

II. POINTS OF VIEW ABOUT UFOS: A MULTIDIMENSIONAL SCALING STUDY¹

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Summary.—This study has isolated and identified five stereotypical points of view based on patterns of perceived similarities within a sample of 14 UFO reports. Using an improved individual differences approach to multidimensional scaling, numerical parameters and verbal caricatures have been developed for a four-dimensional "Prejudiced" viewpoint, a four or five-dimensional "Party Line" viewpoint, a six-dimensional "Skeptical" viewpoint, a six-dimensional "Believer" viewpoint, and a nine-dimensional "Contactee" viewpoint. The apparent assumptions and concerns of each viewpoint are delineated. The corresponding profiles of expressed UFO-related attitudes have been examined.

Unidentified Flying Objects (UFOs) can arouse differences of opinion that appear to rival in intensity those relating to war and peace or to race relations. However, almost nothing is known about the structure of persons' attitudes towards UFOs or about the forces that shape them. In one study employing a conventional factor analytic approach, nine dimensions of individual differences of opinion concerning UFOs were extracted from a set of 41 items (Saunders, 1968). A variety of possible correlates for some of these factors have been examined by Lee (in press).

This study was designed to provide a more subtle entree to the domain of UFO attitudes, on the assumption that these attitudes influence the way in which UFO reports are perceived. In particular, we found a concept of UFO prejudice to be heuristically useful in accounting for the behavior of some persons with highly visible attitudes and sought an experimental design that might lead to an operational definition for this concept. In this connection, we were impressed by the demonstration (Secord, 1959) that racially prejudiced persons experience relative difficulty in distinguishing among individual members of minority groups. In the context of UFOs and the individual differences model for multidimensional scaling (Tucker & Messick, 1963), this observation led us to hypothesize that persons holding attitudes "least favorable" to UFOs will spontaneously perceive and implicitly classify a set of UFO reports in terms of a minimal number of dimensions.

¹Inasmuch as the writer was associated with the "UFO Project" at the University of Colorado until February 9, 1968, it should be noted that this report is based entirely upon data collected and analyzed since that date and independently of that study. Additional data have been filed as a supplement to this article. Request Document NAPS-00177 from ASIS National Auxiliary Publications Service c/o CCM Information Sciences, Inc., 22 West 34th Street, New York, N.Y. 10001, remitting \$1.00 for microfiche or \$3.00 for photocopies.

This report is intended to describe both the procedures and the outcomes of a study stimulated by the stated hypothesis. It should be noted that the study has been designed primarily to yield descriptive information rather than a rigorous test of any hypothesis. It should also be noted that we have introduced certain innovations into the computational aspects of the multidimensional scaling (MDS) method; these are described in the procedure section of this paper.

PROCEDURE AND RESULTS

The standard stimuli used in this study were 14 "stories," averaging 300+ words long, each written in the form of a "UFO report." Each story was based on an actual report, as shown in Table 1 but was rewritten in a relatively uniform style. During this writing, an effort was made to retain all "factual" matter pertaining to the original "sighting," and to discard all matter derived

TABLE 1
UFO CASES EMPLOYED IN MDS ANALYSIS

Case	Location	Date	Source
1	Aberdeen, Maryland	July 2, 1955	Van Arsdale*
2	Exeter, New Hampshire	September 3, 1965	Fuller (1966a)
3	Flatwoods, West Virginia	September 12, 1952	Sanderson (1967)
4	Great Falls, Montana	August 15, 1950	Saunders*
5	Loch Raven, Maryland	October 24, 1958	Vallee (1966)
6	Poncey, France	October 4, 1954	Michel (1958)
7	Portsmouth, New Hampshire	September 19, 1961	Fuller (1966b)
8	Ravenna, Ohio	April 17, 1966	Weitzel (NICAP*)
9	Socorro, New Mexico	April 24, 1964	NICAP*
10	Sumner, Washington	April 1, 1959	NICAP*
11	Trindade Island, Brazil	January 16, 1958	Lorenzen (1962)
12	Vernon, France	August 23, 1954	Michel (1958)
13	(Villas-Boas), Brazil	October 15, 1957	Lorenzen (1967)
14	Yalu River, Korea	September 10, 1950	Lorenzen (1962)

*Private communication. NICAP is the National Investigations Committee on Aerial Phenomena, 1536 Connecticut Avenue, NW, Washington, D.C. 20036.

from subsequent investigation, interpretation, or evaluation.² Operating within the limitation of the available sources, an effort was also made to represent the existing range of UFO reports. This was difficult to accomplish using only 14 stories, but a larger number was precluded by the arbitrary decision to limit the MDS task to 3 hr. per S.

Ss were 25 CU students in introductory psychology who volunteered to participate in an experiment to "Judge the Similarity of Stories," in fulfillment of a course requirement to serve as experimental Ss. Ss were run in groups of one or two during the period April 18 through May 1, 1968. As a familiarization

²So that the reader may verify or improve upon the interpretations to come, the actual texts of the 14 stories are given as an Appendix.

procedure, each S first read all 14 stories and then selected one pair that he judged quite similar (possibly but not necessarily most similar) and another pair that he judged quite dissimilar (possibly but not necessarily least similar). To anchor S 's scale of judgment, these pairs were assigned to "1" and "8," respectively, on the 10-point scale from "0" through "9." S was then required to consider each of the 91 story-pairs in a predetermined random order and to judge the "distance" between the stories of each pair according to the 10-point scale. After completion of the MDS task, S was asked to respond to a 41-item "UFO Opinionnaire" (Saunders, 1968).

The first step in analysis of the MDS data was to determine the number of points of view represented, and the relation of each S to each point of view. By treating the 91 pairs as distinct entities and the judgments of the 25 S s as attributes of those entities, we may array the data in a 91×25 score matrix, X . Now we must factor analyze X .

In order to facilitate later determination of the relation of each stimulus-pair to each factor, it has become the usual practice in MDS simply to compute the Eigenvalues of $X'X$. When this is done, the first Eigenvector is closely proportional to the column means of X and is counted as a significant factor. The major difficulty with this approach is that it denies the advantages of using communalities in factor analysis. Thus, if some S were to make purely random judgments, we would be inclined to increase our estimate of the significant dimensionality of X to accommodate him and would eventually find ourselves trying to interpret his unique and senseless point of view. This ought not to be permitted.

In an analysis such as the present one, there is much to be gained from an assurance that only common or shared points of view are carried forward. This may be accomplished by now factoring, *with* communality estimation, either the covariance matrix or the correlation matrix corresponding to $X'X$. The former is preferable, although a Joereskog (1963) scaling prior to factoring would be better still. Either the covariance or the Joereskog scaling is removed immediately after factoring. The result is a $25 \times k$ matrix, F , which may be rotated to display the simple structure correlation of each S with each point of view. The present data were factored in the covariance metric, and the number of shared viewpoints was clearly determined to be 5. The equamax F matrix is shown in Table 2, together with the sex of each S . Reinforcement for our decision to go this way is provided by the observation that the communality for Subject 17 is very close to the chance level of 5/91.

The matrix of beta-weights, $B = F(F'F)^{-1}$, may now be computed. If A is the 25×41 matrix containing S 's responses to the attitude items, and K is a conformable constant matrix containing the raw scale value of a neutral response (2.5), then the expression, $(A-K)'B + K$, gives least squares estimates of the attitude responses characteristic of each viewpoint factor, on the scale of the

TABLE 2
SUBJECTS BY VIEWPOINTS MATRIX, F

		A	B	C	D	E	b_i^2
1	♂	-012	314	524	074	022	379
2	♀	174	203	026	416	496	491
3	♂	577	037	-021	394	-005	491
4	♀	200	392	188	184	354	388
5	♀	242	197	300	454	568	717
6	♂	-015	058	435	070	129	215
7	♀	642	031	014	012	154	436
8	♂	129	423	231	162	080	281
9	♂	194	146	275	056	614	515
10	♂	467	122	158	139	470	498
11	♀	-041	051	022	075	653	437
12	♀	242	416	302	185	316	457
13	♀	-049	698	113	246	028	564
14	♂	500	283	-034	188	133	384
15	♂	344	280	471	400	043	581
16	♀	218	470	290	337	070	471
17	♂	152	-018	074	100	-112	052
18	♀	201	153	387	433	184	435
19	♀	162	600	062	-054	248	455
20	♀	160	127	120	712	114	575
21	♂	108	282	167	048	197	160
22	♀	232	397	378	244	353	538
23	♀	192	470	292	374	280	561
24	♀	163	080	016	674	115	501
25	♂	056	054	734	019	084	552
Σf^2		1872	2464	2125	2401	2273	11135

raw attitude data. Moreover, if Z is the matrix of beta-weights based on the factor analysis of the attitude items, the $Z'(A-K)'B + K$ gives estimates of the attitude factor scores typical of each viewpoint, still on the original scale. These results appear in Table 3, together with the results for certain of the items.

In a similar manner, the matrix product, XB , gives least squares estimates of the stimulus-pair judgments characteristic of each factor viewpoint, on the scale of the raw judgments. (In this case, $K = 0$.) Using the stimulus subscripts of each pair, the entries in one column of XB (one viewpoint) may be re-arranged as a symmetric matrix of distance estimates and then subjected to the MDS factoring procedure of Messick and Abelson (1956) to determine its dimensionality and the unknown additive constant. (The use of this constant compensates for any loss of information caused by discarding the column means of X in the stage-one factoring.) This stage-two factoring and the following rotational step must be performed separately for each point of view.

The MDS computational algorithm does not know nor care where the

TABLE 3
ATTITUDES BY VIEWPOINT, MATRIX $Z'(A-K)'B + K$

Factor	A	B	C	D	E	Content**
I	3.53	1.18	4.61	2.42	2.89	Possibility of ETV
II	1.39*	3.31*	2.04	.33	1.24	Subjective Evidence
III	.10	3.03	1.69	5.38	3.39	Objective Evidence
IV	2.31	2.33	1.22	2.02	2.33	Natural Explanation
V	2.17*	4.58	4.36	2.94*	1.75	Psychological Expl.
VI	1.81	.33	1.10	4.69	4.10	Potency of Science
VII	5.33	2.76	3.04	2.55	2.07	Government Secrecy
VIII	2.55*	3.11	.52	2.38	2.67	Government Adequacy
IX	1.66	1.81	.13	2.57	.80	UFO Respectability
Item	3	3.43	2.64	1.25	2.00	Air Force adequacy
	4	3.51	2.60	.93	2.48	No physical evidence
	6	2.21	2.27	.38	2.38	No airline pilots
	12	2.06	1.60	4.75	2.49	Spend more money
	13	3.19	3.01	.35	2.08	ETI cannot exist
	17	2.20	2.93	3.73	3.62	World-wide reports
	18	.50	3.51	1.93	2.76	Good job by govt.
	20	.84	4.09	1.94	3.60	People want ETI
	26	1.65	1.52	2.35	1.62	Non-believers stupid
	31	1.53	1.60	2.06	2.15	Good expt. unambiguous
	33	1.69	1.36	1.18	3.92	No except. to Newton
	34	1.10	2.04	-.06	3.47	Theory must be T or F
	36	2.18	1.44	1.31	3.11	Tornados controllable
	38	3.11	1.36	.80	1.79	Negro IQ < White IQ
	39	1.78	.96	1.53	1.36	I have seen one
	40	3.09	4.14	1.58	.01	Friend has seen one

*The items associated with this attitude factor do not yield uniform results for this viewpoint. See text.

**For full statements of item and factor content, see Saunders (1968).

"true" origin of the coordinate system is, because the origin can be moved anywhere without affecting inter-point distances. The raw MDS output places the origin at the centroid, which has the incidental effect of locating the points in a space with *one less* dimension than the number of significant clusters. Before the factors within a given viewpoint can be interpreted, we must first restore the missing dimension by moving the origin away from the centroid and then begin to rotate in search of simple structure. If the origin is moved exactly to the proper place, the simple structure axes will emerge as orthogonal. Otherwise, the result will emerge as oblique but will still be the same structure. In other words, exact placement of the new origin is not critical. A convenient and satisfactory technique is to introduce a $k+1^{\text{th}}$ unrotated axis which has a constant coordinate for all stimuli, allowing this constant to become distributed among the rotated axes so as best to satisfy the rotational criterion in use, such as equamax. An appropriate value for the unrotated constant coordinate is given

TABLE 4
WITHIN VIEWPOINTS ROTATED COORDINATES

	Stories													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
A ₁	5.34	2.32	.20	5.07	-1.70	-.11	-1.24	2.27	.59	-.16	4.48	4.45	-.39	4.48
A ₂	-.85	-.35	1.90	-.12	2.63	1.51	-1.17	-1.73	3.60	1.09	-1.09	-.35	8.15	-.12
A ₃	-.28	3.26	2.76	-.05	4.60	.87	5.30	3.38	3.39	1.42	.15	-.90	-.08	-1.87
A ₄	-1.20	-1.77	1.12	-1.83	1.02	5.53	2.84	-.43	-2.61	5.10	.06	1.21	.75	2.61
B ₁	5.48	-.76	.80	5.81	.99	-.52	.15	.31	.61	.92	-.58	3.37	-.77	-.32
B ₂	-1.41	3.65	-1.46	1.16	-.98	-.04	1.99	5.24	.24	3.32	-1.22	1.76	-.01	1.41
B ₃	-.04	-1.86	-.33	-.41	3.67	.41	-.11	.64	-1.59	2.60	4.88	.56	-.10	5.75
B ₄	.40	2.19	2.07	-.95	-1.11	6.10	-1.49	-.74	4.12	.53	3.18	.52	.39	-.98
B ₅	.45	2.15	3.72	-.50	2.47	-.34	4.36	.22	1.79	-1.55	-.60	-.81	5.25	-.19
C ₁	.73	2.25	.20	.35	-.66	-1.07	.30	3.47	5.68	.77	-.63	-.15	-.29	3.06
C ₂	-.26	1.87	-.66	-1.85	-.04	1.14	4.16	.79	-1.04	-5.12	-.00	.29	6.16	.72
C ₃	.18	1.76	6.68	-.12	-.92	5.30	-1.46	.34	-.45	.42	.32	.74	.49	-.70
C ₄	-.46	.25	.30	4.19	1.12	-.83	-.93	-.36	.48	2.74	5.16	-.50	1.03	4.67
C ₅	4.87	1.47	-.99	.87	4.42	1.48	3.05	2.08	-.03	1.45	.52	-.19	.45	-1.55
C ₆	-1.16	-1.72	.83	.01	.17	.73	2.80	-1.05	.34	2.17	-1.30	8.07	1.28	-1.10
D ₁	1.86	2.59	-1.17	-.60	3.07	2.30	.21	.54	4.31	-.71	-.28	7.05	-.22	-.58
D ₂	-.47	.42	.29	-.43	-5.06	3.74	-1.72	5.80	3.30	-1.18	2.11	-.54	.56	.26
D ₃	-.95	.43	2.22	.55	1.58	-.48	1.46	1.00	2.51	3.56	-1.49	-1.02	-.40	6.27
D ₄	-.96	3.19	.14	6.89	.69	2.26	.79	.74	.24	-.73	5.29	-.69	.12	.04
D ₅	6.38	3.08	6.44	-.92	1.98	.95	-1.02	1.00	-2.53	.21	.45	.62	-.80	.90
D ₆	-.14	-4.18	-1.41	.03	.88	-.96	6.16	.48	.04	5.35	.91	-.32	8.08	.07
E ₁	.10	-.32	.46	-.90	1.05	1.15	8.30	-1.12	7.46	-.22	2.30	-1.50	4.75	-.82
E ₂	.73	.58	.19	-.58	-.89	.05	-.26	2.55	-2.74	-.17	4.27	9.19	4.37	-1.92
E ₃	-1.10	-2.82	-.35	2.54	2.09	9.76	1.32	-.78	1.11	.37	-2.89	.18	-.54	3.58
E ₄	.24	-.62	10.56	1.42	1.95	-.41	-.18	.08	1.71	-.12	-3.90	.45	-1.03	.81
E ₅	.09	8.62	-.06	.27	4.77	-1.06	-.61	-1.28	-.16	.66	-.36	-.19	1.42	5.85
E ₆	-.14	-1.16	.36	.33	5.56	-.23	-1.76	8.29	1.44	-.01	3.60	1.63	-3.79	.74
E ₇	.43	1.15	.66	8.94	-2.40	1.70	.54	1.39	-2.32	-.17	4.80	-.29	.55	-2.71
E ₈	9.26	.17	.20	.34	-2.56	-.69	-.11	.70	-.56	.80	-2.00	.51	1.13	5.15
E ₉	1.37	1.98	-.10	-.52	-2.14	.49	-1.09	.37	.81	10.40	1.85	-.32	-.03	-1.36

$$\text{by } a_{k+1} = \sqrt{\frac{kn}{\sum_j a_{ij}^2/nk}} / kn, \quad [1]$$

where n is the number of stimuli, k is the raw dimensionality indicated by the MDS procedure, and a_{ij} is the coordinate of the j^{th} stimulus on the i^{th} unrotated axis.

The steps outlined in the two preceding paragraphs were applied, yielding the results shown in Table 4. In order to permit easy comparisons between as well as within schools of thought, this table includes all the rotated axes for all five points of view. The metric of Table 4 may be regarded as equivalent to that of the 10-point scale used to collect the original distance judgments.

INTERPRETATION AND DISCUSSION

The primary result of our machinations upon the data is Table 4. This table summarizes five distinct ways of viewing the same set of 14 stimuli which were the UFO reports listed in Table 1. So far, we have isolated and designated these viewpoints by the letters A through E (Table 2), obtained a simple structure factor analysis for each one (Table 4), and obtained a profile of expressed UFO attitudes for each one (Table 3). What does it all mean? Discussion of each dimension of each viewpoint seems unduly tedious, and we will deal here with each viewpoint as a whole.

Viewpoint A.—This school of thought is a good one to examine first because it utilizes fewer dimensions than any other, and these dimensions can be clearly identified:

- A₁—Number of object-sightings
- A₂—Number of witnesses
- A₃—Time-duration of sighting(s)
- A₄—Damage or threat of harm

Stories 1, 2, 4, 8, 11, 12, and 14 may be regarded as "high" on dimension A₁. Of these, Stories 1, 4, 12, and 14 report multiple objects seen simultaneously, Stories 2 and 11 report successive sightings of what may or may not have been the same UFO, and Story 8 reports simultaneous sightings by independent groups of witnesses. All the other stories describe single sightings of single UFOs by single witness-groups.

Stories 9 and 13 may be regarded as "high" on dimension A₂. These are the only stories involving solitary witnesses. In the case of Story 9, a second witness arrived too late to see the UFO. In the case of Story 5, which is marginally related to this dimension, there were just two witnesses.

Stories 2, 3, 5, 7, 8, and 9 may be regarded as "high" on dimension A₃. The correspondence is not quite so perfect as for dimensions A₁ and A₂, but these seem to be the sightings that lasted a long time. This identification would be improved if Story 9 stood lower, and Stories 10 and 13 stood higher. However,

the matching is quite good, and the concept of duration fits the over-all picture for Viewpoint A.

Stories 6 and 10 are the only ones reporting explicit harm or damage, and they stand highest on dimension A₄. In one case, a big hole is torn in the ground, and an airplane crashes in the other. Stories 7 and 14, which stand next highest, can be interpreted as containing the threat of harm—in one case via medical examination and in the other via remote "EM Effects."

Taking these dimensions all at once, we are left with the impression that members of Viewpoint A look at these stories simply as stories—stories that might as well be works of pure fiction. The dimensions that are used to recognize similarities among the stories all measure explicit ingredients of impact, or interest-level, or general excitement for a reader. In short, "A" is interested only in the height of what he considers to be a tall tale!

The most important feature of "A's" attitude profile is his closed-minded insistence on the non-existence of objective evidence for possible extraterrestrial visitation, which gives him basis enough to explain the stories as fiction. If there is no real evidence, neither natural nor psychological explanation need be considered; the UFO problem becomes a nonsense problem.

The balance of AA's" profile is characterized by the breakdown of the factorial structure of the attitude items and by the appearance of paradoxes both within and between factors. These may be resolved, however, by hypothesizing that "A" sees a difference between the individual and his government that overrides at least the UFO issue; "A" is on the side of his kind of people. Within Factor VIII, "A" makes a strong distinction between governmental adequacy (which he rates low) and Air Force adequacy (which he rates high). His extreme insistence on Governmental Secrecy (Factor VII), even about a fictional topic, amplifies the picture of a general negative evaluation of government. On the other hand, his responses to the items of Factor V suggest that "A" regards most people (who matter) as *smart* enough *not* to believe in ETI. It is tempting to regard "A's" position as delusionally extreme, but it must be remembered that he is only an abstraction and a caricature in the first place.

If any of the five viewpoints can be labelled "Prejudiced," this will have to be the one. "A" does employ the fewest and most superficial dimensions. (In most instances, our flesh-and-blood Ss even provided degenerate examples of the "A" viewpoint, in that they did not even use all four dimensions reported in Table 4.) In contrast with the other viewpoints, "A" stands high in agreement with attitude Item 38, which is capable of interpretation as an indicator of *racial* prejudice. And most important of all, it was the empirical observation of denial of evidence that caused us to conceptualize UFO prejudice in the first place.

Viewpoint B.—This school of thought utilizes the second smallest number of dimensions, and properly comes next in this discussion. We propose to identify these dimensions as follows:

- B₁—Observation of similar objects
- B₂—Observation of glowing object(s)
- B₃—Observation in the air
- B₄—Observation near the ground
- B₅—"Observation" of "impossible" phenomena

Reducing these dimensions to their common denominator, we sense that "B" is willing to accept the stories as distorted reports of real happenings and that his attention is focussed on the particular aspects of the reports that should enable him to remove the distortions and provide good explanations. "B" is concerned with the observing conditions and the perceptual quality of the observations; that which he cannot explain by physics he will explain by psychology—either the psychology of perception or the psychology of hallucination. There is no one dimension within this viewpoint, as there is within each of the others, that isolates a witness characteristic. Instead, it is an underlying assumption of the whole viewpoint that all witnesses and all observations are fallible.

When our *particular* sample of 14 stories is considered in relation to the categories of Viewpoint B, a partial hierarchical pattern emerges. The typical UFO is in the air (B₃) but seen from the ground (B₄). Glowing objects (B₂) are reported only in the air, and similar objects (B₁) are reported only within the class of glowing objects. On the other hand, "impossible" phenomena (B₅) are reported only at ground level, usually in connection with "landings." This partial hierarchy is not an ideal simple structure, and accounts for the failure of the equamax rotation to zero in on the interpretation we have given. Actually, it is not easy to think of other detailed UFO reports that could be added to the sample to break up this pattern. It may be preferable, therefore, to leave the origin near the centroid of Viewpoint B, and to rotate deliberately to a *four*-dimensional bi-factor type of structure.

The expressed attitudes of "B" are in keeping with this over-all interpretation. Human frailty is the cornerstone. *Other* people *have* seen UFOs. Human science is so weak that many things are impossible, but extraterrestrial visitation is a negligible possibility anyway. If there is "evidence," natural explanations and especially psychological explanations are in order. Under the circumstances, the Air Force and the government are seen as doing an open and adequate job—one that need not or cannot be improved upon. Since these attitudes closely parallel the current official position concerning UFOs, we will refer to "B" as a "Party-Liner."

Viewpoint C.—The raw MDS output indicates that this school of thought is five-dimensional, and replacement of the origin for rotation leads to a six-dimensional final output. We propose to identify these dimensions as follows:

- C₁—Witness Credibility
- C₂—Personal-Psychological Evidence
- C₃—Natural-Biological Evidence

C₁—Instrumented-Physical Evidence

C₂—Structural Information

C₃—Performance Information

It appears that "C" is willing to accept the stories as reports of real happenings but, unlike "B," focusses his attention on the potential value of the reports as scientific data. Whereas "B" seems to want to reason backwards from each report to find a plausible explanation, "C" seems to hope to reason forward from the reports towards new facts and insights. "C" acts as if the reports might be able to tell him something worth knowing that he doesn't already know.

Thus, "C" segregates Stories 2, 8, 9, and 14 (C₁), which are the only reports describing uniformed (police or military) witnesses. He segregates Stories 7 and 13 at one pole and Story 10 at the *opposite* pole of a dimension (C₂) assessing the dependence of the report on personal, eye-witness evidence; Stories 7 and 13 recount intimate interactions with UFO occupants, whereas the best witnesses in Story 10 were killed.

"C" segregates Stories 3 and 6 (C₃), which suggest that a careful examination of the scene could be fruitful, and Stories 4, 10, 11, and 14 (C₄), which report the existence of photographs or wrecked airplanes or radio interference. Stories 1, 5, 7, and 8 (C₅) emphasize structural detail and quantitative estimates of size, speed, and the like. Finally, Story 12 (C₆) is seen as almost unique, but it may share with Stories 7 and 10 the quality of providing data about UFOs' "operational characteristics."

The attitude profile associated with Viewpoint C seems to reinforce the concept of a sophisticated scientific thinker. Note that "C's" strongest stand is on attitude Item 34, where he rejects the idea that "scientific theory can be shown to be definitely true or definitely false." (Perhaps "C" remembers "phlogiston" and "ether.") This open-minded skepticism leads him to take a moderately conservative position on the potency of science (Factor VI), in contrast with "B's" reactionary position and "A's" relatively neutral position. It also leads "C" to a strongly positive position on the possibilities of extraterrestrial intelligence (Item 13) and extraterrestrial visitation (Factor I), in extreme contrast with "B's" positions. Since our Ss had had no systematic exposure to UFO evidence other than what was contained in our stories, it is appropriate for the "C's" among them to take a skeptical position concerning evidence (Factors II and III); however, these "C's" are even more skeptical of the natural explanations that have been offered (Factor IV). [The frequent validity of psychological explanations is clearly recognized (Factor V).] In fact, they see official handling of the problem as woefully inadequate (Factor VIII) and prevailing attitudes as a strong deterrent (Factor IX) to the obvious remedy of spending more money and effort on UFOs and their implications (Item 12).

It is reasonable to call "C" a "Skeptic."

Viewpoint D.—This school of thought is likewise six-dimensional, and we propose the following identifications:

- D₁—Surveillance
- D₂—Evasion versus Defense
- D₃—Display of Weapons
- D₄—Display for the Record
- D₅—Display to Youth (Age of Witnesses)
- D₆—Intervention

Members of Viewpoint D seem to go well beyond the idea that the stories are reports of real events; this assumption is not rejected as in Viewpoint A, qualified as in Viewpoint B, or questioned as in Viewpoint C. "D" seems to assume, in addition, that all UFOs are under intelligent control, whether they are "occupied" or not, and he acts as if the only important matter is to understand the motivations that must accompany the intelligence. "D's" reasoning is frankly anthropocentric, however inappropriate this may be. "D" is a "Believer."

An interesting phenomenon occurs as we reach Viewpoint D. For each of the preceding viewpoints, the additive constant fitted by the Messick-Abelson procedure was in the range 1.5 to 2.0, essentially the same for all three and just enough to adjust the smallest entries in the *XB* matrix to zero. The constant for Viewpoint D jumps to 4.9, suggesting either that we have overestimated the dimensionality of the viewpoint or that *Ss* have overestimated the similarities of the stories. Since all six dimensions are readily identifiable, and in view of the properties of Viewpoint E, we prefer the second explanation. It does not seem to be out of character for a "Believer" to go overboard in seeing similarities.

In the attitude area, "D" goes overboard again in supporting the potency of science (Factor VI) and in insisting on the existence of objective but not subjective evidence (Factors III and II) supporting the possibility of extraterrestrial visitation. These three attitudes are held with extreme conviction, yet the balance of "D's" attitudes are essentially neutral or middle of the road. It does not appear that "D" is concerned with maintaining a logically coherent over-all position concerning UFOs, and this does not seem out of character for a "Believer" either.

Viewpoint E.—The raw MDS output for this school of thought gives the dimensionality as eight, increased to nine by moving the origin. With only 14 story-stimuli in the sample studied, this means that most of the dimensions serve to isolate only a single story from all of the others. The additive constant has risen to 6.9, suggesting that the raw judgments grossly overestimate the similarity of the stories.

The indication is, then, that members of Viewpoint E perceive few meaningful similarities in the stories, and it appears futile to attempt an interpretation of all nine dimensions. We do note that dimension E₁ segregates Stories 7, 9, and 13, which describe landings with humanoid occupants. And all five

of the foreign reports are segregated either on E_2 (Stories 11, 12, and 13) or on E_3 (Stories 6 and 14).

The attitude data for Viewpoint E are also sparse but seem to be consistent with the idea that "E" is a "Contactee." His most extreme stance is on attitude Item 13, where he supports the likelihood of extraterrestrial *intelligence*, but his next most extreme stance is on Item 30, where he agrees that nothing can travel faster than light. "E" has considerable faith in the teachings of science (Factor VI). Therefore, actual visitation seems to be out of the question (Item 11), and questions of evidence are moot. On the other hand, "E" is more likely than the members of any other viewpoint to have "seen" a UFO himself. Evidently he must regard this as a process of *communication* with extraterrestrial intelligence (Factor I), and as a normal (for him psychological experience (Factor V). Recognizing that this skill is normatively rare and therefore often embarrassing to discuss (Factor IX), he may nevertheless perceive himself in the vanguard of a new evolutionary phase (Item 35). This picture of the "Contactee" is obviously relatively speculative; the right questions with which to pin this interpretation down were among those not asked.

Hybrid Viewpoints.—As we can see in Table 2, only about half of the Ss in this study can be assigned predominantly to a single viewpoint. Most of the others may be regarded as hybrids of two, three, four, or even all five of the primary stereotypes just discussed. Although the MDS judgments of a hybrid will be the appropriate weighted average of the component viewpoints, this will not necessarily hold for the expressed attitudes of a hybrid. In fact, in order to account for the discrepancy between nine attitude factors and only five attitude-related points of view, it seems clear that certain of the attitude factors must arise primarily from hybrid interaction. Unfortunately, we simply do not have data for a large enough sample of Ss to try to isolate and characterize these interaction effects.

Interrelations of Viewpoints.—It is not difficult, by reference to Table 2, to ascertain that Viewpoints A and C are predominantly male, while Viewpoints B, D, and E are predominantly female. However, there are exceptions to these generalizations in every viewpoint, and the trends do not reach statistical significance.

It is also interesting to observe that the four best-defined viewpoints can be recognized solely from their positions on Factors I and III. Viewpoints B and C represent the extremes of Factor I, while Viewpoints A and D represent the extremes of Factor III. If this classification is legitimate, hybrids of A with D or of B with C should not be easy to find.

We consider the establishment of Viewpoint C as a distinct entity to be an important outcome of this study. In the eyes of all the other viewpoints, "C" has tended to blend into the background and lose his separate identity. The

establishment of two different pro-UFO viewpoints and two different anti-UFO viewpoints also helps to clarify the entire situation.

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APPENDIX

Case 1: Aberdeen, Maryland (July 2, 1955)

On the evening of July 2, 1955, a group of Boy Scouts from the city of Aberdeen, Maryland, set up camp in the woods near Chesapeake Bay. The night was particularly warm, clear and calm, so Dick Coburn and Ken Anderson decided to do some star-gazing. Walking to an open field near their camp, the boys lay down in the grass and began picking out constellations. Most of the other scouts were in the woods nearby, supervising a "snipe" hunt for the newer members.

A short while later, at about 9:30 p.m., both Dick and Ken heard a hum, unlike that caused by any machine or vehicle. Before they had any chance to discuss the matter, a luminous, metallic disc appeared behind some trees toward the west. Only 100 yd. from them, and just above the tree-tops, the object had five bright, white lights along the rim, and appeared to be about 35 ft. long. Fairly flat on the underside, the disc was rounded on the top. Moving rather slowly and emitting a constant hum, it remained in view for about 15 sec., until disappearing behind the trees to the east.

Before it passed from view, Dick and Ken yelled to some of the other scouts, who were a short distance away. Five others looked up in time to see a second object, and eight more (making a total of 15) saw a third disc. All three discs were identical, and travelled in the same direction at the same speed. About the time one disappeared from view, the next one came over. A period of approximately 1 min. elapsed from the spotting of the first disc to the disappearance of the third disc.

Case 2: Exeter, New Hampshire (September 3, 1965)

At 2:24 a.m. on September 3, 1965, Norman Muscarello burst into the Police Station in Exeter, New Hampshire. Less than 20 min. earlier, a few miles out of town, a huge UFO had flown silently toward him, he said, so close that he had been forced to jump into a ditch. Impressed by the sincerity of his report, the Police Department sent Patrolman Eugene Bertrand back to the scene, with Muscarello, to investigate.

The location was near a couple of small farmhouses and a corral. The two men arrived there at about 3:00 a.m. At first nothing was seen, but suddenly some dogs nearby began howling. At this moment, both Muscarello and Bertrand saw a huge, round, brilliantly-lit object rise from behind the trees a few hundred feet from them. Several red lights around the rim were alternately blinking on and off. Although fairly stationary, the UFO seemed to be fluttering slightly.

Several minutes had passed since the object had first appeared near them when Patrolman David Hunt arrived at the scene. He was also able to see the object quite clearly before it moved east toward the ocean and out of sight.

At 3:17 a.m., a resident who lived nearby called the Exeter Police Station to report that a UFO had almost hit him a few moments earlier.

Case 3: Flatwoods, West Virginia (September 12, 1952)

Three boys playing on the Flatwoods, West Virginia, football field saw a glowing red object, travelling at a slow speed, come around the corner of a nearby hill. The date was September 12, 1952, and the time was 7:15 p.m. (dusk). Crossing the valley, the object then dropped down behind a ridge.

Anxious to investigate, the boys ran toward the spot, more than a mile away, and noticed that a pulsating orange and red glow was emanating from behind the ridge as they approached. As they approached the crest of the ridge about ten minutes later, a Mrs. May, her two sons, a Mr. Lemon, and another boy all joined them out of curiosity.

The eight people had gone about a half mile along the crest of the ridge when they

saw a pulsating object lying in the tall grass—some 20 feet across and shaped like an inverted ace of spades. A thick mist, which smelled "warm" and rather like hot, greased metal, covered the area near the object. As the dusk was giving way to night, they then saw two flashlight-sized lights through the almost stifling mist.

Shining his own flashlight at the lights, Lemon and the others saw what seemed to be a "floating entity"—it had no arms or legs, but merely a large body and a heart-shaped head from which the two lights shown brightly. A flowing gown covered the body. Although Lemon passed out for a moment as the entity glided toward him, the others managed to revive him. Running as hard as they could, the group all made it back to the May house as quickly as possible.

Case 4: Great Falls, Montana (August 15, 1950)

On August 15, 1950, Mr. Nicholas Mariana was general manager of the Great Falls Selectrics, a farm club of the Brooklyn Dodgers. His team was in Twin Falls, Idaho, for games both that night and the previous night, but Mariana and his secretary were in Great Falls handling "front office" work.

Just before 11:30 a.m., Mariana stepped into the grandstand and, "from force of habit," checked which way the wind was blowing the smoke from the nearby smokestack of the Anaconda zinc refinery. (The wind was from the southwest at more than 25 mph; the sky was clear and blue.) Mariana's attention was attracted by two bright, disc-like objects approaching from the northwest. They looked like "two new dimes in the sky," lying parallel with the ground and one following behind the other at a fixed distance.

When the objects paused and began to hover, with a spinning motion, Mariana thought to call his secretary—who came running—and to fetch his movie camera from his car, which was parked 60 ft. away in front of the ticket gates. By the time he had made the camera ready, the objects had again begun to move—this time on a heading of 171° (measured from the films). Apparently moving on a straight and level course at constant speed, the objects remained in view of the camera for 16 sec. and in view of Mariana and his secretary for a little longer. The objects passed behind a water tower to the southwest of the ballpark, and were seen and photographed at an angle of about 30° above the horizon.

Case 5: Loch Raven Dam, Maryland (October 26, 1958)

At approximately 10:30 p.m. on October 26, 1958, Mr. C and Mr. S (the two men declined to give their names) were taking a leisurely Sunday evening drive near the Loch Raven Dam, north of Baltimore, Maryland. The road near the dam is twisting and narrow, so that any view of the large iron bridge over it is obstructed until an automobile is within 250 yd. of the water. It was at this point that Mr. C and Mr. S saw a very large, flat, egg-shaped object hovering horizontally about 100 feet over the bridge. Emitting an iridescent glow, it was clearly defined against the clear, moonless sky.

The men decided to investigate, and had driven to within 75 feet of the bridge when their engine stopped. All the dash lights and headlights went out as well, and two attempts to restart the engine failed. Extremely frightened by this time, they got out of the car, stood behind it, and watched the object for another 30 to 40 sec. Suddenly it emitted a blinding flash of light and heat, which both men felt on their faces, and then shot vertically out of sight within a space of 10 sec. Before it disappeared, it gave off a loud noise which resembled a thunderclap or dull explosion. As it rose, the object maintained its horizontal position, although its extreme brightness blurred its shape.

Getting back in their car, the men found everything to be working perfectly. They didn't cross the bridge, but turned around and headed back the way they had come.

Case 6: Poncey, France (October 4, 1954)

Mme. Yvonne Fourneret was about to close the shutters on her house in the tiny village of Poncey-sur-l'ignon, France, when she saw a strange luminous body hovering in the air only 20 yd. away. It was about 8:00 p.m. on the evening of October 4, 1954, and the sky was already quite black.

The object was near a plum tree, which was illuminated from the orange-colored glow that the thing emitted. Mme. Foruneret estimated the object to be about 10 ft. in diameter, and it was horizontally elongated. Quite frightened, she grabbed her son and ran to the home of a nearby neighbor. Her husband, Vincent, and a M. Girardot were there, and immediately upon hearing her story ran back to the place of the sighting. The object had left, but the ground showed evidence of its presence.

Over an area four and a half feet long, and about two feet wide, the ground appeared to have been "sucked up." The earth that had been torn out was scattered in large clods over an area several yards wide. Clods of dirt clung to the inner edge of the hole, and at the bottom the hole was wider than at the top. None of the small plant roots scattered in and around the hole had been cut; rather, they were intact, as if they too had been "sucked up" from the ground. There was no trace of an implement, or of any marks like those usually left by a shovel or spade.

In addition to Mme. Fourneret, numerous other villagers had seen the object. The others, however, had not seen it near the ground, but rather as it was climbing away from the town toward the southeast. One man reported that its glow had changed to green as it gained speed.

Case 7: Portsmouth, New Hampshire (September 19, 1961)

Late on the evening of September 19, 1961, Betty and Barney Hill were returning to their home in Portsmouth, New Hampshire, from Montreal. Near the town of Lancaster, New Hampshire, they saw what at first appeared to be a satellite. The road they were on led through tree-covered hills, and as they drove on, it appeared to the Hills that the light was growing brighter, although the road was twisting and the trees often obstructed their view. After stopping the car to get a better look, the Hills decided that the light might be on an airplane or helicopter, which was probably following the same route they were, and so they proceeded on.

A bit farther, they stopped once again. The light, now much bigger, seemed to be slowly heading toward them. It was now about 11:00 p.m. Through his binoculars, Hill could make out a pattern of blinking lights on a wingless fuselage. Once again they drove on, only to stop when the object came to within a few hundred feet of them. Running toward the hovering craft, Barney clearly saw at least six human-like figures staring out at him through a large window. By now almost hysterical, he ran back to the car, where his wife was waiting, and they sped away.

Although both Betty and Barney's memories become blurred at this point, due to what happened next, they vaguely recall some men stopping them a short distance farther down the road. They were then forced to enter a huge, wingless object, and undergo physical examinations. At some time during this period, their memories seem to have been altered by the men, because they can only vaguely recall the 2-hr. period from when they were stopped by the men until they were once again in their car, many miles closer to home.

Case 8: Ravenna, Ohio (April 17, 1966)

On the morning of April 17, 1966, at about 5:00 a.m., Deputy Sheriffs Dale Spaur and Wilbur Neff pulled off from Ohio State Route 224 to investigate an unoccupied car.

A moment after he stepped out of his cruiser, Spaur noticed a light, low in the sky, approaching them from the west. In a few seconds it was hovering over their cruiser, not more than 50 ft. off the ground.

As soon as he regained his composure, Spaur radioed to the Portage County Sheriff's Department, located in Ravenna, Ohio. He described the object via radio as about 50 ft. in diameter, with a darkened dome on the top. The bottom was very bright, and a cone-shaped beam of light shone down from the underside. It emitted a humming noise as it hovered.

From Ravenna, Sergeant Hank Shoenfelt replied that the two men should keep near the object until a car with a camera could get there. At this moment the object began moving slowly, directly over the highway. As Spaur and Neff accelerated, so did the object, and soon they were barrelling down the road at 85 mph. Silhouetted as it was against the early morning sky, the men could now see that an antenna or probe some 20 ft. long projected from the top rear of the craft. The object itself was shaped like a football in cross section.

Spaur and Neff followed the object through the towns of Deerfield, Canfield, Columbiana, Unity, and east into Pennsylvania. It was now 5:35 a.m. and Patrolman Wayne Huston had joined the chase. The craft seemed to be playing cat and mouse with the men, because when they fell behind, it waited for them to catch up. Police dispatchers along the chase route were monitoring the situation. Finally, after they had passed through the Pennsylvania towns of Beaver, Rochester and Freedom, Spaur and Neff's car began coughing as it ran low on gas. They stopped just as Patrolman Frank Panzarella joined them. The four men were watching the craft hover when the radio dispatcher told them that the Greater Pittsburgh Airport had it on radar. Just then it shot upwards and disappeared from sight.

Case 9: Socorro, New Mexico (April 24, 1964)

At about 5:45 p.m. on the evening of April 24, 1964, Officer Lonnie Zamora started to chase a car near the Court House in the small town of Socorro, New Mexico. As he approached the rodeo grounds at the edge of town, he heard a roar and saw a jet of flame in the sky, possibly a mile away toward the southwest. Thinking that a dynamite shack in that area might have exploded, Zamora gave up the chase and headed southwest.

Although no object was immediately visible in connection with the flame, the latter was clearly bluish-orange and slowly descending. As he drew nearer, Zamora's view became obstructed by a nearby hill. The roar associated with the flame changed from high to low frequency and then stopped. He drove up a steep gravel road which mounted the hill, but could not see nor hear anything. Proceeding along the hilltop, he finally observed a shiny object resting on four legs. It was about 200 yd. away from him, and two short people in white coveralls were standing at its side.

In order to get closer, Zamora was forced to drive down around the bottom of the hill, and so he momentarily lost sight of the object. He was about 100 ft. away from where he supposed it to be when he heard the roar once again. As he got out of his patrol car, the noise changed from low to high frequency. Now the shiny craft was clearly visible, rising straight up on the same bluish-orange flame he had first seen. It was oval, shiny, completely smooth, and had a red insignia painted on its side which consisted of an inverted "U," an "arrow," and a horizontal "bar."

Afraid that the craft might explode, Zamora ran back toward a small hillock and stopped behind it. The roar was nothing more than a whine now, and as the object flew about 10 to 15 ft. above the ground toward the southwest, even the whine ceased. It was moving very fast, and in a few moments had disappeared over a mountain in the distance.

Running to the take-off spot, Zamora found four indentations in the ground where the craft had momentarily rested. These were surrounded by blackened, smoking bushes and brush.

Case 10: Sumner, Washington (April 1, 1959)

At 6:29 p.m. on the evening of April 1, 1959, a C-118 transport plane with a crew of four took off on a training flight from McChord Air Force Base, Tacoma, Washington. At 7:45 p.m., the pilot radioed to the base that their plane had hit something, or else something had hit them. A moment later he called "Mayday," the international distress signal, and reported that he was heading back to the base. It was 30 min. later when his final message came over the radio: "This is it." The C-118 crashed 5 mi. southeast of Sumner, Washington, at 8:19 p.m. Smashed to bits, the burned wreckage was scattered over the crash site. Only three of the four men's bodies were found, two of them nearly buried in the ground.

Witnesses in the Sumner area who saw the plane before it crashed stated that none of the four engines was running when it passed over. However, they said that two parachute-like, glowing objects were following the C-118. In the nearby town of Orting, Mr. and Mrs. Bill Jones also reported seeing several parachute-like, glowing objects near the plane just before it crashed.

At 7:45 p.m., just when the pilot had first radioed that the plane had been hit, two Graham, Washington, residents reported that they had seen two brilliant glows in the sky in the direction of Sumner. A tower controller at the Seattle-Tacoma International Airport said that he, too, had seen a bright glow toward Sumner at this time.

Case 11: Trindade Island, Brazil (January 16, 1958)

At 12:15 p.m. on January 16, 1958, the ship *Almirante Saldanha* of the Hydrography and Navigation Division of the Brazilian Navy was preparing to depart from Trindade Island. Suddenly Captain Viegas and Amilar Vieira yelled and pointed to an airborne object which was approaching the island from the east. Shaped something like a flattened version of the planet Saturn, the object was glittering in the sunlight, and was traveling at about 700 mph, according to the witnesses' reports.

Almiro Barauna, an underwater photographer, heard the yelling and looked toward the east. He happened to be carrying his camera at the time, but it took him almost 30 sec. to locate the disc in the bright sunlight. When he finally found it, he snapped two pictures before it disappeared behind a large island peak. A few seconds later it reappeared, larger in size, heading in the opposite direction, and moving even faster. The disc made no sound and seemed to be surrounded by a kind of condensation of greenish, phosphorescent vapor. It was definitely a solid object, and was undulating as it traveled.

Barauna took four more pictures in rapid succession before the object disappeared over the horizon toward the northeast. In addition to Viegas, Vieira, and Barauna, all the other members of the deck crew were witnesses of the entire event.

Case 12: Vernon, France (August 23, 1954)

At about 1:00 a.m., on a clear, dark August morning in 1954, M. Bernard Miserey arrived home and put his car away in the garage. His home was located on the south bank of the Seine River. As he stepped out of the garage, he noticed a pale light illuminating the town, which had been in complete darkness. Glancing toward the north bank of the river, Miserey saw a huge, motionless mass, hovering some 300 yd. away. It was luminous, and looked like a giant cigar standing on end.

After watching the huge object for a couple of minutes, Miserey suddenly saw a disc-shaped object drop from its lower end. After falling a few feet, the disc slowed, swayed,

and then sped over the river toward him, growing more luminous as it approached. It appeared to be surrounded by a halo of brilliant light. A few minutes after it had disappeared toward the southwest, another similar object appeared from the cigar-shaped mass, and went through the same maneuvers. A third and a fourth then followed.

Somewhat later, Miserey saw a fifth disc emerge. It dropped much lower than the first four, to the level of a nearby bridge. As it hovered there momentarily, he clearly saw the disc's circular shape and red glow, which was quite intense at the center. A luminous halo surrounded the object. Suddenly, after wobbling for a second or two, this disc headed north at a high rate of speed, and was lost from view as it gained altitude. During this time, the glow of the cigar-shaped object had faded, and it could no longer be seen. Miserey estimated it to be about 300 ft. long.

The whole event, which had lasted three-quarters of an hour, was also witnessed by two policemen and an army engineer from separate parts of town.

Case 13: Sao Francisco de Selles, Brazil (October 15, 1957)

At about 1:00 a.m. on the night of October 15, 1957, Antonio Villas-Boas was startled to see what at first appeared to be a bright red star. He was plowing his family's field near Sao Francisco de Selles, Brazil, with his tractor. He was used to working at night, because his brothers worked the farm during the day.

In a few moments the "star" grew into a very bright, egg-shaped object, approaching the farmer at a high rate of speed. It stopped, however, about 150 ft. over his head, and then made a slow descent to a landing on three metal legs. The object had purple lights around its rim, a red light on front, and a rotating green light on top. At this moment Villas-Boas jumped from his tractor and dashed toward his house.

He had only gone a few feet, however, when three small men (about 5 ft. tall) grabbed him from behind and hauled him back to the craft. Although he struggled, they forced him up a ladder and into a small square room. Two other men were waiting there. All five wore silver suits, with large helmets which obstructed Villas-Boas' view of their faces. The men spoke in a grunting manner which was unintelligible to him.

After some time had elapsed, the men forced Villas-Boas to take off all his clothes. They then applied a warm liquid to his entire body. A sample of blood was taken from each of his cheeks by means of suction-like equipment and then, still naked, he was placed in a private room. Some time later, a small, entirely naked woman entered. She reminded him of any light-skinned person, except that her face was thin and tapered, and her eyes were slanted. She enticed him, perhaps with the aid of the liquid on his body, to twice perform intercourse with her.

At 5:30 a.m., after spending almost four and a half hours on the craft, Villas-Boas was released unharmed. The object took off immediately and was out of sight in the space of a few seconds.

Case 14: Yalu River, Korea (September 10, 1950)

Before sunrise on the morning of September 10, 1950, a Mr. D., who was a radar gunner (he declined to give his name), his pilot, and four other men in their fighter-bombers took off from the deck of a US carrier en route to a bombing mission near the Yalu River in Korea. As Mr. D told the story, it was the responsibility of the six men in their three aircraft to bomb and strafe an enemy truck convoy.

As the sun was breaking above the mountains in the east at about 7:00 a.m., the aircraft were heading north at 10,000 ft. approaching the target vicinity. Mr. D had his eyes peeled for the convoy when he spotted two large circular shadows moving over the ground at an extremely high rate of speed. Looking up, he saw two huge objects about

one and one-half miles from them; his radar indicated that they were approaching at a speed of over 1000 mph. Suddenly the objects seemed to halt, back up, and begin a jittering motion. Mr. D's first reaction was to shoot, but then his radio and radar went out, the latter seemingly blocked by a strange buzzing on every frequency.

By this time the two objects had begun circling the three aircraft. Shaped something like a coolie's hat, each was over 600 ft. in diameter. They had a "silvered mirror" appearance, with a reddish glow surrounding them. A pulsating copper-green colored light emanated from oblong ports on each disc, and a glowing red ring encircled the tops. On the undersides were circular, black, non-reflecting areas which remained stable in relation to the jittering motions of the craft.

In a few moments the objects took off in the same direction from which they had come, i.e., the northwest. Upon returning to their carrier, each of the other five men verified Mr. D's story.

ERRATUM

SAUNDERS, D. R., & VAN ARSDALE, P. II. Points of view about UFOs: a multidimensional scaling study. *Perceptual and Motor Skills*, 1968, 27, 1219-1238.

Note that Equation 1 on page 1225 should read as follows:

$$a_{k+1} = \sqrt{\frac{kn}{\sum\sum_{ij} a_{ij}^2 / nk}} . \quad [1]$$

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