CHAPTER VI

DATA FROM QUESTIONNAIRES, INTERVIEWS, AND CONTENT ANALYSES

Data Relevant to the Categories of the Typology of Mysticism

Method of Presentation

The available data for each category will be discussed separately, and the relevant information from the methods used to measure each category will be compared. The post-drug questionnaire (within one week), followup questionnaire (six months later), and judges' content-analysis of individual accounts (written a day or two after the experience as well as after six months) complement each other and measure the same category from different perspectives. For example, the followup questionnaire was not an attempt to repeat the same individual items exactly as in the post-drug questionnaire, but to measure the same category in a clearer or more precise way. The judges' score was in most cases a single category score which was based on the definition of each category as explained in the training manual. Each category will also be illustrated by quotations from individual accounts and tape recordings.

The single-tailed, non-parametric Sign Test was used

throughout in statistical calculations of significance levels both for individual items and items combined into categories.[1] For each pair the score or sums of scores (for more than one item) of the control subject was subtracted from the comparable score of the matched experimental subject, and the number of differences was counted. In the tables "N" is the number of pairs with a difference (differences of 0 were not counted); the statistical calculation took into account the relative number of differences with a positive or negative sign. The prediction was made for most of the phenomena measured that the experimental subjects who took psilocybin would score significantly higher than the controls. The items for which a higher control score was predicted will be indicated.

The items used for each method of measurement were listed for each category with the level of probability (p) that the difference between the experimentals and controls was due to chance. A p-value less than .05 means that the experimentals (as predicted unless otherwise indicated) scored significantly higher than the controls on the phenomena described by that item or category. In other words,

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[1]For a detailed explanation of the Sign Test and the tables used see Siegel, op. cit., pp. 65-78.

there would be less than five chances in one hundred that the observed difference was due to chance rather than to psilocybin. The p-values were listed for individual items which measured the category, for groups of items within the category, and for each category as a whole (i.e., the combination of all the items in the category).

The scores of the combined items in each category or sub-category were summarized in table form.[2] The frequency distribution of scores at comparable levels on the rating scale of each method of measurement were listed (i.e., the number of times that the ten experimentals or controls responded at each level). The total numerical sum of all scores at all levels for the ten experimentals and ten controls was listed next to the maximum possible score (i.e., the numerical sum obtained if all subjects had scored all items at the highest possible level). The p-value for the combination of items was also indicated.

The data were arranged to answer four questions for each category. Each question expressed a progressively more rigorous examination of the data to elicit the similarities

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[2]See appendix F for a more detailed explanation of the columns and symbols used in the tables.

and differences between the phenomenology of the drug experience and that of the mystical typology. 1) Did the experimentals score significantly higher than the controls on a combination of the scores of all items in the category? This question was answered by the p-value for the category. 2) If there was a significant difference in the category as a whole, was it because of high or low scores? The difference between "4" and "0" and "1" and "0" counts the same under the Sign Test. This question was answered by a comparison of the total score and frequency distribution for experimentals and controls. 3) Which individual items in the category showed a significant difference between experimental and control scores? This question was answered by each item's p-value, which was calculated using all scores on the scale for that item. 4) Did the difference in these items remain significant if only the scores at the top of each scale were used in calculation of the difference? This question was answered by another application of the Sign Test to the items selected in question 3, but all differences which were obtained from scores of "moderate" or lower were counted as 0. This loss of data would be expected to increase the probability (p) that the difference between

experimentals and controls was due to chance unless, in fact, the difference was originally due to strong scores, which would indicate that this phenomenon of the mystical typology had been experienced to a complete degree. The cluster of items which emerged as most significant were then compared to the original definition of the category.

Another technique of analysis was also employed. In some categories the number of items which contributed to the category covered a broad range. Some of these items corresponded more closely to the a priori definition of the category than others which were more supplementary but which helped to gather all evidence for the category. Therefore, not only will the results of the combined scores of all items related to the category be given, but also the combination of only those items most crucial to the category as defined in the mystical typology above. The use of this technique added precision to the analysis. The significance level of these essential items when only "strong" scores were used was a valuable measure of the completeness of the category.

Category I: Unity

As shown in Table 3, the experimental subjects scored significantly higher than the control subjects on the category of unity as a whole when the scores of individual items in all subcategories were combined (p less than .002 for all three methods of measurement). In other words there were only two chances in 1000 that this difference was due to chance rather than to psilocybin. The score distribution revealed that the experimentals had higher total scores and many more "strong" scores (maximum possible on various rating scales) than the controls, who had relatively few scores as high as "moderate" and a predominance of scores of "0".

Each subcategory was analyzed both as a combination of items and item by item in order to discover the contributing factors to the significance of the data as a whole.

Internal Unity

As shown in Table 4 the subcategory of internal unity as a whole was significant at the .002 level for all three methods of measurement. The score distribution revealed that with all three methods the experimentals had more total score and a predominance of scores at the top of the scales, while the controls had only a few scores as high as moderate and a predominance of scores of "0".

TABLE 3

Category I: UNITY

Combination of All Subcategories

Items	Subject group (n = 10)	Frequency Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
13 Post-drug:	Exper:	68	12	22	28	337	520	10	.001
	Contr:	1	11	18	98	65	520		
14 Follow-up:	Exper:	72	4	20	45	387	700	10	.001
	Contr:	0	9	12	120	45	700		
2 Content Analysis:	Exper:	9	5	2	14	39	60	9	.002
	Contr:	0	1	0	29	2	60		

TABLE 4

Category I: UNITY

Internal Unity

Items	Subject group (n = 10)	Frequency Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
4 Post-drug:									
	Exper:	24	3	7	6	113	160		
P72a, P73, P74, P9								10	.001
	Contr:	0	5	1	34	17	160		
6 Follow-up:									
	Exper:	33	2	8	18	178	300		
F18, F19, F33, F42, F43, F47								9	.002
	Contr:	0	4	3	53	16	300		
1 Content Analysis:									
	Exper:	6	3	0	1	24	30		
C7								9	.002
	Contr:	0	1	0	9	2	30		

The eleven individual items which measured this subcategory are listed in Table 5 with the probability of each that the higher scores of the experimentals were due to chance rather than psilocybin. All the individual items had a p less than .008 except F43 which is the same as F42 only with a negative rather than positive value judgment by the subject about the phenomenon of loss of self. The fact that F43 did not show a significant difference between experimentals and controls would imply that the experimentals regarded their experience of loss of self as more positive than negative. When the highest possible or "strong" scores were used in computing differences between pairs of experimentals and controls, only P74 (unity with ultimate reality) lost its significance (p less than .063). Perhaps this loss was due to the addition of the interpretive phrase, "ultimate reality," as was suggested by several subjects during the interviews. The items which were most essential to the definition of internal unity (loss of sense of self, loss of all sense impressions, and pure awareness) remained significant at the .04 level and most of the items were significant at the .01 level. All three methods of measurement were consistent.

The content analysis data illustrated these essential elements:

TABLE 5

LIST OF ITEMS USED TO MEASURE INTERNAL UNITY

		p values (for experimentals)	
		Using all scores:	Using only "strong" scores:
(1)	Post-drug questionnaire data (4 items):		
P9	Loss of self:	.001	.008
P72a	Sense of the loss of the multiplicity of all particular sense impressions:	.004	.016
P73	Pure awareness with no empirical distinctions (i.e., one is beyond the self-consciousness of sense impressions, yet one is not unconscious):	.002	.008
P74	Sense of unity with ultimate reality at the level described by 72a & 73:	.008	(.063)
(2)	Follow-up questionnaire data (6 items):		
F18	Loss of your own identity:	.004	.008
F19	Pure awareness beyond any empirical content:	.002	.004
F33	Fusion of the self into a larger undifferentiated whole:	.008	.032
F42	Loss of sense of self as a predominantly positive experience:	.004	.008
F43	Loss of sense of self as a predominantly negative experience:	(.13)	(.25)
F47	Freedom for the limitations of the self in connection with a unity or bond with what was felt to be all-encompassing and greater-than-self:	.004	.032
(3)	Content-analysis data (1 item):		
C7	Internal unity:	.002	.016

Experimental Subject RM:

> I saw the cosmos. It was all molten plastic. Then I knew that I must be somewhere there. Where was my self? What am I? Where am I in the real (plastic) world? Then I was afraid no more. My self is no one place, but in many places. It floats, I float. Body is not real. Only the adventurous self is real. The adventurous self floats into all Being, the orange plastic cosmos. It leaves the old ego behind. The old ego is behind but it glows like a far away harbor light. I can always return.

(Comment: This is a good example of lostness of self and unity with all Being, symbolized by "the orange plastic cosmos").

Experimental Subject KR:

> I found myself grunting in agreement or mumbling "Of course, it has always been this way" over and over again as the panorama of my life seemed to be swept up by this unifying and eternal principle.... I seemed to relinquish my life in "layers"; the more I let go, the greater sense of oneness I received. As I approached what I firmly believed to be the point of death, I experienced an ever greater sense of an eternal dimension to life. There seemed to be infinite possibilities of time and space.

Experimental Subject QX:

> I lapsed into a period of complete lostness of self that must have lasted for an hour but seemed very brief. This was a blank sensation, better still, a void....My experience seemed to be dominated by a sense of oneness, unity, and harmony.

(Comment: This resembles the classical phenomenological description of undifferentiated unity with pure awareness yet no specific content and loss of usual sense of self.)

The evidence from total scores of all items, frequency distribution, and individual item analysis has indicated that

psilocybin induced the phenomena of internal unity in the experimental subjects to a rather complete degree.

External Unity

As shown in Table 6, this subcategory was significant at the .016 level for all methods of measurement. The distribution of scores revealed that the controls hardly experienced the phenomena of external unity at all and none to more than a slight degree. The predominance of high scores for the experimentals was not so marked as in the case of internal unity. All individual items were significant at the .032 level except oneness through objects other than people (C8), which had a p greater than .25. C8 is more crucial to the definition of external unity than oneness through people (C9), unless the underlying unity of the whole external world were experienced through people as the means for the expression of this deep and broad unity of all things. For this to be the case, however, the highest scores on the judges' rating scale should have been used (i.e., "3's"), but for both C8 and C9, p is greater than .25 when only these top scores were used.

The dissolving of the subject-object dichotomy (P68) and loss of feelings of difference from objects (F25) are essentially the same phenomenon and were the only items which

TABLE 6

Category I: UNITY

External Unity

Items	Subject group (n = 10)	Frequency Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
4 Post-drug:									
	Exper:	14	4	8	14	80	160		
P68,P69,P70,P71								8	.008
	Contr:	0	0	4	36	5	160		
3 Follow-up:									
	Exper:	11	0	5	14	58	150		
F25,F37,F44								6	.016
	Contr:	0	0	1	30	2	150		
2 Content Analysis:									
	Exper:	3	2	2	13	15	60		
C8,C9								6	.016
	Contr:	0	0	0	20	0	60		

TABLE 7

LIST OF ITEMS USED TO MEASURE EXTERNAL UNITY

		p values (for experimentals	
		Using all scores:	Using only "strong" scores:
(1)	Post-drug questionnaire data (4 items):		
P68	Paradoxical dissolving of the subject-object dichotomy in spite of the empirical multiplicity of objects (they are still perceived as separate):	.008	.016
P69	Intuitive experience of the essences of objects:	.016	(.13)
P70	Sense of unity with these objects:	.008	(.13)
P71	Felt awareness of the life or living presence in all things:	.032	(.25)
(2)	Follow-up Questionnaire data (3 items):		
F25	Loss of feelings of difference from objects:	.016	.032
F37	Intuitive experience of the essences of objects:	.032	(.63)
F44	Sense of unity with objects:	.032	(.5)
(3)	Content-analysis data (2 items):		
C8	Oneness through external objects other than people:	(.25)	(1)
C9	Oneness through people:	.032	(.25)

remained significant at the .032 level under such a rigorous treatment of the data. This phenomenon is an important element in the experience of external unity and is alone enough to make the data from this category qualify as an example of this subcategory of the mystical typology. Against this evidence must be placed the lack of confirmation from the judges. The content analysis data showed a greater depth of underlying cosmic unity or oneness through people than through objects.

Experimental Subject HQ:

> A couple of times I kicked against YS's leg accidentally, and I opened my eyes, for my foot seemed to combine with his left leg.

Experimental Subject QX:

> I remained in a bent a prayerful position, but I was not praying. What seemed to be happening was my becoming complete, i.e., my body was whole or one. My arms seemed to merge into my body, yet I knew I still had arms. I could rub my hands into my legs, yet I still had hands. Everything was a part of the other yet distinct in itself. From this, I moved to a oneness with the pews, both the one I was sitting on and the one in front of me. The pew seemed to be giving itself to me when I would turn in my seat or assume different positions. It seemed to "give" to my movements all the while aiding and giving to my comfort. Even my legs which touched against the pew in front of me seemed to find an extremely giving and helping friend in the wooden pew.
>
> (Comment: These two examples of the dissolution of the subject-object dichotomy do not have the cosmic dimension at this point in the experience.)

Experimental Subject KR:

> Early in the sequence, the "I"-"You" structure broke down both in relation to my inner experience and to the others in the room. A sense of "we-ness" took its place eventually.

Experimental Subject QX:

> My attention was directed toward L6 when I felt a sensational oneness with him. I felt he and I had seen and interpreted life as it truly was meant to be understood, i.e., as man in harmony and love and oneness through all eternity.

For more examples of oneness through people see the section on love in Category III below.

The strongest evidence for external unity is from the questionnaire data because of the dissolution of the subject-object dichotomy. The content analysis failed to show the depth and breadth necessary for the most complete level. We conclude, therefore, that the phenomenon of external unity did occur in the experimental subjects but in an incomplete way.

Supplementary Phenomena

The items in this subcategory as explained in the typology are corroborative, but not definitive, phenomena which may occur in connection with either internal or external unity or both. Table 9 lists these items and their significance levels which indicate that the experimentals showed signifi-

cantly higher scores than the controls (p less than .016) for most individual items. Only P77 (consciousness of a "Beyond" or "More") and P67 (sense of being a part of a larger whole) showed no significant difference between experimentals and controls. During the interviews several subjects commented that the "Beyond" or "More" seemed to imply a theological interpretation which they were not ready to make. Only items F36 (feeling of completeness) and F49 (unity with ultimate reality) lost significance when only "strong" scores were used. In F49 the interpretive phrase "ultimate reality" (cf. P74) may have been responsible.

As seen in Table 8 the scores of the experimentals compared to those of the controls followed the same pattern in score distribution and significance level of difference, as for the category of unity as a whole (p less than .001). We conclude that these closely related items strengthen, and certainly do not weaken, the conclusions made about the sub-categories "internal" and "external unity."

TABLE 8

Category I: UNITY

Supplementary Phenomena

Items	Subject group (n = 10)	Frequency Distribution (Number of times scored)				Total Score (10 subjects)		Sign Test Statistics	
		Strong	Moder.	Slight	None	Actual	Maximum	N	p
5 Post-drug:									
P77, P78, P79, P96a, P67	**Exper:**	30	5	7	8	144	200	10	.001
	Contr:	0	6	13	30	43	200		
5 Follow-up:									
P31, P32, P36, P41, P49	**Exper:**	28	2	7	13	151	250	10	.001
	Contr:	0	5	8	37	27	250		

TABLE 9

LIST OF SUPPLEMENTARY PHENOMENA OF UNITY

		p values (for experimentals)	
		Using all scores:	Using only "strong" scores:
(1)	Post-drug questionnaire data:		
P77	Consciousness of a "Beyond" or "More":	(.15)	(.15)
P78	Expansion of usual personal consciousness to other dimensions within the self:	.001	.008
P79	Expansion of usual personal consciousness to other dimensions beyond the self:	.004	.004
P96a	Sense of belonging to a new and greater unity during the experience:	.008	.063
P67	Sense that what is experienced forms part of a larger whole:	(.26)	(.26)
(2)	Follow-up questionnaire data:		
F31	Expansion of usual personal consciousness to other dimensions within the self:	.001	.001
F32	Expansion of usual personal consciousness to other dimensions beyond the self:	.004	.016
F36	Feeling of completeness:	.004	(.13)
F41	Sense of belonging to a new and greater unity:	.008	.016
F49	Unity with ultimate reality:	.016	(.13)

Category II: Transcendence of Time and Space

As is shown in Table 10, this category as a whole had significantly higher scores for experimentals than for controls (p less than .001 for all three methods of measurement). The distribution of scores showed a predominance of high scores for the experimentals and "0's" for the controls. On the basis of total scores, controls experienced these phenomena to a negligible extent. As shown in Table 11, when the subcategories of time and space were analyzed separately, all the differences between experimentals and controls were in the same direction as in the analysis of the category as a whole (p less than .001 for time and less than .004 for space). In other words there were less than four chances in 1000 that this transcendence of time and space was due to chance rather than psilocybin.

The individual items which were used to measure the subcategories of time and space are shown in Table 12. All individual items were significant in the same direction (p no greater than .004 for any item). When only the "strong" level scores were used, all the items remained significant on at least the .016 level.

Examples of the loss of sense of time were numerous in the content-analysis data:

TABLE 10

Category II: TRANSCENDENCE OF TIME AND SPACE

Combination of all Subcategories

Items	Subject group (n = 10)	Frequency Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
5 Post-drug:									
	Exper:	39	0	4	7	162	200		
								10	.001
	Contr:	0	2	3	45	12	200		
5 Follow-up:									
	Exper:	37	3	5	5	195	250		
								10	.001
	Contr:	0	3	5	42	17	250		
2 Content Analysis:									
	Exper:	16	4	0	0	56	60		
								10	.001
	Contr:	0	0	4	16	4	60		

TABLE 11

Category II: TRANSCENDENCE OF TIME AND SPACE

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Transcendence of Time:									
2 Post-drug:	Exper:	17	0	2	1	71	80	10	.001
P75, P80	Contr:	0	2	1	17	8	80		
3 Follow-up:	Exper:	25	0	3	2	125	150	10	.001
F1, F26, F35	Contr:	0	3	2	25	12	150		
1 Content Analysis:	Exper:	8	2	0	0	28	30	10	.001
C1	Contr:	0	0	2	8	2	30		
Transcendence of Space:									
3 Post-drug:	Exper:	22	0	2	6	91	120	8	.004
P76, P81, P72	Contr:	0	0	2	28	4	120		
2 Follow-up:	Exper:	12	3	2	3	70	100	9	.002
F2, F34	Contr:	0	0	3	17	5	100		
1 Content Analysis:	Exper:	8	2	0	0	28	30	10	.001
C2	Contr:	0	0	2	8	2	30		

TABLE 12

LIST OF ITEMS USED TO MEASURE TRANSCENDENCE OF TIME AND SPACE

	p values (for experimentals)	
(1) Transcendence of time:	Using all scores:	Using only "strong" scores:
a. Post-drug questionnaire data:		
P75 Transcendence of time in the sense defined by items 72a to 74 (internal unity):	.002	.004
P80 Transcendence of time in the sense defined by items 77 to 79 (supplementary phenomena of unity)	.001	.002
b. Follow-up questionnaire data:		
F1 Loss of usual time sense:	.001	.001
F26 Eternity:	.002	.008
F35 Timelessness:	.004	.008
c. Content-analysis data:		
C1 Loss of usual sense of time:	.001	.004
(2) Transcendence of space:		
a. Post-drug questionnaire data:		
P72 Paradoxical transcendence of space as defined in items 68 to 71 (external unity):	.004	.008
P76 Transcendence of space in the sense defined by items 72a to 74 (internal unity):	.004	.008
P81 Transcendence of space in the sense defined by items 77 to 79 (phenomenon of unity):	.004	.004
b. Follow-up questionnaire data:		
F2 Loss of usual awareness of where you were:	.002	.016
F34 Spacelessness:	.004	.016
c. Content-analysis data:		
C2 Loss of usual sense of space:	.001	.004

Experimental Subject HQ:

It seemed that I was there for the longest time. I recall looking at the clock again and again, but it didn't change.

Experimental Subject SE:

I kept looking at my watch and thinking, looking and thinking, looking and thinking--time seemed to stand still, to be endless.

Experimental Subject QX:

Matter and time seemed to be of no consequence. I was living in the most beautiful reality I had ever known, and it was eternal.

Experimental Subject CZ:

Space and position were meaninglessness--I could as well have been wandering lost on the moon.

Experimental Subject GP:

The place was nowhere I had ever been, nor any place that I belonged in. I was afraid sometimes that there was nothing outside, or before, or after...I did not know where I was, nor when it was, nor where I had come from nor how long I had been there.

Experimental Subject EB:

Somewhere about this time I lost contact with myself... There was no center; there was no sense of time; there was no sense of space in the physical sense. I just felt a sense of unity with an endless world of abstract, colorful beauty which didn't seem to be going anywhere, but just was...

(Comment: Some of these examples show that transcendence of time and space is an integral part of the experience of internal unity.)

We conclude from the data presented in this section

that the transcendence of time and space, corresponding to the most complete degree defined by our typology of mysticism, was experienced by the experimental subjects who took psilocybin.

Category III: Deeply Felt Positive Mood

As shown in Table 13, the experimental subjects scored significantly higher than the controls when the scores of individual items in both subcategories of deeply felt positive mood were combined (p less than .020 for all three methods of measurement). The frequency distribution of scores revealed that all of the highest scores were recorded by the experimental subjects, and the controls recorded the great majority of the "0's". In the middle range of the rating scales, however, the balance was more even between experimentals and controls.

For more precise analysis, the two subcategories were treated separately.

The most universal phenomena (Joy, Blessedness, and Peace)

As seen in Table 14, the combined scores of the sixteen items describing joy, blessedness, and peace were significantly higher for experimentals than controls from all three methods of measurement (p less than .020). Although the controls scored these phenomena on the lower ranges of the scoring scales, the highest scores were exclusively from the experimentals as seen from the total scores and frequency distribution. These items are listed in Table 15. All items which were aspects of joy were significant at the

TABLE 13

Category III: DEEPLY FELT POSITIVE MOOD

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
12 Post-drug items:	Exper:	40	33	23	28	284	400	9	.020
	Contr:	3	36	27	54	167	400		
10 Follow-up:	Exper:	50	5	15	21	269	500	9	.020
	Contr:	6	15	24	45	115	500		
3 Content-Analysis:	Exper:	9	4	7	10	42	90	9	.002
	Contr:	0	0	3	27	3	90		

TABLE 14

Category III: DEEPLY FELT POSITIVE MOOD

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Joy, Blessedness, Peace:									
7 Post-drug:									
P39, P52, P44,	Exper:	23	13	17	17	158	280		
P50, P14, P7, P49	Contr:	0	11	16	43	60	280	9	.020
7 Follow-up:									
F13, F11, F29,	Exper:	32	4	9	16	173	350	9	.020
F39, F40, F12, F45	Contr:	4	8	11	37	59	350		
2 Content Analysis:	Exper:	7	2	4	7	29	60	9	.020
C3, C5	Contr:	0	0	1	19	1	60		
Love:									
5 Post-drug:									
P41, P43, P90a,	Exper:	17	16	6	11	126	200	8	(.15)
P122, P124	Contr:	3	25	11	11	107	200		
3 Follow-up:	Exper:	18	1	6	5	96	150	10	.055
F24, F28, F51	Contr:	2	7	13	8	56	150		
1 Content Analysis:	Exper:	2	2	3	3	13	30	8	.035
C4	Contr:	0	0	2	3	2	30		

TABLE 15

LIST OF ITEMS USED TO MEASURE THE MOST UNIVERSAL PHENOMENA OF DEEPLY FELT POSITIVE MOOD (JOY, BLESSEDNESS, AND PEACE)

	p values	
	Using all scores:	Using only "strong" scores:.
(1) Post-drug data (7 items):		
P39 Exultation:	.020	.032
P44 Exuberance:	.002	(.13)
P50 Overflowing energy:	.008	(1)
P52 Ecstatic joy:	.004	(.063)
P14 Sense of well-being:	(.38)	(.38)
P47 Blessedness:	(.15)	(.15)
P49 Peace:	(.09)	(.09)
(2) Follow-up data (7 items):		
F11 Ecstasy:	.004	.016
F13 Happiness:	(.23)	(.23)
F29 Delight:	.016	.016
F39 Joy:	.016	.032
F46 Exultation:	(.37)	(.37)
F12 Peace:	(.50)	(.50)
F45 Blessedness:	(.11)	(.13)
(3) Content-analysis data (2 items):		
C3 Joy:	.020	(.063)
C5 Peace or blessedness:	(.063)	(.13)

.020 level except F13, happiness. No individual items under blessedness and peace were significant (p greater than .063 in all cases). When only the "strong" scores were used, exultation (P39), ecstasy (F13), delight (F29), and joy (F39) remained significant (p less than .032), but important items which lost their significant difference were ecstatic joy (P52) and joy (C3) (p less than .063).

The content analysis data also reflected the joy that was experienced by the experimental subjects as a result of psilocybin:

Experimental Subject KR:

> Having died only to have life given back gave me a tremendous sense of exultation and manliness. I grasped the back of the pew or wooden upright in front of me as I exclaimed and I delighted in the heightened sensations of all five senses.

Experimental Subject GP:

> I heard PK (or whoever it was) return to the chapel and play "Jesus Christ is Risen today, Hallelujah!" I had a brief but violently intense feeling of joy.

Experimental Subject FK:

> Then I read the Scripture, put out the candles (which I believe to be symbolic of the crucifixion of Christ), and after more blackness, found myself in the pulpit, preaching about love and peace.... I attempted to play the organ, wanting to play "Christ the Lord is Risen Today," being motivated by a strange sense of joy in the reality of this event. (Comment: This example shows the close relationship between various elements of positive mood as well as their possible close interrelation with sense of sacredness.)

Other evidence of blessedness and peace combined with a sense of sacredness is as follows:

Experimental Subject KR:

> Opening my eyes I noticed that tears were streaming down Ll's face, that we were all caught up in a glow of holy light from off the altar, that we were all participating in one great cosmic drama of all races, creatures and eras, in short, that we were experiencing beatitude.

Experimental Subject QX:

> There seemed to be complete support from all the surrounding elements; no hostility at all was present in anything. I would on occasion lower my head and close my eyes as if to pray and would seem to be in the realm of eternity. It was sheer bliss and something I didn't want to leave.

Control Subject BL:

> Such communion with God as I experienced on Good Friday is not quite the same as another experience with the Divine which I describe through such terminology as "being grasped," or "melting." I did not approach this experience of "exalted or divine tenderness" which in the past has caused me to feel one with everything that is. The peace which comes through this experience was missing from the worship Service on Good Friday.

This control subject did not experience the most profound peace he has ever known but he did score peace and blessedness at a level of "moderate" degree. Other controls also scored these items. The experimentals in general did not score peace to the most complete degree as shown by the lack of significant difference between experimentals and

controls on each individual item which measured these phenomena.

We conclude that although the subcategory as a whole showed a significant difference between experimentals and controls, the difference was due to the unusually intense joy which was part of the psilocybin experience. Because all the data were not consistent in measuring this joy at the highest intensity, we conclude that the experience of the experimentals was not the most complete example of the joy described by our typology for this category.

Closely Related Phenomena (Love)

Although love is not one of the universal characteristics of the typology of mysticism, the experience of love may occur in connection with joy, blessedness, and peace. As seen in Table 14, the experimentals experienced the phenomena of love more than the controls at a significance level of .055 in the follow-up data and .035 in the content-analysis data. The experimentals had higher total score and had more strong scores with each method of measurement. The reason for no significant difference in the post-drug data was that the controls also scored this phenomenon (total score of 126 for experimentals and 107 for controls).

The nine items which were used to measure the phe-

nomenon of love are listed in Table 16. Individual items were mostly not significant at the .05 level except for P41, F24, and C4 (p less than .035). The only item which remained significant when only "strong" scores were counted was F24, deep interpersonal relations (p less than .035).

Cosmic love such as love of God was not significant. Psilocybin seemed to increase depth of interpersonal relationships on a very human level both for experimentals and the controls with whom they interacted.

Some examples of such love from the content-analysis data are as follows:

Experimental Subject EB:

> There was a certain feeling that all people were good, and that I wanted to love them for it.

Experimental Subject FK:

> However, my strongest feelings were toward L3, who in a sense wanted to help me. Never before have I sensed such a feeling of filia (Greek for love, i.e., friendship); he represented the forces of good, forcing me to face my frailty and human fallibility;... I felt that the only one who really understood me when I was "under", was L3, for he understood what I was going through, for he had undergone the same experience himself. This alone, not counting the other far more significant aspects of my experience, would make the situation of real value.

TABLE 16

LIST OF ITEMS USED TO MEASURE LOVE

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data (5 items):		
P41 Love:	.035	(.063)
P43 Tenderness:	(.66)	(.66)
P90a Feeling of love toward others:	(.38)	(.38)
P122 Did you particularly like or feel close to either of leaders?:	(.11)	(.25)
P124 Did you particularly like or feel close to any participant in the experiment?:	(.35)	(.35)
(2) Follow-up data (3 items):		
F24 Deep interpersonal relations with other people present:	.035	.035
F28 Love:	(.26)	(.26)
F51 Love of God or Christ:	(.26)	(.26)
(3) Content-analysis data (1 item):		
C4 Love:	.035	(.25)

Experimental Subject QX:

> I looked up at the front of the Chapel but the light seemed to be too bright for my eyes and I had to lower my head. I was overcome by a feeling of oneness with L6 and FK. I seemed to be caught up in a realm of complete understanding of them and with them.
>
> All this time, I felt a strong pull to FK--which said to me he needed my support if nothing else. I saw him as himself but also as representing all men, and I knew deep within that I could not turn my back on him. At that time, I went over and sat by him. I did not speak a word. I just sat in a chair between him and L6. Another fellow was sitting on the sofa with FK, and during one of the songs he and FK clasped hands and this was very beautiful and significant to me, for I saw two men at one with each other in genuine love existing in eternity.

(Comment: The depth of oneness expressed by QX is an example of the oneness through people which can be part of the subcategory "external unity." This example shows the relationship between the two subcategories of "love" and "external unity."

Control Subject NJ:

> FK went to the altar, turned around, and showed us his face--a face I had never seen before on a human being. This caused the service to be more meaningful than ever before--why? Although FK moved up to the altar with a vigorous drive, clutched the cross firmly, exhibiting such strength, and at first seemed as if he was going to tear everything from one end to the other, he turned and showed himself differently. His face showed as much love, gentleness, sincerity and strength to bear real suffering as any face has ever shown.

(Comment: NJ's experience of love was caused by the experimental subject FK's experience.)

We conclude, therefore, that although the category of "deeply felt positive mood" was significant as a whole for

all three methods of measurement, psilocybin produced the most significant difference between experimentals and controls in this category in the experience of joy. There was also a difference in the experience of love on a human level for the most part, but not so significantly, and the experience of blessedness and peace was not significantly different between experimentals and controls.

Category IV: Sense of Sacredness

As seen in Table 17, the combined scores of all items related to this category were significantly higher for the experimentals than for the controls from the post-drug data (p less than .020). From the follow-up data, the significance level was .055, and the content-analysis data showed no significant difference (p equal to .37). In other words, the evidence is very suggestive but not conclusive that psilocybin induced a sense of sacredness in the experimental subjects. In all methods of measurement, a basic pattern in the data was reflected by the frequency distribution of scores. The top-of-the-scale scores were made almost exclusively by the experimentals. The controls, however, had more total middle-range scores than the experimentals did.

The twenty-two items which were used to measure sacredness are listed in Table 18 with the probability that the difference found in each case was due to chance rather than psilocybin.

Only eight out of these twenty-two individual items showed a significant difference between experimentals and controls at the .035 level, and one more item (humility - P61) was close to being significant (p equal to .062).

TABLE 17

Category IV: SENSE OF SACREDNESS

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
13 Post-drug:	Exper:	52	23	22	33	304	520	9	.02
	Contr:	1	25	55	49	173	520		
8 Follow-up:	Exper:	43	5	12	20	231	400	10	.055
	Contr:	3	10	30	37	99	400		
1 Content Analysis:	Exper:	4	1	0	5	14	30	8	(.37)
	Contr:	0	2	4	4	8	30		

TABLE 18

Category IV: SENSE OF SACREDNESS

(1) Phenomena with implicit indication of sense of sacredness:

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
a. Post-drug data: (6 items):		
P7 Sense of wonder:	.004	(.13)
P56 Sense of awe or awesomeness:	.011	.016
P58 Mysterious fascination in spite of terror or fear (in the sense of a shaking or trembling in the utmost depths of your inner being):	.008	(.13)
P59 Sense of the wholly-otherness of what was met in the experience:	.035	(.063)
P6 Sense of finitude:	(.23)	(.23)
P13 Sense of humility:	(.35)	(.35)
b. Follow-up data (2 items):		
F22 Awe	.011	.011
F14 Sense of presence of what can only be described as nameless:	.032	(.063)

(2) Phenomena with explicit mention of holy, sacred, or divine:

a. Post-drug data (7 items):		
P61 Sense of profound humility before the majesty of what was felt to be sacred or holy:	(.063)	(.063)

(Cont.)

TABLE 18 (Cont.)

		p values (for experimentals) Using all scores:	Using only "strong" scores:
P60	Sense of your own finitude in contrast to the infinite:	(.090)	(.090)
P77	Consciousness of a "Beyond" or "More":	(.15)	(.15)
P62	Sense of presence of what was felt to be sacred or holy:	(.64)	(.64)
P57	Sense of reverence:	(.78)	(.78)
P83	Contact or bond with God:	(.64)	(.64)
P82	Sense of the presence of God:	(.83)	(.83)
b. Follow-up data (6 items):			
F48	Sense of being at a spiritual height:	.016	.032
F30	Sense of your own finitude in contrast with the infinite:	.020	.032
F51	Love of God or Christ:	(.26)	(.26)
F15	Sense of sacredness with which you regarded your experience:	(.37)	(.37)
F40	Sense of reverence:	(.50)	(.50)
F50	Sense of the presence of God:	(.50)	(.50)
c. Content-analysis data (1 item):			
C6	Sense of sacredness:	(.37)	(.37)

When only "strong" scores were used, the items which remained significant were: awe (F56 and F22), sense of finitude in contrast with the infinite (F30), and spiritual height (F48)--p less than .032 for all four items. Sense of wholly otherness (P59) and sense of nameless presence (F14) were almost significant (p less than .063) under this rigorous analysis. The other two items which complete the list of eight significant ones were: wonder (P7) and mysterious fascination in spite of terror or fear (P58).

Six of these eight significant items were phenomena with an implicit indication rather than explicit mention of the holy, sacred, or divine. The items which were most explicit, such as reverence (P57 and F40), sacredness (F15), sense of Presence (P62), consciousness of a "Beyond" (P77), or those which mention God (P82, P83, F50, and F51).were <u>not</u> significant at the .05 level.

For the purpose of a more precise analysis, the explicit and implicit items in the post-drug and follow-up data were combined separately. As shown in Table 19, the experimentals scored significantly higher than the controls on the implicit group (p less than .02 for both methods) but not on the explicit (p less than .09 for both questionnaires).

TABLE 19

Category IV: SENSE OF SACREDNESS

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Phenomena with implicit indication of sense of sacredness:									
6 Post-drug: P6, P7, P13, P56, P58, P59	Exper:	24	15	13	8	159	240	9	.02
	Contr:	1	8	22	29	62	240		
2 Follow-up: F14, F52 (22)	Exper:	12	2	2	4	66	100	10	.011
	Contr:	0	1	6	13	14	100		
Phenomena which explicitly mention the Holy, Sacred, and Divine:									
7 Post-drug: F57, P60, P61, P62, P77, P82, P83	Exper:	28	8	9	25	145	280	9	(.09)
	Contr:	0	17	33	20	111	280		
6 Follow-up: F15, F30, F40, F48, F50, F51	Exper:	31	3	10	16	170	300	9	(.09)
	Contr:	3	9	24	24	85	300		

In other words there were only two chances in one hundred that this implicit phenomena experienced by the experimentals was not due to psilocybin.

The explicit items are more conventionally "religious," while the implicit items are more representative of the basic phenomenology of the "holy" described by Rudolf Otto.[1] Both explicit and implicit are examples of the category of sacredness as defined by our typology. The experimental subjects in our experiment experienced more implicit phenomena than did the control subjects. The phenomena of this category that the controls did experience were mainly explicit (see distribution of scores in the tables). Such an occurrence could have been expected, because the experiment was conducted with a worship service for setting and on a day particularly meaningful for Christian theological students who were the subjects. This could explain the lack of significant difference in the content-analysis data.

There were examples of the sense of sacredness in the content-analysis data, in both experimentals and control subjects, as the following excerpts show:

---

[1] Idea of the Holy, pp. 24-35.

Experimental Subject RM:

> My eyes began to water and there was a wholesome beauty as I massaged the soft fleshy eyebags in my tears. I strained to fall on my knees with the meaningfulness of my younger days in lower school. My cowardliness was finally overcome and true humility ensued. The organ music blended beautifully and the scripture reading was the chorus of angels in bass clef.

Experimental Subject GP:

> I began the service with a feeling of intense devotion, and another strange, detached feeling... I directed my thoughts to the Passion Story, and saw Christ carrying his cross in a procession. Someone stepped in to help him, then I stepped in, too.

Experimental Subject KR:

> Rev. X's voice and manner set a definite mood in me. He was at one with the total experience of the divine and holy in that chapel.

Control Subject IA:

> My first reaction to the chapel was its appropriateness for inducing a religious experience. The altar display, the darkness, and the solemness of the congregation, were immediately for "getting in tune with God." Later Rev. X's penetrating voice, combined with his very meaningful prayers and devotions, brought me to a spiritual height for the week.

Control Subject BL:

> I immediately began to meditate and pray and read my New Testament--I Cor. 13...I thought about the possibility of exploring new dimensions of one's self, and I prayed for God through Christ to be Lord of this dimension of being, for certainly no dimension of reality escapes His jurisdiction. Although I was curious about the experiences of others around me,

yet I was more concerned with my own private worship.

When we entered the chapel, I began to pray for forgiveness and to praise God for the blessings of life. Although I did look around me on occasion, yet I found myself very much able to concentrate on my own private worship-service. As the organized service began, I found myself calmly participating in the richness of its structure. Often I would drift off into my own private prayer and devotional response, yet I was very able to find meaning in the long passages of prayer and poetry which I did hear. It seems that I was able to escape the distractions which usually hamper corporate worship, and to "lose myself" in the dimension of the religious. When interruptions did occur in my concentration, I did regain a certain intellectual curiosity, yet it lasted for only short durations of time. I easily re-entered the world of prayer and communion....In speaking of the worship service itself, I must stress that God seemed very close to me at this time. I found myself freed from the intellectual and conceptual dimensions of myself, to a large extent, and able to plunge into the emotive-intuitive dimension where my response was often that of "listening" to God. Very seldom were my conscious prayers "forced" in any way; rather, they followed naturally from "listening."

Control Subject MC:

The chapel service was a meaningful one for me. ...Though the religious service was meaningful...I cannot remember what Rev. "X" said, only what he did. He did move me, I remember, especially in his Scriptural readings. I was able to feel being with Christ. Christ stood out to me as he has only a few times before.

Control Subject NJ:

As to the meaningfulness of the service--well, here goes. At first, the service became as any prior service. Then Rev. "X" caught me up into the real power and life of it (was he tremendous!).

Item P63, "sense of absence of anything that was felt to be holy, sacred, or divine," was not significant (p equal to .35). This is also indirect support for the conclusion that some degree of sacredness was experienced by both experimentals and controls.

The evidence has indicated, however, that sacredness was experienced more by the experimentals than by the controls, particularly the implicit type of phenomena, of which awe was an outstanding example. But from the lack of significance in the content-analysis data (p equal to .37), and the borderline significance of the combined follow-up data (p less than .055), we hesitate to conclude that sacredness was experienced by the experimental subjects in the most intense and complete way as defined by the mystical typology. That there was significant implicit phenomena in the experience of experimental subjects who had psilocybin has been demonstrated.

Category V: Objectivity and Reality

When all items which contributed to this category were combined, as shown in Table 20, p was not over .020 for any method of measurement. The distribution of scores showed a predominance of high scores for the experimentals, and "0's" for the controls.

All the items which contributed to this category are listed in Table 21 with the probability that the difference between scores of experimentals and controls was due to chance rather than to psilocybin. When individual items were examined, certainty of encounter with ultimate reality (P33, F17, and F70), intellectual illumination (P54 and F10), gain of some type of intuitive knowledge (P18, P23, F7, F27 and C11), increased capacity of mind (F4) and intensity and totality of the experience (P37, P38, P55, F5, F6, F38) all had significantly higher scores for the experimentals than for controls (p was less than .035 for each of these items). One item involving the retention of the certainty about the encounter with ultimate reality (P34) and one item involving intellectual illumination (P53) had p values of .062. This slight lack of significance was counterbalanced by the five other items measuring the same specific phenomena with p values all less than .035. Item F3 (certainty of the reality

TABLE 20

Category V: OBJECTIVITY AND REALITY

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Combination of all phenomena:									
12 Post-drug:	Exper:	55	11	17	37	278	480	10	.011
	Contr:	1	15	32	72	92	480		
11 Follow-up	Exper:	77	7	5	21	393	550	10	.001
	Contr:	6	16	18	70	101	550		
2 Content analysis:	Exper:	5	8	0	7	31	60	9	.020
	Contr.	0	0	1	19	1	60		
Most essential phenomena:									
5 Post-drug: P33,P34,P53,P54	Exper:	21	3	4	12	99	160	8	.004
	Contr:	1	5	11	23	36	160		
5 Follow-up: F10,F17,F23, F27,F70	Exper:	28	6	3	13	155	250	9	.020
	Contr:	0	3	7	40	19	250		
2 Content analysis: C11,C12	Exper:	5	8	0	7	31	60	9	.020
	Contr:	0	0	1	19	1	60		

TABLE 21

LIST OF ITEMS USED TO MEASURE OBJECTIVITY AND REALITY

(1) The most essential phenomena:	p values (for experimentals) Using all scores:	Using only "strong" scores:
a. Post-drug data:		
P33 Sense of certainty or conviction of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really real) at the time of the experience:	.020	.020
P34 Sense of certainty or conviction of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really real) now (in looking back):	(.062)	(.062)
P53 Intellectual illumination:	(.062)	(.063)
P54 Retention of such illumination after the experience:	.008	(.063)
b. Follow-up data:		
F27 Gain of insightful knowledge experienced at an intuitive level:	.004	.004
F17 Certainty of encounter with ultimate reality (in the sense of being able to "know" and "see" what is really real):	.008	.016
F70 You are convinced now, in retrospect, that you encountered ultimate reality in your experience (i.e., that you "knew" and "saw" what was really real):	.016	.032
F10 Intellectual illumination:	.035	.032
F23 Communion with ultimate reality:	(.227)	(.227)

TABLE 21 (Cont.)

LIST OF ITEMS USED TO MEASURE OBJECTIVITY AND REALITY

	p values (for experimentals)	
c. Content-analysis data:	Using all scores:	Using only "strong" scores:
C11 Insights into being and existence in general:	.004	(.063)
C12 Insights into personal finite self:	(.11)	(.25)
(2) Supplementary phenomena:		
a. Post-drug data (8 times):		
P37 Intensity of the response to ultimate reality:	.004	.008
P38 Totality of the response to ultimate reality:	.016	.016
P55 Sense of being grasped and dealt with:	.004	(.063)
P18 Sense of having known the universe in its wholeness:	.016	(.063)
P23 Sense of ultimate goodness as the basis of reality:	.035	(.063)
P24 Intuitive knowledge of your immortality:	(.11)	(.11)
P1 Seeing symbolic meanings of things:	(.18)	(.18)
P4 Feeling of being very wise, knowing everything:	(.23)	(1)
b. Follow-up data (6 times):		
F5 Intensity of your response to the experience:	.001	.001
F6 Totality of the response to the experience:	.001	.001
F38 Sense of being grasped and dealt with by the experience:	.001	.002
F4 Enhanced capacity of mind:	.008	.008
F7 Sense of having known the universe in its wholeness:	.016	(.063)
F3 Certainty of the reality of what was experienced:	.020	.020

of the experience) was also significant at the .02 level, but was not listed as essential because a reality other than ordinary reality is not specifically mentioned. Most controls, in fact, rated this item as "4" ("strong"--similar to other strong experiences of reality), and most experimentals rated it as "5" ("very strong"--stronger than ever before in my life). Other individual items which were not significant were: seeing symbolic meanings (P1), knowing everything (P4), knowledge of personal immortality (P24), communion with ultimate reality (F23), and psychological insight (C12). All these items received some scores from the experimentals but not enough to show a significant difference from the controls. P1, P4, and P24 are clearly supplementary when compared to the a priori definition of the category, and not essential. C12 compared to C11 showed that the intuitive insight gained through the experience was regarded by the experimentals as more philosophical-religious than personal-psychological.

When these 18 individual items which were significant were analyzed most rigorously by only counting the "strong" level scores, the p values of P54, P18, P23, P55, F7, and C11 rose to .063. For the other 12 items, p remained less than .035.

A more precise analysis of this category, however, was obtained when those items which corresponded most closely to the a priori definition of the category from the typology were combined separately. These items have been listed under the subcategory, "most essential phenomena." As shown in Table 20 these basic items as a group were significant at the .02 level for all methods of measurement. The total scores and frequency distribution of scores followed the same pattern as did the combined scores in the same table.

Seven out of ten of these essential items were significant (p less than .035) and five of these seven remained significant when only "strong" scores were used (p less than .032). Of these five most important items, four were from the follow-up data after six months; one (P33) was from the post-drug data. Even under this most rigorous analysis, all of the rest of these ten items were almost significant (p less than .063). Item C11 from the content-analysis data (insights from being and existence in general) was in this last group. This loss of significance for the content-analysis data raises some doubt as to the completeness of the category as experienced by the experimentals. Individual item P70, however, was very strong evidence for this category because it measured after six months the retention of the certainty that ultimate reality had indeed been encountered (significant at the .032 level when only "strong" scores were used).

The content-analysis material itself illustrated this category, as the following examples show:

Experimental Subject HQ:

> I felt I was at the real level of being.

Experimental Subject QX:

> I finally determined the truth was in man and that all his seeking was in vain and absurd, for it was not ultimately important what man knew intellectually but rather that he was at one with himself and his fellow man, i.e., in harmony and unity and love with mankind....Everything seemed to be more real and purposeful than I had ever known before.

(Comment: These two examples indicate the basic distinction between "ultimate" reality and "ordinary" reality.)

Experimental Subject FK:

> Of first significance was the feeling of a profound religious "call"--the first I think I have ever really had. Before, I just felt as if I should enter the ministry, but now I "know" that I must. ...up to this time, I have never known the real meaning of the Christian truth--I have overintellectualized it, and have not involved myself in its eternal meaning and significance.

(Comment: This example also has strong overtones of the category "sense of sacredness.")

Experimental Subject FK:

> I would most emphatically emphasize this: I was

> helped in the liberation of previously repressed or inhibited areas of my life. That which was just a conception, was now made real. I had realized that one of my problems was my far-reaching egocentricity--for the first time, I truly felt it, in the whole of my being.

Experimental Subject KR:

> The experiences are not unpleasant which confirms my belief that the Self (Jung's term for the integrating principle in the collective unconscious) has been further released in me toward greater wholeness.

(Comment: The certainty of intuitive-psychological knowledge of self in the last two examples represented a very meaningful kind of ultimate reality for these subjects.)

The evidence taken together certainly indicates that phenomena corresponding to that described in our typology did occur and to a marked degree in the form of most essential elements as well as some supplementary ones. The lack of consistency, however, in all three methods of measurement when only "strong" scores were analyzed makes not fully certain the conclusion that the experimentals experienced the most complete form of this category.

We thus conclude that the phenomena described by the category "objectivity and reality" did occur significantly more in the experimentals who received psilocybin than in the controls who did not, as judged from analysis of the essential items alone as well as in combination with the

supplementary ones. Evidence showed that the experience of this category was very close to, but not quite identical with, the most complete form of the mystical typology.

Category VI: Paradoxicality

As seen in Table 22, the experimentals scored significantly higher than the controls in the phenomena of paradoxicality for all three methods of measurement (p less than .004). The experimentals had more "strong" ratings than the controls, as demonstrated by the frequency distribution of scores. In other words, there are only four chances in 1000 that this difference between experimentals and controls was not enhanced by psilocybin.

All phenomena which were used to measure paradoxicality are listed in Table 23. All individual items were significant at the .016 level except F73. The interviews revealed the reason for this apparent discrepancy. The wording of this item made the statement untrue for most subjects because of the words, "You have been accused." Subjects who later were found to be experimentals stated that they had not been accused of logical contradiction because they had not even tried to describe their experience to someone who would be unsympathetic enough to accuse them of such contradiction. These subjects readily admitted the difficulty of being strictly logical in descriptions of their experience. The content-analysis data and other items

TABLE 22

Category VI: PARADOXICALITY

Combination of All Items

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	P
4 Post-drug: P65,P68,P72,P73C	Exper:	24	4	5	7	116	160	9	.002
	Contr:	1	2	4	33	17	160		
3 Follow-up: F73,F25,F33	Exper:	10	0	4	16	51	150	8	.004
	Contr:	0	1	1	28	4	150		
1 Content analysis: C13	Exper:	6	2	2	0	24	30	10	.001
	Contr:	0	0	0	10	0	30		

TABLE 23

LIST OF ITEMS USED TO MEASURE PARADOXICALITY

		p values (for experimentals)	
		Using all scores:	Using only "strong" scores:
(1)	Post-drug data (4 items):		
P65	Sense that an attempt to describe the experience in logical statements becomes involved in contradictory language:	.016	.063
P68	Paradoxical dissolving of the subject-object dichotomy in spite of the empirical multiplicity of objects (they are still perceived as separate):	.008	.016
P72	Paradoxical transcendence of space as defined in 68-71:	.004	.008
P73	Pure awareness with no empirical distinctions (i.e., one is beyond the self-consciousness of sense impressions, yet one is not unconscious):	.002	.008
(2)	Follow-up data (3 items):		
F73	You have been accused of logical contradiction in trying to describe the meaningfulness of your own experience to others who were not present:	(1)	(1)
F25	Loss of feelings of difference from objects:	.016	.032
F33	Fusion of the self into a larger undifferentiated whole:	.008	.032
(3)	Content-analysis data (1 item):		
C13	Paradoxicality	.001	.016

which are paradoxical even in their description did show significant differences from the controls even when only the "strong" scores were used (p less than .032). Paradoxicality was also supported implicitly by item P64, the converse of item P65. Item P64 stated that "the experience is describable by logical statements which are not contradictory" and did not show a significant difference between experimentals and controls (p equal to .35).

Some examples of paradoxicality from the content-analysis data are as follows:

Experimental Subject QX:

> Everything was part of the other, yet distinct in itself.

(Comment: This is an example of external unity as well as paradoxicality.)

Experimental Subject GP:

> In fact, I'm not sure I have one over-riding impression, unless it is one of a confused kind of clarity.

Experimental Subject TD:

> I had a vision in which the flowing colors seemed to be me. It was infinity, with many time-lines running through it....I decided then that words were adequate to describe the experience, but only if you could describe each tributary, and say the words all at once.

(Comment: The description is not only paradoxical but is also an example of the next category, alleged ineffability.)

From the consistency of statistical evidence from all methods of measurement we conclude that the experimentals who got psilocybin experienced the phenomena of paradoxicality to the most complete degree defined by this category in our typology of the mystical consciousness.

Category VII: Alleged Ineffability

As seen in Table 24, the experimentals scored significantly higher than the controls in this category for all three methods of measurement (p less than .008). The experimentals had more strong ratings than the controls, as demonstrated by the distribution of scores.

All phenomena which were used to measure alleged ineffability are listed in Table 25. All individual items were significant at the .008 level and most were even more significant than this. Alleged ineffability was also supported indirectly by the nonsignificance of item F57b, "the ease of communication of your experience," which was the converse of F57a. When only the "strong" scores were used, all individual items remained significant (p less than .032) except for the content-analysis data. These were, in fact, a sparsity of statements in the accounts which explicitly stated the difficulty of describing the experience. Perhaps this was due to the fact that the subjects were at the time actually describing their experiences as best they could. Implicit allusions to this phenomenon were more frequent.

Some of the best examples from the content-analysis data of those who had psilocybin are as follows:

TABLE 24

Category VII: ALLEGED INEFFABILITY

Combination of All Items

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
1 Post-drug: P66	Exper:	5	3	2	0	33	40	8	.004
	Contr:	0	4	3	3	16	40		
3 Follow-up: F16, F57a, F92	Exper:	22	5	1	2	115	150	10	.001
	Contr:	1	3	6	20	22	150		
1 Content analysis: C14	Exper:	2	1	4	3	12	30	7	.808
	Contr:	0	0	0	10	0	30		

TABLE 25

LIST OF ITEMS USED TO MEASURE ALLEGED INEFFABILITY

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Post-drug data (1 item):		
P66 Sense that the experience cannot be adequately described in words:	.008	.032
(2) Follow-up data (3 items):		
F16 Feeling that you could not do justice to your experience by a verbal description:	.001	.016
F57a You have had difficulty in trying to communicate your own experience to others who were not present:	.002	.032
F92 You now feel that the meaningfulness of your own experience is beyond words:	.004	.016
(3) Content-analysis data (1 item):		
C14 Ineffability:	.008	(.25)

Experimental Subject TD:

> I imagined I heard someone describing or explaining our experience, and I wanted to object because they were lying. And yet I felt that it was all that could be said. Somehow it was theological ideas they were messing up, yet I could understand that these lies were the best we could do. But they were lies, and that was important, too.

Experimental Subject KR:

> During this time the sense of "we-ness" became a sense of oneness with what I can only describe as "Logos" or a personal Word...(Theological terms were given great meaning in this experience but are totally inadequate in describing the depth and impact of it.)

(Comment: This was also the beginning of the phenomenon of internal unity for this subject.)

Experimental Subject FK:

> I cannot describe the sense of the Divine--He was the eternal mystery that was; He was everywhere, but completely transcendent; the Divine, truly not of this world, but whose message had the greatest significance for this world. I felt compelled to go to the front of the chapel, to minister in the name of Christ--for no one else was doing it, and it had to be done...For really the first time, I realized that man cannot challenge and try to limit God to a conceptual system: it is God who challenges men to do His will. God is, and that is all one can say. I am human; I will still try to build an elaborate theological system, for my egocentric gratification, and also to be able to communicate with others. (I am not saying that intellectual theology is bad, but that it is so completely inadequate to interpret the Divine.)

(Comment: This is an example not only of alleged ineffability but expresses the sense of sacredness as well. The reality which he felt is an example of the category: objectivity and reality.)

We therefore conclude that the experimentals did experience the phenomenon of alleged ineffability to a considerable degree--certainly sufficient for inclusion as an example of this category as defined by the mystical typology but not in the most intense way possible. In other words, the psilocybin experience under the conditions of this experiment can be concluded to closely resemble this aspect of mystical experience.

Category VIII: Transiency

As seen in Table 26, when the scores of all items were combined, the experimentals scored significantly higher than the controls for all methods of measurement (p less than .004). The frequency distribution of scores demonstrated the predominance of high scores for the experimentals and scores of "0" for the controls. In other words, there are only four chances in a thousand that the phenomenon of transiency was not due to psilocybin.

All the items which were used to measure transiency are listed in Table 27 in two groups: essential and supplementary phenomena. When all scores were used in the analysis, all individual items showed a significantly higher score for experimentals than for controls at the .004 level except for suddenness of appearance which was still significant at the .02 level. Under the most rigorous analysis using only "strong" scores, most of the essential items which directly defined transiency as such, remained significant (p less than .032) except for F31 and F52. It was interesting that these last two items are consistent because they would indicate that the lighter levels of unusual consciousness (F31) were the ones which did not disappear completely by the next day. Such an "afterglow effect" was confirmed

TABLE 26

Category VIII: TRANSIENCY

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Combination of all phenomena:									
6 Post-drug: P12, P26, P27, P28, P30, P31	Exper:	34	11	7	8	180	240	10	.001
	Contr:	0	1	7	52	12	240		
4 Follow-up: F8, F9, F52, F86a	Exper:	27	8	3	2	151	200	10	.001
	Contr:	1	4	1	34	17	200		
1 Content anal: C10	Exper:	8	1	0	1	26	30	8	.001
	Contr:	1	0	0	9	3	30		
Essential phenomena:									
2 Post-drug: P30, P31	Exper:	8	6	3	3	56	80	9	.002
	Contr:	0	0	2	18	2	80		
2 Follow-up: F52, F86a	Exper:	11	8	0	1	70	100	9	.002
	Contr:	1	2	0	17	10	100		
1 Content-anal.: C10	Exper:	8	1	0	1	26	30	8	.004
	Contr:	1	0	0	9	3	30		

TABLE 27

LIST OF ITEMS USED TO MEASURE TRANSIENCY

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
(1) Essential Phenomena:		
a. Post-drug data (2 items):		
P30 Transiency of duration of deepest levels:	.002	.032
P31 Transiency of duration of levels other than the deepest:	.004	(.13)
b. Follow-up data (2 items):		
F52 Return to your usual state of consciousness day after the experience:	.002	(.063)
F86a You have lost by now the state of consciousness you experienced on Good Friday:	.004	.016
c. Content-analysis data (1 item):		
C10 Transiency of unity:	.004	.008
(2) Supplementary Phenomena:		
a. Post-drug data (4 items):		
P26 Appearance of various levels of consciousness:	.001	.002
P27 Suddenness of appearance of various levels of consciousness:	.002	.004
P28 Suddenness of disappearance of various levels of consciousness:	.004	.016
P12 Being able to operate on several levels at once:	.004	(.13)
b. Follow-up data (2 items):		
F8 Definite change in your usual state of consciousness:	.002	.002
F9 Suddenness of appearance of various dimensions of consciousness:	.020	.020

during the interviews. All items which directly measured suddenness remained significant under the most rigorous analysis (P27, F28, and F9), as did those which indicated a change in usual consciousness, P26 and F8 (p less than .020 for all these items). The only other item which did not remain significant (p less than .13) when only the "strong" scores were used was the experience of several levels (of consciousness) at once (P12) which was not so closely related to transiency as the other items.

Other substantiating evidence that the experimentals experienced change from usual consciousness was item P29 (stability of level of consciousness during the experience) which was significant for the controls (p less than .035).

Examples of transiency from personal accounts of two experimentals are presented below as further evidence:

Experimental Subject GP:

> ...after I was quite completely "out" of the experience, talking with my group and eating an apple...

Experimental Subject QX:

> At this point, the service had come to a close, and I was beginning to lose the full strength of my experience.

For more precise analysis, the items most essential to the definition of the category were analyzed as a group

separately from those items which were only closely related. As seen in Table 26, the results in terms of total scores, score distribution, and significance level, followed a pattern similar to that of the combined scores of all the items (p less than .004 for all subcategories).

The most important individual item was F86a because here the return to usual consciousness was measured after six months rather than after a few days. The experimentals had significantly more "strong" scores than the experimentals (p less than .016).

The closely related items were really a prerequisite for the essential ones, because a return to usual consciousness would not be relevant if there had been no change during the experience. The most specific item in this regard is from the content-analysis data. C10 represents the whole category because this distinction between "during" and "after" the experience was explained. Judges were told to score evidence of transiency of unity--a basic phenomenon of the mystical typology.[1] The fact that this item remained significant under the most rigorous analysis confirms the conclusion from the

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[1]See instruction manual in appendix E under "transiency of unity."

rest of the data that the phenomena of transiency indeed were experienced more by the experimentals than controls, and to the most complete degree in the typology. In other words this phenomenon was induced by the ingestion of psilocybin under the conditions of this experiment.

Category IX: Persisting Positive Changes in Attitude and Behavior

As seen in Table 28, the experimentals scored significantly higher than the controls for both methods of measurement, when all items were combined which rated persisting positive changes, compared to the subjects' condition before the experiment (p less than .001 for followup data, and less than .002 for content-analysis data). The frequency distribution of scores indicated that there was a predominance of "strong" scores for the experimentals, and "0's" for the controls. The individual items which measured this category were listed in Table 29 in four subcategories: (1) changes toward self, (2) changes toward others, (3) changes toward life, and (4) changes toward the experience.

Changes toward self

Seven out of the twelve items which represented persisting changes toward self, were significant below the .016 level. These items indicated a definite positive change in both behavior (F58b) and attitude in terms of better inner functioning--e.g., increased personal integration (F55b), inner authority (F63a), dynamic quality (F64b), and joy (F87a); and decreased anxiety (F74b). Increased creativity (F77b) and decreased depression (F61b) were almost significant (p

TABLE 28

Category IX: PERSISTING POSITIVE CHANGES AFTER SIX MONTHS

Combination of All Subcategories

Items	Subject group (n=10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
39 Follow-up:	**Exper:**	152	42	86	110	944	1950	10	.001
	Contr:	14	47	52	227	290	1950		
4 Content Anal.:	**Exper:**	20	2	1	17	65	120	9	.002
	Contr:	4	1	0	35	14	120		

TABLE 29

LIST OF ITEMS USED TO MEASURE
PERSISTING POSITIVE CHANGES IN ATTITUDE AND BEHAVIOR

		p values (for experimentals)	
		Using all scores:	Using only "strong" scores:
(1)	Toward Self:		
a.	Follow-up data (11 items):		
F55b	You have more personal integration:	.002	(.063)
F58b	Your behavior has changed in ways you would consider positive since the experience:	.002	(.063)
F63a	You have a greater sense of inner authority in your life:	.002	.032
F64b	Your life has a heightened dynamic quality:	.008	(.063)
F74b	Feelings of anxiety have decreased:	.016	(.25)
F87a	You have more joy in your life:	.016	(.25)
F77b	You are a more creative person:	(.062)	(.25)
F61b	Feelings of depression have decreased:	(.063)	(.25)
F66b	You have increased feelings of happiness:	(.11)	(.25)
F69b	You have more peace in your life:	(.11)	(.25)
F71b	You have an increased achievement efficiency:	(.50)	(1)
b.	Content-analysis data (1 item):		
C15	Changes toward self after six months:	.004	.008
(2)	Changes toward others:		
a.	Follow-up data (7 items):		
F54a	You have become more sensitive to the needs of others:	.002	.032
F60b	You are more your true self with others:	.008	.032

TABLE 29 (Cont.)

LIST OF ITEMS USED TO MEASURE
PERSISTING POSITIVE CHANGES IN ATTITUDE AND BEHAVIOR

		p values (for experimentals)	
		Using all scores:	Using only "strong" scores:
F91a	You are a more authentic person:	.016	.032
F85b	You now feel more love toward others:	.016	(.063)
F68a	You are more tolerant toward others:	.032	(.063)
F76a	You have a more positive relationship with others:	(.063)	(.063)
F65b	Others have remarked about a positive change in you since Good Friday:	(.19)	(.19)

b. Content-analysis data (1 item):

C17	Changes toward others after 6 months:	(.812)	(.812)

(3) Changes toward life:

a. Follow-up data (16 items):

F53a	The experience has changed your philosophy of life positively:	.001	.032
F89a	Time spent in quiet meditation has increased:	.008	(.25)
F83b	You spend more time for devotional life:	.008	.032
F62a	Your appreciation for life has increased:	.002	(.13)
F82	You feel you now know a new dimension of life:	.004	.032
F81b	Your life has more richness:	.020	(.13)
F67a	Your life has more meaning:	.035	(.063)
F79a	Your sense of values (i.e., what is important to you in life) has changed positively:	.035	(.13)
F59a	You now feel a greater need for service for others:	.035	(.13)
F84a	Your appreciation for the whole of creation has increased:	.035	(.063)

TABLE 29 (Cont.)

LIST OF ITEMS USED TO MEASURE
PERSISTING POSITIVE CHANGES IN ATTITUDE AND BEHAVIOR

	p values (for experimentals)	
	Using all scores:	Using only "strong" scores:
F95 You now feel your life has taken a definite change of course because of this experience:	.032	(.13)
F72a You have an increased sense of reverence:	(.062)	(.063)
F78a You have more enthusiasm for life:	(.062)	(.13)
F75b You now have a more certain vocational commitment:	(.063)	(.063)
F93b You have more of a sense of the adventurous outreach of life:	(.09)	(.09)
b. Content-analysis data (1 item):		
C19 Changes toward life after six months:	.016	.016
(4) Changes toward the experience:		
a. Follow-up data (5 items):		
F56a You learned something useful from the experience:	.004	.032
F94a Your experience has been valuable for your life:	.020	.020
F96 You have tried to recapture any parts of the Good Friday experience since then:	(.15)	(.15)
F98a You would be interested in repeating the same experience you had on Good Friday:	(.26)	(.26)
F99a You would be interested in having more of these kinds of experiences (not necessarily with the hope of an exact repetition of your Good Friday experience):	(.23)	(.23)
b. Content-analysis data (1 item):		
C21 Changes toward the experience after six months:	(.5)	(.5)

less than .063). When only "strong" scores were used, inner authority (F63a) remained significant (p less than .032), and F55b, F58b, and F64b had higher scores for experimentals than for controls but just above the .05 level of significance (p less than .063).

Changes toward others

Five out of the seven items which represented changes toward others were significant (p less than .032). These items indicated a definite positive change in interpersonal relations in terms of more sensitivity (F54a), authenticity (F60b and F91a), tolerance (F68a), and love (F85b). More positive relationships with others (F76a) was almost significant (p less than .063). Of these five most significant items, three remained significant at the .032 level when only "strong" scores were used. These most important items were the phenomena of more sensitivity and more authenticity in being one's true self with others (F54a, F60b, F91a).

Changes toward life

Thirteen out of the 17 items which represented changes toward life were significant at the .035 level. Increased sense of reverence (F72a), vocational commitment (F75b), and enthusiasm for life (F78a), were only significant at the .063 level. Of the 13 most significant items, the four most

important, as indicated from "strong"-score analysis were: positive change in philosophy of life (F53a), knowledge of a new dimension of life (F82), and increased sense of the preciousness of life (F90b)--p less than .032: increased meaning (F67a), sense of reverence (F72a), vocational commitment (F75b), and appreciation for creation (F84a) were significant under such analysis only at the .063 level.

Changes toward the experience

Two of the six items which represented persisting changes toward the experience were significant at the .020 level: learned something useful (F56a) and considered the experience valuable (F94a). These differences between experimentals and controls also remained significant when only the "strong" scores were used (p less than .032 for both items).

As shown in Tables 30-33, the combined scores for the subcategories, changes toward self and toward life, were significant for the experimentals from both methods of measurement (p less than .016). The total scores and score distribution from these two subcategories were consistant with those of the combined scores of all items in the category (predominance of "strong" scores for experimentals and "0's" for controls). While the other two subcategories, changes toward others and toward the experience were significant from

TABLE 30

Category IX: PERSISTING CHANGES TOWARD SELF AFTER SIX MONTHS

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Persisting POSITIVE Changes:									
11 Follow-up: F55b, F58b, F61b, F63a, F64b, F66b, F69b, F71b, F74b, F77b, F87a	Exper:	30	12	27	41	205	550	10	.001
	Contr:	0	7	11	92	36	550		
1 Content analysis: C15	Exper:	7	1	0	2	23	30	8	.004
	Contr:	0	0	0	10	0	30		
Persisting NEGATIVE Changes:									
11 Follow-up: F55a, F58a, F61a, F63b, F64a, F66a, F69a, F71a, F74a, F77a, F87b	Exper:	2	1	28	79	52	550	7	(.062)
	Contr:	0	1	5	104	9	550		
1 Content analysis: C16	Exper:	1	0	2	1	5	30	3	(.13)
	Contr:	0	0	0	10	0	30		

TABLE 31

Category IX: PERSISTING CHANGES TOWARD OTHERS AFTER SIX MONTHS

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Persisting POSITIVE Changes:									
7 Follow-up: 54a,60b,65b,68a, 76a,85b,91a	Exper:	30	8	14	18	178	350	10	.001
	Contr:	0	10	10	50	45	350		
1 Content-analysis: C17	Exper:	3	0	1	6	10	30	5	(.50)
	Contr:	2	1	0	7	8	30		
Persisting NEGATIVE Changes:									
7 Follow-up: F54b, F60a,F65a,F68b, F76b,F85a,F91b	Exper:	0	0	7	63	11	350	3	(.50)
	Contr:	0	0	1	69	1	350		
1 Content analysis: C18	Exper:	0	1	0	9	2	30	1	(1)
	Contr:	0	0	0	10	0	30		

TABLE 32

Category IX: PERSISTING CHANGES TOWARD LIFE AFTER SIX MONTHS

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Persisting POSITIVE Changes:									
16 Follow-up: F53a,F59a,F62a,F67a, F72a,F75b,F78a,F79a, F81b,F82,F83b,F84a, F89a,F90b,F93b,F95	Exper:	60	19	39	42	393	800	10	.011
		3	19	20	118	105	800		
1 Content analysis: C19	Exper:	6	0	0	4	18	30	6	.016
	Contr:	0	0	0	10	0	30		
Persisting NEGATIVE Changes:									
14 Follow-up: F53b,F59b,F62b,F67b, F72b,F75a,F78b,F81a, F83a,F84b,F89b,F90a, F93a,F79b	Exper:	0	1	16	123	21	700	5	(.50)
	Contr:	0	2	4	134	11	700		
1 Content analysis: C20	Exper:	1	0	0	9	3	30	1	(1)
	Contr:	0	0	0	10	3	30		

TABLE 33

Category IX: PERSISTING CHANGES TOWARD EXPERIENCE AFTER SIX MONTHS

Items	Subject group (n = 10)	Frequency of Distribution (Number of times scored) Strong	Moder.	Slight	None	Total Score (10 subjects) Actual	Maximum	Sign Test Statistics N	p
Persisting POSITIVE Changes:									
5 Follow-up: F56a, F94a, F96, F98a, F99a	Exper:	32	3	6	9	168	250	10	.055
	Contr:	11	11	11	17	104	250		
1 Content analysis: C21	Exper:	4	1	0	5	14	30	5	(.19)
	Contr:	2	0	0	8	6	30		
Persisting NEGATIVE Changes:									
4 Follow-up: F56b, F94b, F98b, F99b	Exper:	2	5	2	31	27	200	8	(.64)
	Contr:	3	1	0	36	16	200		
1 Content analysis: C22	Exper:	0	0	2	8	2	30	2	(.25)
		0	0	0	10	0	30		

the follow-up data (p less than .001 for others and less than .055 for the experience), there was no significant difference between experimentals and controls in the content-analysis data (p greater than .19).

Both the follow-up questionnaire and content analysis of the follow-up accounts were designed to measure negative as well as positive changes. The positive items discussed above had their negative counterparts, but the only individual items significant below the .1 level were F74a, increased feelings of anxiety (p less than .032), and F61a, increased feelings of depression (p less than .063). When only "strong" scores were used, neither of these items remained significant (p greater than .5). Some ambiguity existed, however, because the positive expressions of both these items (F74b and F61b) were at least, if not more, significant than the negative. These two negative items belong to the subcategory "changes toward self," which tended toward significance (p = .062) in the follow-up data for this subcategory as a whole, but was clearly not significant in the content-analysis data. None of the negative subcategories showed a significant difference between experimentals and controls, at the .05 level, from either method of measurement. (See Tables 30-33.) The total negative scores of these

categories were relatively low in relation to the number of items represented, and the score distribution was predominantly at the low end of the scale--almost entirely "0's" for both experimentals and controls. The positive changes far outbalanced in number and intensity the few and relatively moderate negative changes reported.

Some examples of persisting positive changes from the content-analysis data are as follows:

Changes toward self:

Experimental Subject HQ:

> Very strongly beneficial: I have had a much greater degree of self-realization since Good Friday. By this I mean a greater certainty of being and becoming. Closely connected with this is the feeling of being a creature of purpose.
>
> I feel that I have a greater realization of my motives that lie behind my various actions. I do believe I have an awareness of the selfishness that underlies many of my actions. This realization has been met with attempts to cast this selfishness aside to go beyond it.
>
> I have made reference to the joy I experienced when I came back to life since the Good Friday afternoon experience. At times I have felt a joy of being alive and having real existence. I do not believe I have ever experienced it previous to Good Friday to the degree I did then or to the degree I have since, even though I intellectually knew of it.

Experimental Subject GP:

> Very strongly beneficial: Expanded awareness of myself. Regularly, in introspection, occasionally spontaneously, I recognize dimensions of my life that

I had not known before: longings, goals, abilities, kinds of strength.

Changes toward others:

Experimental Subject TD:

Strongly beneficial: Increased willingness, though not necessarily ability, to see interpersonal relations from the side of the other person. An increased insight into interpersonal relations.

Experimental Subject FK:

Strong benefit: A startling sensitivity to others--especially to those with "problems".

Changes toward life:

Experimental Subject FK:

Very strong benefit: A sense of "call"--insofar as this means that the Word must be proclaimed to the "world"--not so much verbally as "existentially", and that somehow I must respond to this challenge, as it has appeared to me.

Changes toward the experience:

Experimental Subject EB:

Moderately beneficial: An appreciation of and ability to enter in a limited way into experiences dealing with that beyond one's usual consciousness (two aspects of which are "mystical" elements and "unconscious" elements).

Experimental Subject FK:

Very strong benefit: A profound recognition of the role of the "mystical" in the full religious life--but this attitude seemed not as an escape from the world, rather giving me a greater sense of concern for the here and now.

Experimental Subject RM:

> Very strongly beneficial: Strong desire for prayer, communion with God, and time in the "wilderness".

Experimental Subject KR:

> Strongly beneficial: Aid in spiritual growth.

A significant difference between experimentals and controls in persistent positive changes after six months in all four subcategories has been demonstrated by these data. The most significant subcategories were changes toward self and changes toward life. The most important changes were those due to strong scores, as has been suggested. Changes toward others and toward the experience, occurred in both the experimentals and the controls, as seen from the total scores of these subcategories. Perhaps the interaction with the experimentals was a factor in these results, as is suggested by the following quotes from three controls:

Control Subject NJ:

> The entire day was meaningful--helped to draw friendships tighter and added much meaning to my religious life....Reverend "X", FK, and his entire activity (including playing "Jesus Christ is Risen Today"), and the talks afterward, were contributors to an extremely meaningful experience.

Control Subject IA:

> It was one of the most exciting days of my life. The fellowship with the students, and particularly

with all of the wonderful group leaders, was very meaningful.

Control Subject JN:

I was very glad to have been able to be part of the experience; for the first time I was really able to talk in depth with RM and TD.

(Comment: RM and TD were the experimentals in JN's group.)

The conclusion can be drawn that in terms of certain changes toward self and changes toward life, the drug experience is similar if not identical with changes resulting from mystical experiences as defined by our typology. This conclusion is not as certain for changes toward others and toward the experience because of lack of confirmation from content-analysis data, although specific items, as well as these sub-categories as a whole, were strongly significant in the followup data.

Other Data

Items which were not directly applicable to categories of our typology of mysticism are listed in Appendix G, in four main groups:

I. Integrative and constructive phenomena.

II. Disturbing changes in attitude and behavior.

III. Physical sensations.

IV. Miscellaneous.

The significance level of the difference in scores between experimentals and controls was given both when all scores were counted and also when only "strong" scores were used. This information, while interesting, does not contribute directly to the argument presented above.

I. Integrative and constructive phenomena:

The most striking phenomena under this grouping were the death-rebirth experiences during the experiment (significant at .032 level), which may have helped foster the lasting sense of new significance and meaning to life.

II. Disturbing changes in attitude and behavior:

Almost all of these phenomena which showed a significant difference between experimentals and controls, took place <u>during</u> the experience. In the six-month follow-up questionnaire, as has been shown above, only increased anxiety was significant

below the .05 level, and this was not due to "strong" scores. Nine out of ten of the experimentals gave a positive evaluation to their experiences as a whole, in spite of the occurrence of some negative elements, of which transient fear was the most striking, as shown in the following examples from the content-analysis:

Experimental Subject FK:

> Afterwards (by that, meaning Saturday and somewhat Sunday), I did have a distinct negative feeling beside the much, much stronger feeling of having been through a most meaningful, deep and significant experience. I would like to sincerely thank you for making this opportunity available for me...and I am sure it will have positive and creative effects on my "quest for realization" as I integrate the insights which were gained.

Experimental Subject DT:

> Despite the fear and negative attitude when I was in that one violent and painful dream, my reaction to the whole experience was a positive one, and I think I should like to do it again.

The relation between mysticism and phenomena generally considered as psychopathology is an interesting one which needs further elucidation and research, but is beyond the scope of this dissertation.

III. Physical phenomena:

The variety of physical sensations, especially visual, which accompanied the drug experiences, were interesting and

could be compared to the equally diverse physical manifestations reported by the mystics, but again, such a comparison was not the chief area of interest of this research. It is noteworthy that no experimental subject became preoccupied with negative physical phenomena such as dizziness or vomiting, although transient nausea was experienced (p less than .008). This result may have been due to the lack of emphasis on physical phenomena in the preparation of the subjects. The controls had significantly higher scores than the experimentals on the sensations of warmth and itching (P115 and P116) at the .035 level. These scores reflected the effectiveness of action of nicotinic acid on the controls.

IV. Miscellaneous:

There was 100% agreement among experimentals and controls as to who got psilocybin, as shown by the score difference between experimentals and controls on P128, F100a, and F100b, when only "strong" scores were used (p less than .001).