

Chapter 30. □ □ Factor Analysis: Dimensions of Intoxication

ALL THE DATA on marijuana intoxication presented so far have been based on how experienced users describe their experiences; i.e., it is primarily descriptive. One naturally wonders if there are more basic dimensions of the intoxication experience that could account for the many different specific effects, that would reduce many effects to a smaller, more basic number.

Factor analysis is a statistical technique that begins to answer such questions. All the different items of information are correlated with each other; a factor analysis then ascertains whether some sets of items form natural groupings that might represent more basic dimensions.

The data format of the present study is not well suited to factor analysis; the five-point frequency scale is rather limited, is not normally distributed, and does not constitute an interval or ratio scale. Thus the data given below are the weakest of the present study and are presented only for the sake of completeness and the guidance of other investigators.

In order to reduce the number of items to a level the computerized factor analysis program of the University of California at Berkeley's Computer Center could handle, every other item, starting with Q1, was selected. This included two items (Q67 and Q167) that were not answered in the same form as the others and so are not considered in interpreting the factors. Thus the analysis is based on 104 frequency of occurrence items.

RESULTS

The principal components analysis revealed one main factor (Eigenvalues for the first twelve factors were 13.953, 4.842, 3.956, 3.489, 3.191, 2.927, 2.758, 2.673, 2.443, 2.377, 2.255, and 2.171). Items loading .400 or greater on this first factor are presented in Table 30-1. The usual type-style code for overall frequency of occurrence is used. AS principal component rotations are primarily of mathematical rather than psychological interest, no interpretation of this factor will be made.

A Varimax rotation for 12 factors revealed one small-sized factor and eleven others that were not too much smaller. The proportion of the total communality accounted for by each factor was .078, .048, .044, .035, .033, .032, .031, .030, .028, .028, and .025. Each factor is described in Table 30-2.

Factor I seems to consist mainly of feelings of competence, perceptiveness, and intuitive-archetypal approaches to the environment. We might call it "Being High," as it fits many descriptions by users of the virtues of marijuana intoxication.

Factor II reflects enhancement of touch, taste, and smell sensations and imagery. It has been tentatively called "Enhancement of Nondominant Senses," as these senses generally play a minor role compared to vision and hearing in most of our transactions with the world. One could also consider these as close-up or "intimate" senses, as contrasted with the functioning of vision and hearing at much greater distances.

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Factor III deals primarily with increased awareness of various internal processes, such as body tensions, dreams, feelings of the location of consciousness, and thoughts. It has tentatively been named "Enhanced Internal Awareness."

Factor IV consists of items describing increased absorption in internal processes and a (consequent) loss of contact with the external world. It has tentatively been called "Internalization of Awareness."

Factor V does not seem to have a common theme, and Factor VI has only three items loading heavily enough to define it. It seems to represent unpleasant, dysphoric effects. Factor VII seems to represent perceptual instability in the visual system.

Factor VIII does not show any clear pattern, unless it be memory decrement. Factor IX also seems to represent memory decrement, although it is defined by only two items. The remaining three factors that were analyzed for in the Varimax rotation show no particular patterns that can readily be named.

TABLE 30-1
FIRST FACTOR, PRINCIPAL COMPONENTS

LOADING

Q#

BRIEF

LOADING	Q#	BRIEF
.613	191	EVENTS BECOME ARCHETYPAL
.612	111	SAY MORE PROFOUND THINGS
.610	141	MIND FEELS MORE EFFICIENT IN PROBLEM SOLVING
.587	15	VISUAL JIGGLE
.582	133	SKIP INTERMEDIATE STEPS IN PROBLEM SOLVING
.563	65	TELEPATHY
.560	151	BETTER LONG-TERM MEMORY
.538	113	INSIGHTS INTO OTHERS
.527	3	SENSUAL QUALITY TO VISION
.526	49	Different smell components at different locations
.519	45	VIVID TASTE IMAGERY
.514	37	VIVID TACTUAL IMAGERY
.514	147	PLAY ELABORATE GAMES
.506	139	SPONTANEOUS INSIGHTS INTO SELF
.498	95	FEEL STRONGER
.486	17	PULSING OF VISION
.484	163	MORE AWARE OF BODILY COMPONENTS OF ENVIRONMENT
.471	143	WORK MORE ACCURATELY ON PROBLEMS
.486	145	IDEAS MORE ORIGINAL
.467	89	PAIN MORE INTENSE IF CONCENTRATED ON
.462	13	PATTERNS, MEANING IN AMBIGUOUS VISUAL
.459	149	THOUGHT MORE INTUITIVE

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.459	63	DEJA VU
.459	47	NEW QUALITIES TO SMELL
.452	85	VIBRATION IN BODY THAT IS NOT MUSCLE TR
.445	125	CLOSER CONTACT WITH PARTNER IN MAKING
.444	135	NEW SIGNIFICANCE TO COMMONPLACE CONV
.438	91	BODY FEELS SMALLER
.431	216	SYNESTHESIA
.424	218	INNER VISIONS AS REAL AS NOCTURNAL DRE
.421	189	AT ONE WITH WORLD
.404	193	MEDIATE MORE EFFECTIVELY
.402	27	AUDITORY IMAGES MORE VIVID

TABLE 30-2
VARIMAX ROTATION FACTORS **LOADING** **Q#** **BRIEF DESCRIPTION**

Factor I. "Being High"

.698	191	EVENTS BECOME ARCHETYPAL
.682	111	SAY MORE PROFOUND THINGS
.599	113	INSIGHTS INTO OTHERS
.592	151	BETTER LONG-TERM MEMORY
.553	141	MIND FEELS MORE EFFICIENT IN PROBLEM SOL
.547	115	MORE SOCIABLE
.526	147	PLAY ELABORATE GAMES
.520	189	AT ONE WITH WORLD
.511	135	NEW SIGNIFICANCE TO COMMONPLACE CONV
.489	143	WORK MORE ACCURATELY ON PROBLEMS
.487	117	TALK MORE
.483	95	FEEL STRONGER
.482	133	SKIP INTERMEDIATE STEPS IN PROBLEM SOL
.481	145	IDEAS MORE ORIGINAL
.440	127	BETTER LOVER THAN WHEN STRAIGHT
.430	163	MORE AWARE OF BODILY COMPONENTS OF E
.424	65	TELEPATHY
.411	125	CLOSER CONTACT WITH PARTNER IN MAKING
.401	27	AUDITORY IMAGES MORE VIVID
.400	161	FEEL EMOTIONS MORE STRONGLY

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Factor II. "Enhancement of Non-dominant Senses"

.707	31	NEW QUALITIES TO TOUCH
.649	33	SURFACES FEEL SMOOTHER, SILKIER
.599	47	NEW QUALITIES TO SMELL
.539	37	VIVID TACTUAL IMAGERY
.553	45	VIVID TASTE IMAGERY
.432	49	Different smell components at different locations
.430	39	NEW QUALITIES TO TASTE

Factor III. "Enhanced Internal Awareness"

.552	193	MEDITATE MORE EFFECTIVELY
.534	183	LOSE CONTROL OVER THOUGHTS
.469	197	EASY TO GO TO SLEEP AT BEDTIME
.448	75	MORE AWARE OF INTERNAL ORGANS GENER
.448	201	DREAMS MORE VIVID
.444	163	MORE AWARE OF BODILY COMPONENTS OF E
.435	216	SYNESTHESIA
.419	77	LOCATION OF CONSCIOUSNESS IN BODY CHA

Factor IV. "internalization of Awareness"

.543	129	ABSORBED, ATTENTION MUST BE FORCIBLY C
.521	55	SO ABSORBED IN THOUGHT NEED TO REORIE
.491	93	LOSE TOUCH WITH BODY, FLOAT IN LIMITLES
.462	89	PAIN MORE INTENSE IF CONCENTRATED ON
.437	73	VERY AWARE OF BREATHING
.429	123	Less need for sex
.416	23	VISUAL HALLUCINATIONS

Factor V. No common theme apparent

.673	171	Worry about losing control
.579	208	SOME INNER TRIPS SEEMAL , EY
COULDN'T BE REAL		
.544	137	ACCEPT CONTRADICTIONS MORE READILY
.487	61	EVENTS FLOW MORE SMOOTHLY
.468	165	INVARIABLY FEEL GOOD WHEN STONED

Factor VI. "Dysphoria"

.600	5	World looks flat
.534	101	MOVEMENTS AWKWARD, UNCOORDINATED
.531	119	People seem dead, like robots

Factor VII. "Visual Instability"

.575	9	PERIPHERAL VISION CHANGES
.450	103	SENSE OF BALANCE ERRATIC
.410	7	AURAS AROUND OBJECTS
-.423	185	DIFFERENT PERSON WHILE STONED

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Factor VIII. No common theme apparent

.680	175	EASILY SIDETRACKED
.565	105	PLAY CHILDISH GAMES
.458	210	Gotten nauseated, vomited
.420	153	FORGET START OF CONVERSATION

Factor IX. No common theme apparent

.650	21	REMEMBER LESS OF WHAT IS READ
.462	153	FORGET START OF CONVERSATION

Factors X, XI, and XII. No common themes apparent

Factor X:

.612	59	TIME PASSES RAPIDLY
.444	11	VISION BLURRY
.428	85	VIBRATION IN BODY THAT IS NOT MUSCLE TR

Factor XI:

.470	25	UNDERSTAND WORDS OF SONGS BETTER
.452	205	CAN'T COME DOWN AT WILL
.440	99	PHYSICALLY RELAXED, DON'T WANT TO MOV
-.468	121	HIGHER PEOPLE GET ME HIGHER (CONTACT I

Factor XII:

.513	214	FEEL WORLD IS OK
-.495	177	POOR CONTROL OVER FANTASIES
-.400	19	EASIER TO READ