment, as much for the novel problems it raised as for the particular approach that the author was concerned to use in his survey. This book falls naturally into five chapters followed by an abundant and accurate bibliography where sources of all 66 reports abstracted in the text are given. The omission of an index is, however, a serious defect. The author is fully aware of tremendous difficulties stemming from an in-depth study of this bizarre fraction of UFO reports.

Our almost complete dependence on the eyewitness (es) as the *only* instrument in the information gathering process, particularly in CE III research lays bare the pre-paradigmatic nature of the ufology in a scientific context.

The originality of Webb's approach just starts from this realization when in the introduction he outlines a major goal of his work: "to suggest methods for studying humanoid reports on a more objective basis than previously has been attempted". Reports data are displayed in two main forms: a narrative one in which Vallée guidelines from *Passport to Magonia* are adopted and a computer-compatible one where each single case is coded by 20 categories. This seems a good system looking for a substantial improvement in the quantitative analysis of CE III reports which present a very high degree of Strangeness and therefore a potential scientific interest.

The apparent Cartesian attitude of the author seemingly turns to sheer empiricism when he finds himself facing the big problem of reliability assessment of humanoid reports. In fact no precise formulation of numerical values is supplied: the author explicitly confines himself to a general discussion of a double digit weighting system where reliability coefficients of the report and the investigation are *subjectively* assigned without referring for example to some equation (1).

The reliability assignment represents perhaps the crucial point either in CE III studies or in UFO phenomena as a whole. The development of new techniques and their subsequent standardization is what we really need now.

The chapter on abduction cases, where the witness and what he/she experiences are face to face for prolonged time, reveals itself as one of the most fascinating sections of the book. Eight abductions were reported in the course of the 1973 US wave. Here they are carefully discussed together with alleged electromagnetic effects which often reportedly affected witnesses vehicles. A long descriptive account of the characteristics of the humanoids can usefully be read with the fourth chapter even if the *éminence grise* of the extraterrestrial hypothesis joined to the danger of the anthropomorphism flutter between the lines...

The volume concludes with a chapter covering possible correlations between different

waves. Data are variously graphed showing — as the author says — “the remarkable temporal similarity of these two important waves”, namely the 1973 US humanoid wave and the 1954 French humanoid wave. Webb cogent criticisms about some Vallée obscurities (e.g. the vague definition for a Type I report: “the observation of an ‘unusual object’ on or close to the ground, maximum at tree height”. Maybe a strange fly seen upon the garbage amounts to a Type I report?) are beneficial especially in UFO studies where semantics has played a minor role in the past.

This book has been nicely laid out and the figures are clear. It is well written in a lively style, and those who are willing to work hard should find it very helpful. Last but not least the Center for UFO Studies has to be congratulated for having produced this concise and stimulating text which I foresee will become the best introduction to a systematic research of CE III data.

Francesco Izzo

1. *Olsen T.S. (1966). The Reference for Outstanding UFO Sighting Reports (U.F.O.I. R.C.C. - 6601: Riderwood), 4-1 / 4-7.*

Jacques SCORNAUX et Christiane PIENS

“A la Recherche des OVNI.

La vérité sur les soucoupes volantes”

Bibliothèque Marabout

Verviers (1976) pp. 237

Here we are again with another book on UFOs. Does this show some advantage, some peculiar characteristic which makes it different from the various titles that in a large number of languages appeared in the last years?

I think that the answer must be considered in the affirmative.

Written by two young researchers, Christiane Piens et Jacques Scornaux, this book has above all one work: it permits to anybody, even to those without scientific methodologies knowledge, to start to understand how science acts when facing new problems.

We can therefore see that books on UFO issued in the last years could be divided in two big categories: those of divulgation trying to examine the case histories gathered since '47 up today or even since before that time, from the Bible period, putting no interest in the scientific approach; the second category is represented by books gathering lectures

papers: in this case, the knowledge of the method and scientific construction were considered known.

On the contrary, in this book, the writers try to point out the importance that the reader must give to methodology careful and wary used by science.

In various parts of the book the writers insist on the “*Occam’s razor*” principle, or, less picturesquely, on the principle of conceptual economy, according to which, while performing a research, the scientist meets an ensemble of data whose interpretation does not match the schemes and categories already met, the researcher must not immediately create a theory *ad hoc* to catalogue the new data, but must verify if, modifying slightly the already known hypotheses and postulates it will be possible to make a point in the interpretation of phenomena which have been considered anomalous. Focusing on this principle throughout all pages, the reader proceeding step by step to chapters examination, will create to himself a “*mental habit*” which will bring him ultimately to the non-acceptance of the introduction of hypotheses unless they are adequately justified.

Going through briefly the various arguments reported, we can see how the reader is conducted by hand through the presentation of phenomena in their characteristics. We find out therefore the different UFO phenomena subdivided according the Hynek classification, the problem of “*humanoids*”, the evidence given by traces and physics interactions.

A chapter is introduced then, and it deals with the possibility and the opportunity to study these phenomena with the proper science methods, chapter which dominates with its spirit, as already said, over all the volume.

The book takes into consideration and criticized the various hypotheses for the interpretation of the UFO phenomena and here we have the weak point of the book: while trying to adhere to the principle of conceptual economy, the authors sympathize with the extraterrestrial hypothesis of UFO, and the latest chapters try to support it.

Let’s see then how the authors answer to the main objections made towards this hypothesis, while trying to remain linked to the “*Occam’s razor*” principle, we can see how it is possible to consider the theoretical possibilities of other beings different from man both for chemical constitution and physiological/intellectual.

They hazard then an interpretation of the apparently strange acting of humanoid entities and examine the claimed contacts with those entities, both in CE III normal terms and “*contactees*” ones. They try also to enter the organizations of various committees and organisms which should face seriously UFO problems, focusing particularly on the Blue Book project, the Condon Report and post-Condon up to 1974, foundation year of Center for UFO Studies.

The volume proceeds analyzing strange phenomena and correlations in ancient years which recently has been tried to identify as UFO, and they end by going an analysis of the possibility of mixing different planetary races considering particularly the famous Villas-Boas case.

As all other books on the matter, they end up expressing a wish for a better and deeper study and interest towards a phenomenon which could bring to a survey also towards arguments already accepted by our science and which could take out from these researches a new vivifying spirit.

Roberto Farabone

**OVNIS: EL FENOMENO ATERRIZAJE
(UFO's: The Landing Phenomenon)**

**Vicente-Juan Ballester Olmos
Plaza & Janés (1977)
Barcelona, Spain**

Among the enigmas and the mysteries the modern world offers to us, none is stranger than the phenomenon of UFO landings. It consists in the frequent report, by people in all countries and in all professions of various kinds of machines and craft seen on the ground or close to it, often associated with extraordinary creatures.

There have been several books devoted to this fascinating subject, but authentic documentation is very hard to find. Here we are privileged to read a complete, well-researched description of all aspects of the phenomenon by a careful investigator who has sifted for us through thousand of cases and has eliminated the trivia, the hoaxes, the misidentifications; what he delivers to us is the UFO mystery in its purest form.

This is not a book by a sensational writer or a superficial journalist. It has been researched for many years by one of the most careful specialists of the question in Europe. It deserves the attention of all readers and the scrutiny of physical scientists, social scientists and scholars of all disciplines. The amount of documentation amassed by the author — mostly first-hand testimony — is truly enormous! I can personally verify this fact, having had the privilege to work closely with Vicente-Juan Ballester Olmos since his first efforts to classify and catalogue the events he was studying.

I was working at the time at Stanford University, and our correspondence has taken the form of an exchange of information and ideas, in the course of which he sent me the full description of many cases in Spain and Portugal that were previously unknown or un-

published. The depth, variety and sheer dramatic value of those events will no doubt be a revelation to many readers who only know of “flying saucers” through books describing the sightings in the United States or in France. The mystery, as Mr. Ballester-Olmos shows so eloquently, is not limited to such regions of the world, but it reaches into small towns and villages, in the Spanish countryside and in the hills of Portugal.

Unidentified Flying Objects are not reserved to astronauts or American rocket experts; in fact you, the reader of this book, are much more likely to see this phenomenon as you drive home in the evening than a scientist observing the stars through a telescope. If you do come across such an object at a turn of a familiar road, the information contained in this book will be very valuable. But it will make an impact on the way you look at the world even if you never have such a personal experience.

In the last 10 years our understanding of the UFO mystery in Europe has progressed immeasurably. Much of this progress must be credited to the work of research, compilation and analysis performed by Mr. Ballester-Olmos. For his book is not limited to a listing of cases and a description of their most fascinating aspects: he goes on to present an impeccable *analysis* of these cases and to draw some hypotheses from it regarding the nature of UFOs and what they have in store for us in the future. The author has succeeded in making his statistical discussions simple to follow. He describes his work with objectivity and clarity. As you read his book, you will begin to feel the contagious excitement of the research he has done in one of the greatest unsolved mysteries of our time. It is a rare treat, the opportunity to share in the and joys the puzzles of a true scientific adventure.

Jacques Vallée

LETTERS TO THE EDITORS

The "Letters to the Editors" section of UFO PHENOMENA provides the scientific community and UFO amateurs with a central forum for debate and comment, criticism, both favourable and otherwise, of published works (not only in UFO PHENOMENA) are which are welcomed, as are announcements and brief reports of conferences, workshops, summer schools and meetings.

Eventual fellowships in the field of UFO phenomena studies can also be announced through this channel. Other possible subjects for this section include "appeals for help", e.g. requests for information on a particular (technical) problem.

COSMIC CONCIIOUSNESS CONDITIONING: SOME REMARKS

Dear Editor:

I am wondering how Dr Leo Sprinkle, in his article (UFO PHENOMENA Vol. I, No. 1 1976, pp 56-57) seriously considers "hypotheses" 7 and 8 about the nature of UFOs! To speak of "bioenergetic field" and "psychic force from the collective unconscious" is simply ludicrous both from the biological and the physical sciences. It discomfortingly reminds me of the pseudo-science of cultists and leaves me with an uneasy feeling of doubt.

To brainstorm about UFOs and being speculative is normal practice for every good scientist "behind the scene", may I say, but, presenting ideas which are less than speculative... is not serious job.

If UFOlogy wants to gain credibility, it is a necessity of eliminating such blatantly nonsense. Otherwise, uninformed readers might rightly feel like Professor Leslie Audus, when reviewing the tales of the best-seller "The secret life of plants" in New Scientist (17 October 1974, Roots of Absurdity, page 207)

"I read this book very carefully, but with a growing incredulity until when about four-fifths of the way through, I met the chapter on the transmutation of elements by plants and their ability to avoid the second law of thermodynamics. This, the ultimate absurdity, which would make a nonsense of most of modern-day research on plant physiology, was the last straw for me. I have not read further. To me, as a scientist, who has spent much of his working life trying to put across the vital importance of plants to man (...) this book is a tragic mistake on the part of the publishers...

*Claude Rifat
Geneve-Suisse*

Thank you for sharing the letter from Dr. Claude Rifat with me. I appreciate the opportunity to respond to his questions and criticisms of the article: "UFO Activity: Cosmic Consciousness Conditioning"? I hope that my comments are helpful in clarifying my views about the issues raised by Dr. Rifat. First, may I restate the purpose of the article: to engage in "exhortation" and "speculation". In presenting the tentative set of hypotheses about UFO reports, I described those which appeal to me.

I recognize the fact that the concepts of "aura" or "bioenergetic field", and "psychic forces from the collective unconscious", do not fit within the traditional scope of biological and physical sciences. However, experienced UFO investigators are aware of the paranormal or psychic aspects of many UFO experiences; thus, UFO investigators must either ignore those UFO reports, or they must turn to non-traditional methods of investigating those UFO experiences.

*I believe that Clark and Coleman are serious writers and experienced UFO investigators (Clark, J., & Coleman, L. *The unidentified: notes toward solving the UFO mystery*. NY: Warner Paperback Library, 1975). I tend to doubt their hypothesis that UFO experiences are manifestations of psychic forces from the collective unconscious of humankind; however, that hypothesis is no less acceptable than the hypothesis that UFO activity is a form of cosmic consciousness conditioning.*

The hypothesis by Dr. P. M. H. Edwards (the "aura", or bioenergetic field, of the UFO witness is different from the auras of other persons) has the advantage of being testable — if one accepts the possibility that "sensitives", or persons who are known as paragnosts, can "see" or sense the auras of other persons. For example, one neuro-psychiatrist, Dr. Shafica Karagulla, has obtained evidence from medical laboratory tests which supports the claims of her subjects that they can "see", and diagnose, the bodily difficulties of patients who are

waiting for medical examinations. (Karagulla, Shafica. "Interview". *Psychic*, July/August 1973, Vol. IV, No. 6, pp. 6-11).

Thus, the hypothesis by Edwards could be subjected to empirical evaluation, if a skeptical and enterprising (wealthy?) UFO investigator could bring together a group of persons with these psychic abilities, so that they might "see" and compare the auras of UFO witnesses with the auras of other persons.

I appreciate Dr. Rifat's concern about the credibility of Ufology; however, we UFO investigators face a harsh reality when we recognize that the past 30 years have not yet produced a theory which can account for all of the varied facets of the UFO phenomenon. As we continue to process UFO reports within the procedures of the "normal" sciences, can we also explore the procedures of the "new" sciences? Does credibility refer to the believability of the evidence for UFO activity? Or does credibility refer to the believability of UFO investigators?

I am not certain that I can follow the view of A. Michel: "In Ufology, the rule is to think of everything and to believe nothing". However, the view is noteworthy, in my opinion because we UFO investigators can help our own credibility by emphasizing the tentativeness of UFO evidence. Evidence may change and investigation may change). I am attempting to move toward this guideline when I offer the tentative set of hypotheses which appeal to me. However, I recognize the strong likelihood that this set of hypotheses may be incomplete or inadequate.

If Dr. Rifat has a tentative set of hypotheses which he considers is a possible explanation for the physical, biological, psychological, and psychic effects of UFO phenomena, I sincerely hope that he is willing to share that information with other UFO investigators.

Dr. Rifat ended his letter with a quotation; I should like to end this statement with a quotation from a manuscript entitled, "Let the Dragons Speak", which I recently received from a writer, George Andrews. I recognize the possibility that the statement is wild, weird, and/or wrong; however, I ask myself — and any other UFO investigator — "What if the statement were true"? Then, like Immanuel Kant, we might wish to ask ourselves these questions about UFO research: "What can I know? What ought I to do? What dare I hope"?

George Andrews writes as follows:

"Here is what someone who doesn't even claim to be a (UFO) contactee yet practices the most extraordinary automatic writing has to say. The following excerpts are taken from Thomas Bearden's "Free Stream Creation":

"the real reason for our contacts directly with human specimens is that from time to time it is necessary to do certain measurements to refine our operational methods and insure the safety of this prenatal species. Yes we must continue to trick you in this writing for it seems to be the only way we can bypass successfully the censorship of your conscious... What we are doing is not really mental, but it has mental effects that result several harmonics up from where we are working. We are generally preparing humanity for

a great shift in consciousness, and this preparation is necessary to prevent the mancell from "burning out" or shorting out for the final connection. It is analogous to turning a baby in the womb to the correct position to prevent a breech birth...

We are operating through a severe force screen to prevent blasting out the neuronal circuits with bioenergy. If the receiver instrument is too blockaded by solidified ideas, of what you call a scientific or logical nature, it is not possible to penetrate through the blocks/locks unless much greater power were used in the touch. And more power would simply fuse the circuitry and render it useless. So most scientists are not reachable until they themselves gradually reduce the strength of the blocks. This is of course gradually beginning to occur... But many probetouches do go into resonances of all sorts — an instrument resonates to its own peculiar resonances. Thus when we "stroke" an instrument, we have little or no control over the overtones impressed on the signal, and how distorted the signal comes out. It is entirely possible to get an individual who responds by thinking or "realizing" that he is indeed the Archangel Michael. Indeed, in his own peculiar reality construct, he is what he thinks he is. But of course that is a thought form construct, and that is a totally different thing from what you call reality... Because of the large number of structures and blocks that most humans have, you will get mostly signal buried decades down in the noise. That is, you will get a lot more noise than signal... We are demonstrating to you (it is one form

of our communication) a science that is just a little beyond where you are now, but one at a level you can reach if you try very hard. Thus our ships exhibit to you as solid 3-d matter, then turn into a 3-d right-angled space to become to you photonic (glowing balls or shapes of light), and then make another rightangled turn to either rematerialize to you or to totally vanish, depending on the dimension we pick to make the turn in... It makes good sense in 6-d, but no sense to you in 3-d... Your 3-d is simply one cross-section of a 6-d world. In a 3-d cross-section, "we" can be we, it, or nothing at all. In fact, "we" can be "you" yourself, or all of these at once, or none of these at once...

In one 3-d intersection of our holographic multidimensional nature, it is like the collective unconscious of all humanity acquiring a collective conscious instead of a multitude of fragmented individual little consciousnesses.

In one sense we are simply your own individual subconscious. In another sense we are the unconscious of the entire human species, collectively, as one unconscious. In another sense we are the unconscious of the entire biosphere. And yet in another sense we are "extra-terrestrial being (s)" contacting humanity and communicating with it. And in another sense we are God communicating directly with Man. Each of these is an intersection, and each is true within its own intersection. Yet each is only part of the truth, not the whole truth. Yes, like the five blind men and the elephant, the parable... You are literally children playing with mudpies and starv-

ing, under the unseen bounty of a table containing a great feast... At present you are all quite blind. Even the best of you, even the most accurately visionary, from a multidimensional point of view is quite erratic and rather unpredictable. You are really much like very crude cat's whisker radios, noisy, not of much signal strength, not of much power. But these words are not intended to be derogatory at all; they are intended to clarify the situation. You are on your way, of course, to changing all that. But you must not be arrogant and proud of your really very small 3-d accomplishments. Neither must you be dominatedly bowed; there are no "masters" and there is to be no domination. There is instead to be the birthing of a new infant, and then its growth and maturing. In that process, you will acquire multidimensionality. When you are ten dimensional, you will figuratively 'smile' at all this; but it will be something very strange indeed, a 10-d smile".

Sincerely,

R. Leo Sprinkle

UFO RESEARCH IN ITALY

Dear Editor,

Roberto Doretti's open letter (UFO RESEARCH IN ITALY) appeared in the first issue of UPIAR underlines the

fact that UFO research in Italy conducted by official scientific organizations (even military) can be thought as nothing because of Italian Authorities' particular intellectual myopia together with their typical opportunism and bureaucratism. It is a sad reality.

As far as serious civilian research in Italy is concerned, its supporters' generally poor technical and scientific preparation and their usual depending on some editorial publishing house interested in other subjects (such as parapsychology, space archaeology and so on) and looking for sensation to be sold to the general public created a situation of "impasse". According to Mr. Doretti in Italy an ACTIVE EXAMPLE able to perform a more correct and omogeneous way of research with a common trend, purpose and methodology is necessary. This civilian "élite", free from the influence of any publishing house, ought to show the way to serious UFO research in our Country and interest Italian Authorities and the lazy Establishment as well.

Our question is: *do such an ufological "élite" exist in Italy?*

As I quoted in my article "THE ITALIAN SCENE" in Vol. 16, No. 3 (May-June 1970) of Britain's FLYING SAUCER REVIEW, in his well-known ANATOMY OF A PHENOMENON (published in 1965) Jacques Vallée wrote as follows of UFO research in Italy: "In Italy, the few groups of enthusiasts we know of are not worthy of mention; their only activity is merging one into the other every two or three years". But what about today?

Our answer is: *yes, this ufological "élite"*

does exist. And it is part of Italy's CUN (formerly Centro Unico Nazionale and now *Centro Ufologico Nazionale*), a non-profit research organization founded in 1965, organized in 1966 and established in 1967. CUN had a pre-eminent rôle in the development of UFO research in our Country, and also abroad its activity is well-documented, from the quotations in Lynn Catoe's UFOs AND RELATED SUBJECTS: AN ANNOTATED BIBLIOGRAPHY to the references in THE APRO BULLETIN, Britain's FLYING SAUCER REVIEW, France's LDLN and PHENOMENES SPATIAUX, Spain's STENDEK, Belgium's INFORESpace, Germany's UFO-NACHRICHTEN, Denmark's UFO-NYT and so on, as well as the mentionings in their works by well-known authors like Antonio Ribera, Raymond Drake, Ion Hobana, Henry Durrant, Robin Collins, Pierre Delval, Larry Kettelkamp, Adolf Schneider. *NOTIZIARIO UFO*, CUN's official publication, was Italy's only ufological magazine until 1971, the year in which an Italian publishing house created a monthly popular publication devoted to mysterious subjects, IL GIORNALE DEI MISTERI.

It was just the beginning. In 1972 three more magazines of this kind were issued (GLI ARCANI, SCIENZA E IGNOTO and PIKAPPA) and their start success caused in 1973 a logical and deep crisis inside CUN, who began losing members and supporters as a result of its inadequate possibilities in the editorial field (NOTIZIARIO UFO, bi-monthly, had only its 25 mimeographed pages and a

limited circulation to oppose these four popular, cheaper and professionally printed and illustrated magazines). In this situation, even the 1973 UFO flap in Italy, widely publicized by mass media, could not be faced satisfactorily by CUN, and so Centro Ufologico Nazionale's leaders had to decide its future policy under these new circumstances. What to do? To continue and to improve its non-profit and high-quality activity in silence and in co-operation with UFO researchers abroad leaving *de facto* Italy's UFO scene, quite conquered by these unexperienced but popular newcomers? Could CUN run the risk of losing the control of Italian ufology? This was our dilemma.

I am one of those CUN Board members who said "no". We had to fight our battle in Italy first.

On the contrary, this policy was followed by a few colleagues who, in the hope of maintaining a more direct and stimulating dialogue with foreign ufologists, preferred research to organization and correct vulgarization against sensationalism, and so left CUN and formed a committee they called CNIFAA (Comitato Nazionale Indipendente per lo studio dei Fenomeni Aerei Anomali). Considering this choice dangerous for the development of ufology in Italy, CUN decided to reorganize and begin a correct sensitization action towards these popular magazines and their readers. What were the results of our choice?

Being the only experienced UFO study center in Italy, our co-operation with the editorial staffs of these magazines proved to be useful for both. CUN's policy

prevented the uncontrolled spreading of "wild" UFO tales and succeeded in originating a more correct information. Besides, CUN's battle against hoaxers, "contactees" like Eugenio Siragusa and his sectarian "Centro Studi Fratellanza Cosmica" and cultism in Italy was greatly supported and publicized. In other words, *maintaining during this long and difficult sensitization action its independence, CUN succeeded in using these magazines (today only GLI ARCANI and IL GIORNALE DEI MISTERI are still in existence) as well as their publishing houses* in order to obtain certain results. Today Centro Ufologico Nazionale is mentioned in over fifteen recent books on UFOs (most of which are best-sellers in our Country) published by several publishing houses (Tedeschi, Armenia, De Vecchi, Edizioni Mediterranee, MEB, Fanucci, Rizzoli, Della Valle), is often requested and quoted by mass media as well as in a forthcoming encyclopaedia. These are concrete results we cannot ignore, and the evidence that our choice was right. But what about the development of UFO research in Italy? In NOTIZIARIO UFO Centro Ufologico Nazionale continued its dialogue with its members and supporters and with foreign ufologists. Recently, in the 30th anniversary of Kenneth Arnold's first modern UFO sighting, CUN held its Second National Congress of Ufology (the first one took place at Riccione, near Rimini, on June 24th and 25th, 1967) at Toscolano Maderno (Lake of Garda) on June 25th and 26th, 1977. This "Secondo Congresso Nazionale di Ufologia" was cause of great interest in our Country for

the presence of foreign delegates from England, France, Spain, Romania and Argentina. In this occasion Centro Ufologico Nazionale presented a decade of serious research activity in Italy, with a recent example of our case studies of great importance for international ufology: the first complete, long-awaited computerized analysis of the 1954 UFO wave in Italy (parallel to the French UFO wave studied by A. Michel and J. Vallée), based on about 400 Italian sightings and landings. The results of this study, being part of this Congress' *acta in extenso*, were published in the latest issue of NOTIZIARIO UFO (No. 75/76), sent also to the most important UFO organizations abroad. It is the first scientific approach in the UFO field in Italy, and this équipe effort was entirely conducted by CUN.

But this is just the beginning. Centro Ufologico Nazionale's most important problem at present is the correct use of the scattered and extempore action of many young self-styled "ufologists" (not yet in touch with CUN and its professional methodology) jealous of their local group's individuality, whose (quite unrewarded) contribution was commonly used for editorial purposes by popular magazines such as IL GIORNALE DEI MISTERI. In our opinion instead of simply eliminating the negative influence of some publishing house on Italian UFO fans and young researchers in their teens, as Mr. Doretta suggests, it is necessary to make these groups of enthusiasts understand that only an experienced, authoritative and unified study center like CUN will be able to support

serious and concrete research in Italy, to be conducted *with a common methodology*.

The gradual forming of several *Sezioni* or CUN's local branches is our first step towards that ACTIVE EXAMPLE Mr. Doretti speaks of. After the creation of Italy's best ufological "brains trust" in their "in house" function, Centro Ufologico Nazionale needs many experienced field investigators forming *Squadre di Intervento* (Field investigative squads) with technical and scientific preparation, carefully formed by CUN's *élite*, in order to turn its programs concerning a serious and non-profit professional UFO research into practice. Answering to our unitarian call, emphasized during the Toscolano Maderno Congress, many of these smaller independent groups are already co-operating with us, and their investigations are now part of CUN's BANCA DELLE DOCUMENTAZIONI (UFO DATABANK), open and available to all serious UFO researchers in Italy and abroad.

In 1978, the starting of the process of *gradual computerization* of Italy's recent UFO events, as well as of future ones, will permit CUN to develop its research efforts. Besides, its *unofficial co-operation with some scientific and military exponents* is proving to be very important and useful.

In our opinion, Centro Ufologico Nazionale is becoming that ACTIVE EXAMPLE so needed in today's Italian UFO scene. According to Mr. Doretti, this example can be obtained by a wider divulgation of everything is done in a correct and serious way *all over the*

world, and namely with a frequent and quick exchange of news and results among serious researchers, either official or independent in the UFO area. All right. From a theoretical point of view there is nothing to argue against Mr. Doretti's suggestions. But in practice?

In practice the best is yet to be done and to come, as far as UFO research in Italy is concerned. In any case CUN's seriousness and enthusiasm are an important catalyzer in our Country and surely will help the cause of Italian ufology. But one could doubt the validity of a frequent and quick exchange of news and results with foreign UFO study organizations.

This opinion of mine will sound provocative and contrasting with CUN's traditional policy and with the evidence of its acknowledged importance abroad. But it has its "*raison d'être*".

Italian Ufologists were characterized for years by a sort of inferiority complex in their contacts with foreign UFO study groups, and with American ufologists in particular. The same creation of a magazine like UFO PHENOMENA, printed in English, shows this unconfessed but still existing psychological situation, surely felt by today's members of CNIFAA when they left CUN to continue their independent research in touch with foreign colleagues. But what did foreign ufologists do with this Italian contribution? How did they use it?

CUN has been sending its NOTIZIARIO UFO to countless UFO organizations abroad in the past as well as today. As I mentioned above, our contribution to international ufology was

generally acknowledged. But that is all. Centro Ufologico Nazionale was and is not interested in reading in foreign ufological publications that it exists and is a serious study organization. It was and is interested in the international spreading of the results of its investigation effort. And nothing more.

On the contrary; with the exception of particular and personal contributions of mine, NOTIZIARIO UFO's analyses were too often ignored by foreign UFO publications. Why?

I do not know. But surely the linguistic barrier is not able to explain this general situation. We are afraid that, after all, the right answer is just to be found in many foreign UFO publications' *superficiality*, especially in the USA.

I think some examples are necessary.

In Frank Edwards' FLYING SAUCERS-SERIOUS BUSINESS (Lyle Stuart, New York 1966) we read (pages 191 and 192) that a landing occurred near Milan on October 28th, 1954, and that 31 witnesses saw small humanoids moving around a grounded "saucer". This typical CE III is still considered abroad one of the most interesting Italian cases; *but it is a fake!* CUN exposed this hoax in NOTIZIARIO UFO in 1969 (No. 4, pages 15 and 16), but it was useless. This mass joke took place at Tradate, not far from Milan.

In 1974 (NOTIZIARIO UFO No. 62, April-June, page 16 CUN reported in an important article (La Ricerca Ufologica in URSS) my visit to Moscow ufologists and the text of the AGREEMENT ON MEASURES TO REDUCE THE RISK OF OUTBREAK OF NUCLEAR

WAR BETWEEN THE UNITED STATES AND THE UNION OF SOVIET SOCIALIST REPUBLICS signed in Washington on September 30th, 1971, mentioning... arrangements for immediate notification should a risk of nuclear war arise from such incidents, from detection of *unidentified objects* on early warning systems or from any accidental unauthorized or other unexplained incident involving a possible detonation of a nuclear weapon". This document was known in 1974 to our Russian friends and CUN revealed it for the first time in the Western World. No comment from any ufological publication abroad. Only later, in its Vol. 2, No. 10 (October, 1977), the INTERNATIONAL UFO REPORTER mentioned this document, "discovered" in USA after more than 3 years! No wonder, after all. Another alert communication by CUN was totally ignored also in 1967 (See NOTIZIARIO UFO No. 3 of 1967, pages 9 and 10) by western ufologists: the first information, in a letter by Alexandr Kazantsev, about the Soviet UFO Committee formed in USSR some months later.

Let us go on.

An expose of the world-famous Monguzzi photographic case was reported in NOTIZIARIO UFO No. 69 in 1976, presenting the details of Monguzzi's fabrication, verified by CUN's investigation. Nevertheless, non foreign ufological publication mentioned this analysis, and abroad many ufologists think this case is a reliable one!

In 1976 (NOTIZIARIO UFO no. 71) CUN published a complete report (with a

cover notice in English) about a number of important CE III cases in Italy (even photographic ones!). Foreign publications ignored all this, and only in its "World Round-Up" section FLYING SAUCER REVIEW reported (Vol. 23, No. 2) a partial account, quoting a Spanish press source!

I could continue, but I think it is enough. What I mentioned above has not the purpose of criticizing our foreign colleagues. It is just to free Italian ufologists from their inferiority complex. As you see, superficiality has no boundaries. It is superficiality we must fight against.

As Jacques Vallée wrote in his THE INVISIBLE COLLEGE, there is "explosive material in the European files. Many of the sightings were extremely well documented, and investigations of the highest caliber had been made much more thoroughly and professionally than ever the best cases in the (U.S.) Air Force files". In his THE EDGE OF REALITY, co-authored with Dr. J. Allen Hynek, Vallée speaks of "people in England, Spain, France and Italy who are doing catalog work on a continuous basis". That people are Centro Ufologico Nazionale's researchers, the Italian ACTIVE EXAMPLE who just needs the concrete evidence of *mutual* co-operation from both abroad (and not only through the mere exchange of NOTIZIARIO UFO with foreign publications) and Italy's UFO scene: from the young and often unexperienced enthusiasts in touch with popular magazines to the limited but high-quality effort of our colleagues of CNIFAA now supporting, as well as CUN, the UFO PHENOMENA team's

spirit.

best wishes,

Dr. Roberto Pinotti
Vice-President,
CENTRO UFOLOGICO NAZIONALE
EDITOR, NOTIZIARIO UFO
Milano-Italy

Dear Editor,

I read carefully Dr. Pinotti's letter which was sent to me as answer to my previous one of April '77 to UPIAR.

I think that some considerations must be made: Dr. Pinotti seems to agree on the fact that there exist a certain blindness towards some arguments which on the contrary would require a real scientific approach and among these, especially ufology.

He does not seem to agree on the contrary on the fact that in Italy does not exist an organization, an élite of real serious researchers. He says that the existence of CUN shows in effect that this organization exists.

I do not feel to agree with him: as far as I know, there exists actually only a very small number of serious researchers who have problems to find the right instruments both for researchers and communications. I do not want to minimize the capacities of anybody, I intend to recognize CUN as an organization with positive and important objectives: particularly I find very praiseworthy the will to follow a non-profit policy addressed to a generalized and wide action besides the efforts in trying to adress certain enthusiasms of young groups toward organized and serious jobs.

But, does all this have anything to do with science?

ON UFO AND THE POISSON DISTRIBUTION

The word "science" must not be read as it is written with capital "s", thus considering it as religion object. I think to have already given my opinion on the matter: science is a long and tiring job to be performed with the patience of an artisan.

This is why I think that it does not have to be mixed up with a general seriousness of intentions.

I wanted to focus out what above as, going back to Dr. Pinotti's arguments concerning CUN and its information channels, I think that before UFO PHENOMENA, there were no other "really scientific" publications on which one could read "scientific-oriented" papers. It is understood that bulletins cannot be used for this purpose as they have other functions. It is also clear that other magazines, such as "Il Giornale dei Misteri" ("The Journal of Misteries") cannot be used either as they have namely a sensational purpose or sometimes they give reports with very strange opinions. I do not intend to say that sometimes the reader can also find interesting and nice things: it happened and can happen again, but in order to clarify with an example: which physician wishing to know the latest researches on the cancer or wishing to publish a new paper on the matter would contact a journal with a divulgation purpose?

A similar psychological position is kept also by people dealing with ufology from the scientific point of view: therefore we can state that divulgative publications at national level have a meaning, but the researcher who needs an instrument suitable for the international diffusion of his studies will find in UFO PHENOMENA a valid aid.

R. Doretti
Segrate (Milano) Italy

Dear Editer:

This letter attempts to correct the calculations shown by Ernst Berger in his paper published in the first issue of U-PIAR (1), and to derive new conclusions from the current numerical values.

In my official review of the paper for U-PIAR, I did not see an evident error in which the author fell regarding the right formula of the chi-square test. Expression A is the correct version of the χ^2 test, and expression B is the inference made by Berger, which is obviously mistaken.

$$\chi^2 = \sum_i \left[\frac{(h_i - h_{oi})^2}{h_{oi}} \right] \neq \frac{\sum_i (h_i - h_{oi})^2}{\sum_i h_{oi}}$$

(A) (B)

By following the proper calculation system, the value I have obtained for χ^2 is 32.77, an arithmetical result ten times higher than the one reached by Berger. In consequence, the conclusions to be drawn from this number will be greatly different from these noted in the mentioned paper.

I refer the reader to Fig. 1 which shows the levels of significativity of the values obtained in the chi-square test according

to their degrees of freedom (2).

In the graph I have marked with an asterisk the places occupied by Berger's result ($\chi^2 = 3.1$) and mine ($\chi^2 = 32.77$). If 5% notes the lowest threshold for a bad fit (this is, the beginning of serious discrepancies with the Poisson distribution in the context of the paper), I call the attention of the reader to the fact that the actual value deducted from the χ^2 analysis gives us a significance level, for three degrees of freedom, higher than 99,9%. This means that we should establish the opposite logical inferences than these adopted by Berger:

1 - We must refute the null hypothesis that the differences between theoretical Poisson distribution and the Austrian wave's data are purely due to chance effects.

2 - The structure of the Austrian wave, as well as many other waves throughout the world, cannot be built by following random processes.

3 - The construction of a wave is due to the abundance of *physical stimuli* of an anomalous type which give raise to the UFO observations (3).

4 - Most probably, UFO activity fluctuates because of the existence of some "intelligence" in the phenomenon of UFOs, taken it as a global structure, as Guasp demonstrates (4).

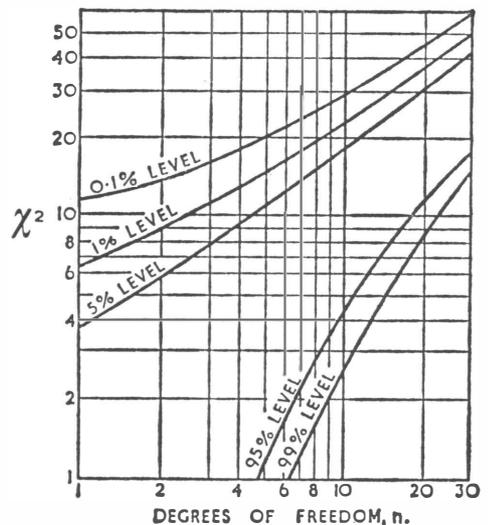
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Vicente-Juan Ballester Olmos

Graphs of the chi-square test. The 0,1%, 1% and 5% levels indicate suspiciously bad fit. The 95% and 99% levels are used to indicate suspiciously good fit.



Dear Editor:

It was interesting to read the corrections of BALLESTER OLMOS (1) concerning his official review on the BERGER paper (2)

I am glad to see that – although delayed – scientific discussions begin to flow and a fundamental mistake overlooked by BERGER and OLMOS was exposed and corrected. Similar corrections, in fact, have seldom happened in other publications in the field which encourages me to think UPIAR is likely to put things into focus.

At this time, one can draw the following conclusions:

- a) Contrary to further assumptions by BERGER (2), the 1954/55 Austrian “wave” data are not following a random distribution.
- b) Problem-adequate statistical descriptions and testing of hypotheses for “wave” data on record are likely to give interesting results and should be continued.
- c) The non-randomness of the BERGER “wave” data remains an isolated phenomenon not suggesting “intelligence” or other external driving forces as long as non other comparable “wave” event has been studied in a similar way and no investigation of the social sciences on UFO publicity avalanche processes called flaps exists (which should give different patterns to suspect “intelligence” rather than progressive reporting). To infer “intelligence” from a prevalence of UFO motion directions with only 8 direction sec-

tors is far-fetched and requires magical thinking. There is non “intelligence” behind waterspouts and tornadoes which also show prevalent directions of origin and motion according to Alfred WEGENER (4) and FLORA (5).

- d) As a result of the BERGER-OLMOS discussion the subject is open to further research which is hoped to solve the problems.

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Ernst Berger

STATE OF ART

*In this corner of the review each time will appear an invited contribution by various observers of the UFO field, not necessarily Editors of **UFO PHENOMENA**, in the attempt to define year after year the state of art in ufology.*

STATE OF ART

by Francesco Izzo

It's a time of changes. The "extraterrestrial hypothesis" (ETH) seems to slacking off while almost all UFO publications *à la page* uninterruptedly dish up "paraphysical hypotheses" formulated by a flock of would-be specialists. Apparently an infectious disease the origin of which may be found in a *furor scribendi* bacterial strain thriving inside the university environment is responsible for this profusion of nonsense literature. An ideal vaccine could be a Wittgenstein-like one but available stocks are seemingly not enough in comparison with the increasing number of sorcerer's apprentices...

The last decade has shown in UFO topics a sort of psychological dependence of the process of surmise framing on the public opinion frustrations. Did people need cosmic consolation? Flying saucers from outer spaces filled in the gap. Do people need new exciting mind horizons? UFO's, messengers from the Nothing, are the compulsory answer.

This frantic search for explanations is surely not the most suitable *milieu* in which to ask ourselves about the genuine significance of an UFO experience. It is customary to say: that it is an interaction between one or more witnesses and what he, she, they will relate thereafter.

Very few students, however, ponder over the respective weight of roles played by the percipient and the perceived.

Or rather a troublesome ballast concerning the supposed nature, origins, and purposes of the perceived thing (to a lesser degree about its alleged effects) is abounding in the international literature.

Conversely the bearer of our information, the true independent variable in the UFO problem, *the witness*, did not arouse a similar attention. The UFO is generally a source of profit whereas the percipient is not.

This predilection for speculations or as wisely pointed out by Richard Hall (1)

“explaining the unknown in terms of the even more unknown” caused a progressive removal of the scientific community from a careful and unbiased investigation of UFO data.

Here and now it is self-evident to proclaim the study of UFO phenomena is to a great extent an *indirect* one having we mostly to found our analyses upon a heterogeneous mass of reports depending on eyewitnesses narratives.

If we look at this year as well as some manuscripts appearing in this issue of *UFO PHENOMENA* a reassuring turn-about comes to the light. In the UFO field meaningful advances could be achieved if a considerable amount of research were to be spent in elucidating the witness perception and data processing systems.

Researches in neurochemistry, as shown by Claude Rifat (2), studies in UFO shapes perception, as skilfully described by Richard Haines (3,4), findings about hallucination mechanisms, as dramatically reported by Ronald Siegel (5), experiments into the nature of alleged UFO abduction experiences, as emphasized by William McCall and Alvin Lawson (6), are only a small selection of stimulating scientific approaches to the study of anomalous phenomena which this journal will encourage because of their unquestionable heuristic value.

These contributions are a vital part of a strategy of knowledge based upon an interdisciplinary perspective to any problem.

The ocean of empiricism must eventually be forsaken and *direct* studies such as those quoted should begin and be supported from serious scholars. A step forward has been taken to overcome the *impasse* we are in. Perhaps it would be proper to reflect upon some penetrating words by the physicist Ludwig Boltzmann: “Until alchemists merely looked for the philosopher’s stone and hoped to find the art for producing gold all their efforts were fruitless; only when their interest centralized around seemingly less important matters was the chemistry born”.

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reviewed afterward*

●
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Francesco Izzo

State of the Art?

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