

COSTA RICAN MARIHUANA SMOKERS AND THE  
AMOTIVATIONAL SYNDROME HYPOTHESIS

BY

JOHN BRYAN PAGE

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interview schedules. T. A. Nunez and Otto Von Mering both made worthy editorial inputs as readers of the dissertation who had not participated directly in the transdisciplinary project from which my material comes.

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## PREFACE

Selecting a site for the study of long term marihuana use in Latin America poses three questions which must have close attention. First of all, will the host government give full cooperation to the investigators? Second, will there be proper medical facilities and local personal resources to carry out the study? Oddly enough, the third and last question is, does a chronic marihuana using population exist in the host country? William E. Carter, Ph.D. and Wilmer R. Coggins, M.D. found in their efforts to locate a Latin American site for a field study of Cannabis use that this was indeed the order of importance for the main considerations in designating a study site. They encountered a situation in Costa Rica where the government was anxious to have a study of chronic marihuana use done there, the local Social Security medical system had ample hospital facilities and well-trained personnel to carry out the study, and a population of long-term marihuana users existed in the urban setting of San Jose in sufficient numbers to make the study possible. Such a combination of advantages could not be found in any of the other Latin American countries which were considered as possible study sites.

Through an agreement with the Costa Rican Ministry of Public Health, the Cannabis use study gained the cooperation

of the Office of Stupifying Drugs and the assistance of the Social Security medical care system. We were given office space in the Ministry building, and Ministry staff aided us in getting the office furnished and a secretary hired.

Setting up the administrative environment necessary to carry out the study of an illegal activity had to involve local police cooperation. The Costa Rican Minister of Security arranged for contact between the local narcotics police and the Project field workers wherein it was agreed that we would not be arrested or harrassed during the course of our studies. Identification cards were issued to aid implementing this policy. Similar cards were also to be issued to subjects in the study so that arrest for marihuana possession would not interfere with their participation. These arrangements did not always function ideally, but they were sufficient for us to carry out the study with only minor difficulties.

The transdisciplinary design of the Costa Rican Cannabis Use Study included biomedical, sociocultural, and psychological phases which needed a central point of communications with the co-principal investigators, Drs. Carter and Coggins, and Paul L. Doughty, Ph.D. The Project office in the Ministry of Health Building became the center from which project operations were supervised. William R. True, Ph.D. and I worked out of the Project office, carrying out sociocultural studies of marihuana use as well as helping to coordinate other phases of the transdisciplinary study. This contact with all

phases of the study provided a perspective on its overall progress and quality which was useful in finally analyzing the data related to amotivational syndrome.

A wide variety of data is utilized in this treatment of chronic marihuana use, including psychomotor, intellectual function, personality, and attitude test results, biomedical data, and, most heavily, sociocultural data. Of the sociocultural data, the most important body of material comes from the life history interviews elicited from each of the 82 matched subjects. Consistency of data collection was assured by the use of an interview schedule developed by the collaboration of the field team with the help of Drs. Doughty and Carter, as well as Maryanna Baden, Ph.D. The 15,000 pages of transcribed interview materials which resulted will continue to provide valuable information and insights on urban Costa Rican life.

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By

John Bryan Page

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Seven behavioral attributes of amotivational syndrome are derived from a survey of the existing literature on chronic Cannabis use. These attributes are tested for a working class population in San Jose, Costa Rica's, using intensive life history data from 41 chronic Cannabis users and 41 non-using closely matched controls. Data on smoking environments and subjectively perceived effects for this population yield a user typology.

When this user typology is taken into account, comparison of school performance and work histories between users and non-users yields no evidence of the amotivational syndrome. Social adjustment difficulties, where they exist, precede the initiation of marihuana use and lead directly

to documented variations in user type. This is corroborated further by natural history observations. Additional measures, such as psychological tests, electroencephalographs, and detailed medical studies also fail to show evidence of the seven behavioral attributes commonly associated with the amotivational syndrome.

CHAPTER I  
PREVIOUS RESEARCH AND WRITING  
ON "AMOTIVATIONAL SYNDROME"

The behavioral and social ills which have been attributed to Cannabis use are widely varied, and each seems to have a corresponding negation elsewhere in the literature. Kolansky and Moore (1972), Warnock (1903), Walsh (1894), McGlothlin and West (1968), and others all find that users of Cannabis become lazy and apathetic. Miles et al. (1975), Mendelson and Meyer (1972), Rubin and Comitas (1975), and Hochman (1972) see no laziness among Cannabis users, and some (Rubin and Comitas 1975) even say that Cannabis use increases energy. Bloomquist (1971), Williams et al. (1946), Warnock (1903), and Kolansky and Moore (1972) say that Cannabis users are slovenly and neglectful of personal hygiene. Kaplan (1970), and Miles et al. (1975) find users to be no neater or dirtier than non-users. Soueif (1967, 1971), Kolansky and Moore (1971, 1972, 1975), Bindelglas (1973), and Brill et al. (1970) consider learning and memory functions to be diminished among chronic Cannabis smokers, while Beaubrun and Knight (1973) do not see such a diminution of functions among their sample of users. Soueif (1967), Kolansky and Moore (1972), Robins et al. (1970), and Smith (1970) say that users of Cannabis cannot work effectively at everyday jobs, but Rubin

TABLE 1

Cross-tabulation of Cannabis Researchers and Problems  
Correlated with Cannabis Use

Researchers	Problems									
	Apathy and Passivity	Loss of desire to work and productivity	Chronic tired- ness	Memory, Learning and Idea- tion Dif- ficulties	Depression and Irritability	Slovenliness and lack of concern for personal hygiene	Obsession with obtain- ing more Cannabis	Inability to make or carry out long term plans	General state of ill health	
Kolansky and Moore (1972)	X	X	X	X	X	X	X	X		
McGlothlin and West	(X)	(X)	(X)	(X)				(X)		
Walsh		(X)*		(X)	(X)	(X)			(X)	
Warnock		(X)		(X)	(X)	(X)		(X)		
Chopra, I.C. and R.N. (1967)				X	X	X			X	
Souief (1967)	X									
Souief (1971)				X						
Williams, et al.**		X	X	X	X	X				
Robins, et al.		X		X	X					
West		(X)	(X)	(X)	(X)			X		
Mailinger, et al.	(X)					(X)		(X)		
Hochman										
Miles, et al.**										
Asani		(X)*		(X)	(X)					
Lambo		(X)		(X)	(X)					
Mendelson and Meyer**										
Rubin and Comitas										

\*Parenthesis mean that the researcher has some reservations about hypothesizing a causal relation between Cannabis use and these problems.  
 \*\*Not studies of chronic Cannabis use.

and Comitas (1975), Trice and Roman (1972), and Miles et al. (1975) argue that users can and do. Users suffer from inability to make and carry out long-term plans, according to McGlothlin and West (1968), and Bindelglas (1973), but Hochman (1972), and Melinger et al. (1976) do not find this to be true for their sample of users.

Table 1 illustrates the positions taken by several of the most prominent researchers who have dealt with some aspects of the "amotivational syndrome." We can see that there is no unanimity among them regarding any single attribute of the syndrome, and roughly half disagree with the other half in finding symptoms of amotivational syndrome among the Cannabis users studied. This situation of diammetrical disagreement among Cannabis researchers leads to an atmosphere of mutual sniping in which the scientific thrust of contributing to the body knowledge about a still misunderstood drug is lost in interdisciplinary squabbling. The reviews which follow will treat these and other researchers' work as even-handedly as possible, with the ultimate objective of using their experience to build a theoretical position from which to assess the validity of amotivational syndrome.

The term amotivational syndrome has been used loosely in connection with all of the above-named social and behavioral problems and their corresponding negations. Because amotivational syndrome is generally considered a "subtle" or "insidious" kind of psycho-social disorder, those who write about it have avoided naming a comprehensive set of

symptoms, or more accurately, behavioral attributes for it, and relatively few authors have ventured to use the term amotivational syndrome to encompass those behavioral attributes. This chapter will attempt to review the existing literature on Cannabis use which deals most directly with behavioral and social disorders sometimes called amotivational syndrome, and to derive a set of behavioral attributes suitable for comparison with the data gathered in Costa Rica.

Early writing and research reports on the use of Cannabis do not use the term amotivational syndrome, even though the India Hemp Commission Report (1893) contains some testimony linking "laziness" and "sloth" to Cannabis use. The term first appeared in modern scholarly writing in an article by McGlothlin and West, "The Marihuana Problem: An Overview" (1968). Both authors were experienced in the hippie-based mind-expanding drug revolution of the mid-sixties. They describe, in the manner of clinical psychiatry, a condition they had observed among marihuana users with whom they had come in contact in California clinical settings. McGlothlin and West do not present amotivational syndrome in a tone which implies that they invented it, but they also do not refer to another source for the term. They carefully qualify their own use of the term, applying it only to "middle class students" or "impressionable young persons." Their description of the syndrome to which the term refers is brief:

. . . subtly progressive change from conforming, achievement-oriented behavior to a state of relaxed and careless drifting has followed their use of significant amounts of marihuana.

. . . Such changes include apathy, loss of effectiveness, and diminished capacity or willingness to carry out complex, long-term plans, endure frustration, concentrate for long periods, follow routines, or successfully master new material. Verbal facility is often impaired, both in speaking and writing (372).

The authors readily admit that they have not controlled for such factors as LSD use and social background, but they still suspect marihuana use as a causative agent (Ibid.). Both directly and indirectly, much of the work on marihuana use which followed this article was influenced by it. Some authors were not as cautious in their use of the term amotivational syndrome as those who first used it.

There have been basically three approaches to study and discussion of amotivational syndrome as related to Cannabis use. Clinical studies represent an approach which occurs frequently, encompassing user populations both in the United States and in other Cannabis using cultures. Impressionistic accounts of direct personal contact with marihuana users, an approach that the archaic literature contains in abundance, appears as part of many comprehensive accounts of the drug and its use. The quantitative analysis approach is the newest of the three approaches, using questionnaires and often large samples to obtain data on the consequences of Cannabis use. Some researchers combine clinical and quantitative methods to study these consequences. Authors who attempt to offer an overview of Cannabis use usually include a mixture of all of the above described approaches in their presentation. The following series of brief reviews will deal with

clinical approaches first, followed by quantitative approaches, and then mixed clinical, survey, and field research approaches. Overview authors will be reviewed last, including some examples of anecdotal writing on amotivational syndrome.

### Clinical Studies

Studies of Cannabis use which involve chronic users in either a clinical psychiatric treatment setting (both inpatient and outpatient) or a hospital experimental setting will be called clinical studies in this review. We shall begin with psychiatrists' assessments of the behavioral consequences of Cannabis use, both in its North American setting and in its other cultural settings.

Kolansky and Moore's clinical studies of marihuana use form the basis for three prominent articles on the amotivational syndrome, also sometimes called "marihuana toxicity" (1971, 1972, 1975). They find that there is a marked causal relationship between marihuana use and what most writers would call amotivational syndrome.

During the past six years, we have seen a clinical entity different from the routine syndromes seen in adolescents and young adults. Long and careful diagnostic evaluation convinced us that this entity is a toxic reaction in the central nervous system due to regular use of marihuana and hashish.

Contrary to what is frequently reported, we have found the effect of marihuana not to be that of a mild intoxicant which causes slight exaggeration of usual adolescent behavior, but a specific and separate clinical syndrome unlike any other variation of the abnormal mainifestations of adolescence (Kolansky and Moore 1972: 35).

They continue to list the salient traits of this "syndrome"

which include tiredness, mental confusion, slowed time sense, difficulty with recent memory, incapability of completing verbal thoughts, lack of concern for work or personal appearance, and outbreaks of petulance and irrational anger (35-36).

The 1973 NIMH report on the current state of marihuana research criticizes the Kolansky and Moore study because the authors do not specify whether or not the patients were, or had the opportunity to be, intoxicated with marihuana during the interviews on which the authors reported (V-33). The reviewers raise this question, because several of the symptoms enumerated by Kolansky and Moore resemble commonly named symptoms of acute marihuana intoxication, e.g., slowed time sense, incapability of completing verbal thoughts, and difficulty with recent memory. This may not be a legitimate criticism, because chronic use of marihuana may in fact entail states of intoxication that occupy many of the user's waking hours. Thus, if serious behavioral aberrations characterize the intoxicated state, then the chronic marihuana user would have constant difficulty functioning in normal daily activities. The NIMH critique also points out that the clinical method used by Kolansky and Moore, although very efficacious in discovering complexes of pathological symptoms that are of clinical interest, is not good for indicating causal relationships between symptoms and other facets of the individual patients' lives (V-34). This view is underlined in Rathod's assessment of Kolansky and Moore's work, noting that the claimed "toxic reaction" was not buttressed by any biochemical research (1975: 95).

Kolansky and Moore's 1971 article deals specifically with adolescent behavior, and the concept of amotivational syndrome therein was rightly rebutted because of the difficulty in separating the effects of smoking marihuana from the embracing of counter-culture precepts of non-achievement and altered social consciousness. In their 1972 article, Kolansky and Moore assiduously avoid adolescence in the case histories presented in order to connection amotivational syndrome more definitively to smoking marihuana. Adolescence is only one of several possible crucial transitional periods to which man in the course of life span is subject. By avoiding adolescence in their discussion, Kolansky and Moore did not necessarily avoid analogous transitional periods in the case histories of individual subjects. For example, in group 1 case 1 in the 1972 article (37) the 41-year-old male studied could easily have been approaching a transitional period before his introduction to marihuana. This took place while he, a married man, was dating a younger woman. The symptoms which follow his adoption to the drug include "confusion, distortion of time sense, apathy, forgetfulness, suspiciousness, and poor reality testing" (Ibid.). His personal situation also deteriorated, both in his family and in his business. To attribute the above sets of symptoms to marihuana use alone may be too simplistic. The precipitating factor in their onset may just as easily be the middle-age panic often seen in North American males.

A 28-year-old woman also cited in Kolansky and Moore's

case histories experienced deterioration in job performance and general attitudes toward efficiency and personal grooming after initiation of marihuana use (Ibid.). It is noted also that her attitude toward her marriage changed, and several love affairs resulted. This particular case points out the error in unifactorial reasoning in the search for any kind of psychological disorder. It appears the researchers wished to find marihuana as the sole cause of this woman's ills, when actually the situation was entirely too complex to attribute her problems to marihuana smoking and nothing more. This does not mean that marihuana could not have been a contributing factor in her case. It simply allows for the consideration of other equally important sources of upset as contributory factors.

Crucial transitional periods analogous to that of adolescence may be contributing factors in all of the cases cited by Kolansky and Moore. Even more importantly, all of these cases have been referred for psychological care and treatment. A distorted, one-sided image of marihuana use results from dealing only with cases whose recognized aberrance has brought them to seek treatment. A clinical population by definition represents only the segment of the total population that is seen (or sees itself) as outside the normal range of accepted behavior. Furthermore, the 13 cases cited involve people whose marihuana use is of short duration (no more than 2 years) and their levels of consumption are not well-documented. It does not follow that since light marihuana use

accompanies psychological problems among some psychiatric patients, marihuana necessarily causes the psychological problems.

Clinical reports on the effects of Cannabis smoking are by no means new to the psychiatric literature. The British India Hemp Commission Report (1893) contains in its huge volume of testimony a sizeable representation of psychiatrists who had practiced in India. Walsh (1894) recognizes that some people who use Cannabis put their mental health in jeopardy.

. . . In a certain proportion, too, it is not very improbable that, owing to the fact that these persons are of a neuropathic diathesis, and in them a tendency to insanity exists, and has always been latent, hemp drugs in excess, or even quantities which would not damage a man of robust nervous constitution, have acted as an exciting cause, making manifest mental weakness which might not have shown itself in the absence of such indulgence (35).

This is the testimony of a clinician who had experience with Cannabis toxicity in its most ancient cultural context. Walsh recognizes that cases of pathological reaction to Cannabis use probably have a close relationship with some pre-existing tendency to mental disturbance. One of the syndromes connected with such toxicity reactions is described in the following symptomology:

. . . The vice grows in him [the user]; he neglects his family and his business, falls into irregular and disorderly habits, which alternate with periods of self-reproach and mental depression (Walsh 1894: 32).

The above set of behavioral characteristics strikingly resemble

the current concept of the amotivational syndrome, yet they are used by Walsh to describe one of the toxic reactions suffered by users with a pre-existing tendency toward mental problems.

Walsh's concept of the relationship between mental disturbance and Cannabis use is very difficult to dispute, because patients suffering from Cannabis toxicity psychoses often have no previous history of mental disturbance. Kolansky and Moore (1972) include only cases with no psychiatric antecedents in their case history accounts. This is their justification for claiming that Cannabis is the cause of their patients' problems. It would be insufficient argument to point out that stories of maniacal homicide appear constantly in the news involving people with no history of psychiatric disturbance. Rather, it is preferable to study a non-institutionalized population of chronic Cannabis users to see if the amotivational symptomology holds for them. In this way, we avoid prejudicing conclusions on the basis of a sample that is already recognized as behaviorally aberrant.

Another early clinical study of the consequences of Cannabis use appeared in the Journal of Mental Science (1903) written by John Warnock, another Englishman of long experience in dealing with an ancient Cannabis-using tradition. He finds that the India Hemp Commission's findings do not agree with his experience in Egypt with kif, a strong Egyptian Cannabis preparation, and hashish. According to Warnock, kif was sufficient cause of psychiatric problems among a high percentage

of the patients in the Cairo Sanitarium (103). He goes so far as to name this Cannabis-caused syndrome "cannabinomania":

The term cannabinomania may be employed to describe the mental condition of many hasheesh users between the above forms [acute cannabis-caused psychoses, including temporary intoxication, delirium from hasheesh, mania from hasheesh, chronic mania from hasheesh, and chronic dementia from hasheesh]. The individual is a good-for-nothing lazy fellow, who lives by begging and stealing, and pesters his relations for money to buy hasheesh, often assaulting them when they refuse his demands. The moral degradation of these cases is their most salient symptom; loss of social position, shamelessness, addiction to lying and theft, and a loose, irregular life make them a curse to their families (103).

The above description is not unlike many of the more recent clinical and impressionistic accounts of amotivational syndrome. One major difference is that certain types of aggression are incorporated in the description, a characteristic which contrasts sharply with the passivity usually attributed to long-term Cannabis users. The characteristics contained in the above account which are most generalizable among those cited for the user suffering from the amotivational syndrome are laziness, lack of order, and dedication of all available resources to drug consumption.

Warnock indicates great familiarity with the cultural differences between Indian and Egyptian Cannabis use tradition. As Drake (1971: 88) also suggests, the difference in frequency of Cannabis-precipitated mental illness between India and Egypt may be due in part to the exclusive use of stronger, resin-based preparations by the Egyptian users. Cultural standards of use in India urge the Cannabis user to eschew

charas, the Indian equivalent of hashish, in favor of the less concentrated preparations, bhang and ganja. The Egyptian user typically seeks the depressant effects of heavy dosage and strong preparations. Finally, Warnock addresses the epidemiological problem of "hasheesh mania:"

. . . Probably only excessive users, or persons peculiarly susceptible to its toxic effects, become so insane as to need asylum treatment. Whether the moderate use of hasheesh has ill effects, I have no means of judging. . . (109).

As he sees it, Cannabis use is responsible for mental illness in Egypt, but still Warnock allows for the pre-existing tendency toward mental illness in these cases. It is interesting to note that, when addressing the problem of alcohol use as opposed to hashish use, Warnock is not willing to make the latter illegal and replace it with the former (105).

The authors cited above all attempt to generalize to the population at large on the basis of clinical populations, taking the basic position that Cannabis brings about increased mental difficulties. Walsh and Warnock modify this position by allowing for pre-existing tendencies toward psychological disturbance, while Kolansky and Moore do not. Prince et al. (1972), on the basis of a parallel data gathering situation, attempt to reverse the generalization process by arriving at exactly opposite conclusions. Extrapolating from the data gathered inside the Bellevue Hospital in Kingston, Jamaica, Prince, Greenfield, and Marriott concluded that ganja (the Jamaican term for the form of Cannabis smoked there) is in fact an alternative to alcohol, and, as such, is less likely

to lead to psychological disturbance (9). This kind of clinical generalization is no more acceptable than those mentioned earlier. All of the above mentioned studies lack the perspective gained by familiarity with the normal, at-large Cannabis-using population.

In the above account, it may seem that we slip into discussion of mental disturbance in general while addressing the problem of amotivational syndrome. This is no accident, because Walsh and Warnock name the symptoms of amotivational syndrome among many other symptoms of mental disorder which are also associated with Cannabis use. Kolansky and Moore's work is more tightly associated with the specific characteristics of the amotivational syndrome, which they are instrumental in describing, but these other works which name parallel symptoms in the context of a broader symptomology bring up the central question in the amotivational syndrome argument: Does Cannabis use lead to patterns of behavior which are considered outside the normal range of accepted behavior? Kolansky and Moore say yes, Warnock says maybe, Walsh says not without pre-existing dispositions or tendencies, and Prince, et al. say not at all.

Among the existing clinical papers and treatises on Cannabis use, the Chopras' of India (R.N.G.S., and E.C., 1942; I.C. and R.N., 1957; G.S. and P.S., 1965; G.S., 1969) have by far the most time depth. Their writing is based on years of clinical experience in dealing with patients who have used Cannabis in the complex and baroquely elaborate Cannabis using

tradition found in India. The clinical point of view, as stated earlier, may distort the researcher's perception of the consequences of Cannabis use, but the Chopras seem to be an exception. They know something about the general population of Cannabis users in India, and they temper their conclusions on that basis.

The following user typology developed by I.C. and N.R. Chopra (1957) shows that they have a much more finely-tuned sensitivity to the nuances of dosage level and usage set than their North American counterparts:

Group I. This group consists of persons belonging to the poorer classes, such as labourers, domestic servants, etc. These people are the principal consumers of ganja (and also charas, if they can get it). They take these as food accessories in order to relieve fatigue after their work and for mild euphoric effects to relieve the monotony of their daily vocations and existence. They necessarily stick to small doses as a rule they are able to carry on with their ordinary work. They suffer little or no injury to their general health from the habitual use of the drug.

Group II. This is composed of those individuals who use Cannabis in the same way as opium for its narcotic effects. The members of this group are idlers and persons mentally below average who take to the habitual use of Cannabis in order to induce a state of oblivion or to overcome feelings of inferiority and the sense of inhibition. Ganja and Charas are mostly used by this group and the damage to their health is more perceptible than in the case of Group I.

Group III. This includes individuals who use Cannabis in order to obtain stimulant effects combined with intoxicating effects, in the same way as alcohol. This practice exists mostly amongst the idle and the rich who wish to seek pleasure and new sensations, often of a sexual nature. Such a use, prolonged and carried to excess, is apt to cause injury to the gastro-intestinal tract resulting in dyspepsia and impairment of vitality and general health, and later in damage to their nervous system. Sometimes other potent drugs

such as nux vomica and dhatura are also mixed by addicts to fortify themselves to perpetrate acts of violence.

Group IV. This group consists mostly of religious mendicants (sadhis and fakirs) and the priestly classes. Cannabis drugs are used in all forms by them in order to overcome the feeling of hunger and to help them to concentrate on religious and meditational objectives (15).

Low dosage levels among poor laborers correspond with the use of Cannabis preparations for their fatigue-reducing properties. Other low-dosage users consume Cannabis preparations for specific religious ends. Those users among Group II are by far the most problematic Cannabis users, but the Chopras describe them as often being mentally deficient. Their dosage levels are far beyond those of the Group I users, further evidenced by their preference for the stronger Cannabis preparations and their concentration on what the authors call "narcotic" effects. Group III and Group IV, the pleasure-seekers and the meditators, most closely resemble the Cannabis-using patterns of North American users. North American drug use by seekers of new stimuli and experience is well known (cf. Goode 1970, 1972). Drug-connected religious mysticism in the U.S. in both sacred religious and secular social consciousness spheres, seems to parallel the Group IV pattern closely. Group I, as I shall show in more detail, has a parallel among Costa Rican marihuana users. Group II has parallels in the Egyptian Cannabis use patterns described by Warnock (1903) and Soueif (1967 and 1971) and also among some Costa Rican marihuana smokers.

Asuni, an African psychiatrist who also writes on clinical observation of chronic marihuana users in Nigeria, suggests that people who occupy marginal places in society are prone to use marihuana, as well as certain occupational groups, such as taxi drivers, truck drivers, prostitutes and musicians (1964: 20, 25). He seems to recognize some of the limitations of clinical research, and does not attempt to establish marihuana as a cause of the frequent unemployment, loss of efficiency, and tardiness seen in his subjects. Still, Asuni sees some connection between marihuana use and these traits (27). Perhaps further examination of the socio-cultural aspects of Cannabis use would be useful in sorting out the influences on the behavior of this particular group of Nigerian users.

Up to this point, discussion has been limited to the various analyses of psychiatric observations in clinical settings. Another variety of clinical study addressing the problem of amotivational syndrome has become numerous in recent years, where subjects are placed in a closed laboratory and given marihuana or some preparation of its psychotropic derivatives to consume in that closed environment. This does not really address the question of long-term use, since the experimental subjects are either marihuana naive or have relatively limited experience with the drug. However, the closed laboratory method does afford the investigator with assurance regarding the dosages of Cannabis administered and the settings in which it is smoked. The first study of this kind was done under the auspices of the La Guardia administration

in 1944, and users of long-term experience were studied. Some psychological testing was done, but the investigators were concentrating on acute rather than chronic effects, and so, little difference between user and non-user groups was reported.

Williams, et al. carried out a similar experiment in 1946, where six subjects were given marihuana to smoke over a 30-day period in a closed hospital setting. Psychological tests were administered during and after the smoking period. Results suggest that, during the acute period, the subjects experienced a diminution of precision in motor and intellectual function, as well as a lack of motivation and increased carelessness. General clinical observations noted increased sleeping time, general lassitude, social deterioration, and lack of personal hygiene, but they also indicated lack of anti-social behavior or psychotic reactions during the smoking period, even though dosage ranged from nine to 26 cigarettes per day. All of the above-named symptoms, some of which are identical to those described for amotivational syndrome, disappeared after the end of the acute smoking period. This particular study points out the danger of claiming, as do Kolansky and Moore, that Cannabis use results in a lasting toxic reaction in the users' nervous system. A complex of symptoms very close to the ones named by Kolansky and Moore are, in Williams' et al. research, apparently linked with the acute smoking experience, vindicating the NIDA criticism of the Kolansky and Moore study mentioned earlier.

A more recent example of the procedure carried out by

Williams et al. was performed by Lord (1971) on 37 student-age subjects. Using the Minnesota Multiphasic Personality Inventory (MMPI), Lord attempted to measure change in personality as a result of marihuana administration. He found that scores (anxiety and repression, respectively) for the subjects who were given marihuana indicated lower levels of excitement, energy, and enterprise (94). He makes the following statement on the relationship between marihuana and amotivational syndrome:

. . . The present findings support both the LaGuardia study and current clinical beliefs that marihuana does cause a reduction of responsibility in individuals. While the clinical statements regarding this trait are stated in terms of long-term use of marijuana, both the LaGuardia study and the present research imply that these characteristics may also be manifested in short-term use--even in single experiences with marijuana (49).

Lord has fallen into the trap of making unqualified generalizations on the basis of very limited and specific data. His testing population was made up of young short-term users, and they were tested after a single administration of the drug. Lord indicates that he is aware of cultural influences that impinge on the effects of marihuana (25-26) and yet he does not bother to give any background information on his user population other than to state age and sex. This failure to define the user population in even minimal cultural terms renders Lord's results nearly useless.

In seemingly a direct approach toward the amotivational syndrome problem Mendelson and Meyer (1972) placed 20 multiple drug-using males in a hospital setting for 31 days. During

the entire period, the subjects were able to earn money for tobacco and marihuana by manipulating an operant press-bar. All subjects earned the maximum (an equivalent of \$10 per day) during the smoking period, and so, no direct relationship between marihuana and decrease in work output was found. Miles suggests (1975) that the \$10 per day limit may have been unrealistic, yielding an effect whereby even the least motivated subjects could complete the output maximum without discriminating the levels of achievement in the group. Also, the task at hand was so simple that it could not be impaired by marihuana consumption. Both of these arguments are legitimate, and they point out the limitations of over-simplified laboratory-style experiments such as these. The rewards to be had in the real world for industriousness are limited by factors that are very different from the artificial ceiling seen here. Practically all human tasks, even the most menial, are too complex to be represented adequately by press-bar performance.

Miles et al. (1975) performed an experiment in a hospital setting which comes somewhat closer to replicating real world conditions than did the Mendelson and Meyer study. Six "healthy young marihuana smokers" were placed in a special laboratory situation for 70 days during which they were given a "job" that entailed the construction of wooden stools. The subjects were paid for piece work, and after the first week of the study, they took unanimous action to secure a "raise" in pay. Miles notes that during a 28-day period in the study

when each subject was required to smoke 17 mg. of THC, production and savings declined. The subjects had begun to spend more time in passive entertainment, and they claimed that the compulsory smoking was impeding their work output. Nevertheless, when a further increase in the piecework rate was instituted, production increased dramatically in spite of the continued compulsory marihuana smoking. Miles also notes with regard to the amotivational syndrome that efficiency was not altered even when production had dropped. That is, the subjects produced stools at the same rate per unit of working time during the period of low productivity, but they spent less time working until their wages were increased. He also found that, contrary to the Williams (1946) findings, the carefully monitored behavior of the subject group indicated no change in personal hygiene activities during the experimental period, and no increase in sleep time. Even though this laboratory study comes much closer than its predecessors to simulating a real world situation, it still fails to reflect several important factors which must be assessed adequately in order to make a definitive statement concerning amotivational syndrome. A short-term study of 70 days cannot yield conclusions about the consequences of a lifetime of smoking marihuana, because performance findings, no matter how closely-monitored, do not reflect how steadily an individual has worked during his lifetime, nor how faithfully he fulfills his other social obligations. Enthusiasm for a new job could account for the rises in production during so brief a period. Nevertheless, Miles'

et al. results hint that perhaps users who are smoking moderate amounts of Cannabis can function adequately and even show signs of motivation while under a daily smoking regimen.

Several other authors have presented clinical-style reports of their research on marihuana use which will be encapsulated below. David Kupfer (1973) did an out-patient clinical study of a small number of light marihuana smokers in which some psychological testing was administered. His most important conclusion regarding amotivational syndrome is that depression due to passage through a life crisis is an important factor among patients exhibiting symptoms of that syndrome (1322). Based on clinical examination alone of five marihuana users, John Thurlow (1971) offers three hypotheses for future consideration and research: 1) That lack of initiative is a long-term effect of Cannabis use, 2) That other drugs used to adulterate marihuana caused this lack of initiative, 3) That the connection between amotivational state and drug use is coincidental (182). Hendin (1973) bases his article on clinical examination of 15 marihuana using students, finding that the student population examined uses marihuana to curb aggression, or, in his own words, a "surcease from competition" (270). Allen and West (1968) write of their experience manning a clinic in the Haight-Ashbury district, and they warn that chronic use of marihuana could lead to "apathy, enervation, and psychological immobilization" (125). R. A. Shellow (1973) finds that the chronically "stoned" person can be depressive in

character, with intolerance to pain and frustration, basing his conclusion on limited clinical experience with chronic users (32).

The clinical treatises on amotivational syndrome which have been reviewed in the preceding pages encompass two basic kinds of Cannabis research experience. The first, exemplified by Walsh (1894), Warnock (1903), and the Chopras (1942, 1957, 1969, 1971) involves long experience with Cannabis users in mental institutions. The second, as in the work of Miles, et al. (1975), and Mendelson and Meyer (1972) involves relatively short-term clinical contact with users in an experimental setting. Some clinicians, particularly Kolansky and Moore (1971, 1972, 1975) are willing to state that Cannabis use is a direct cause of the apathy, loss of productivity, decrease of intellectual ability, and moodiness and irritability which they have observed among chronic marijuana users. Others, including Walsh (1894), Warnock (1903), Asuni (1964), and the Chopras (1942, 1957, 1969, 1971) prefer to allow for consideration of other psychological and cultural factors in determining the etiology of the aberrant behavior observed. Still other clinical researchers, such as Miles, et al. (1975) and Mendelson and Meyer (1972) do not observe the aberrant behavior noted by other clinically-oriented researchers.

Clinical observations have listed and corroborated several behavioral attributes of amotivational syndrome which deserve further attention. Apathy, lack of energy, loss of productivity, decrease in intellectual abilities, moodiness

and irritability, sloth and disregard for personal hygiene, and dedication of all available resources toward Cannabis procurement all appear in clinical treatises on marihuana use. The work of the experimental authors makes an indirect contribution to further Cannabis use research by warning that drug use should be studied and assessed in its natural setting and in chronic, long-term forms in order to form valid conclusions about the impact of the drug use on the users' lives. Many experienced clinicians provide important perspectives on the cultural or psychological factors which impinge on the behavior of Cannabis users. All of these contributions will be carried into further analysis of the impact of Cannabis use on the individual's accommodation in society.

#### Surveys and Quantitative Studies

Methods for measuring the influence of long-term Cannabis use have often been quantitative in nature, especially in the study of users in the United States. McGlothlin, Rowan and Arnold (1970) managed to identify a sample of 51 adults who had tried marihuana during adolescence. The mean age of this group was 40, and their first experience with the drug took place at least nine and sometimes as many as 20 years before the beginning of the study. This group was broken down into those who did not continue marihuana use for a significant period of time and those who had continued use for a period of at least two years at a rate of at least two times a week (434). These groups of 29 and 22 subjects, respectively,

were contacted by mail and interviewed for points of personal information. Several psychological scales including measures of sensation seeking and social desirability were administered. The authors found that the group which had experienced continued use of marihuana were much more unstructured and mercurial in their lifestyles than the other two groups (440). The main indicators of this were in the frequent changes of work and residence. The chronic user group also showed a strong tendency to seek psychotropic states by other means, ranging from the practice of Zen Buddhism to heroin use.

McGlothlin et al. recognize the difficulties in generalizing on the basis of this kind of sample. The method of procuring the sample immediately prejudiced it somewhat, since the subjects were recruited from a group that had been administered LSD either experimentally or therapeutically during the early sixties (433). Such a subject group did not form the kind of data base from which generalizations of any validity could be made about the ultimate consequences of chronic Cannabis use. Many were already psychiatric patients, and the rest had at least subjected themselves to administrations of LSD. Neither was there scientific control for problem drug use areas, such as alcoholism and other addictions.

A much more reasonably conceived sample was procured by Robins, Darvish and Murphy (1970) in their follow-up quantitative study of lower class blacks in St. Louis. Choosing from public school rolls, they identified a sample which contained 146 non-users and 76 users of marihuana. This population

was broken down further into those who used (or had used during adolescence) marihuana alone and those who participated (or had participated) in multiple drug use and finally, those who did not use marihuana at all. Using a personal interview and access to several varieties of public record, including police records, the authors made a comparison of the groups. They found that, even though the groups were matched for distribution of what they considered to be crucial home environment variables (presence of parents, father's job level, etc.) the user groups appeared to have performed less successfully in society than the non-user group. The users were less likely to have graduated from high school than the non-users (164). Users tended to achieve lower job levels than the non-users, whether or not they had dropped out of school (166). Arrest frequencies for non-drug related offenses were higher for the user groups.

Robins et al. attempted to control for other factors which might have influenced the comparisons, first by matching the subject groups at their starting points as children, and then by controlling for varieties of drug use history. The problem with the first controlling strategy is that the situations described by the school records which were used for matching purposes may have changed radically by the time these children reached adolescence, the time of drug use onset. The authors could not guarantee, or even be fairly certain, that the same home situation existed for their subjects as adolescents as did for their subjects as children. The

second controlling strategy, for some reason, did not include alcohol among the psychotropics which the authors called "drugs," thereby removing from consideration a drug of known influence on social adjustment. If those with heavy drinking or alcoholic problems were compared with those who did not have such problems, the authors might also have found an equally striking difference between the two groups. Furthermore, when the user groups were re-distributed according to duration of marihuana use (those using fewer than five years and those using more than five years) there was not a clear-cut progression in the frequency of the social ills mentioned earlier. Some variables such as number of arrests were more frequent for the group with less smoking experience than for those with more smoking experience (175). If there were a causal relationship between marihuana use and failure to graduate from high school or to secure a decent job, for example, then we might reasonably expect for those tendencies to increase with increased experience and dosage. This did not occur consistently when the authors tested for duration of use. Problems in control factors and causal statements thus mark the generalizeability of Robins, Darvish and Murphy's otherwise well-thought-out study.

That use of control factors to eliminate possible non-drug influences on performance and productivity can yield other results, is shown in Mellinger, Somers, Davidson, and Manheimer's study of University of California students (1975). Robins, et al. found evidence supporting part of the

amotivational syndrome hypothesis by controlling for childhood home environment; Mellinger, et al. found evidence which rejected amotivational syndrome when they controlled for parents' level of education and several academic motivation variables. This study's methodology was relatively impersonal, relying on non-contact modes of data elicitation, especially mailed questionnaires which were self-administered. Even though the response rate was fairly high, thereby eliminating bias factors due to non-participation (12) such a method is problematic in other ways, such as definition of the relative levels of marihuana use and the use of other drugs. These levels are difficult to establish using direct observation and interview techniques; the chances are small indeed that a mailed questionnaire could achieve real accuracy on drug consumption questions. Still, Mellinger, et al. report that drug use of any kind could not be singled out as a significant factor in college drop-out rate (34). Much more important in predicting dropout rate were the predisposing factors of family background, relationships with parents in high school, and social values (35). The statistical reasoning in this study is very sound, and it is one of the few studies of amotivational syndrome that attempt to place the blame for poor performance or low motivation levels on the socialization process of the individual, rather than the use of a drug. The authors' arguments are robbed of impact by the comparative superficiality of their data-gathering procedures.

Soueif (1967, 1971) has attempted by large-scale psychological testing of subject populations to establish the consequences of long term Cannabis use among Egyptian kif smokers. His first study in 1967 certainly is not lacking in rigor of test design or execution, utilizing a user population procured by means of key informants who led the researchers through networks of personal interaction to identify a subject population (6). In this way, Soueif had a stratified sample in a natural setting for his study purposes. The main data-gathering instruments in Soueif's study were interview schedules which underwent extensive and rigorous pre-administration testing for reliability and translation into colloquial Arabic. These schedules were administered to three different sample groups, one consisting of 204 urban hashish users from Cairo, another of 49 semi-urban and rural hashish users from upper Egypt, 115 controls from Cairo, and 40 controls from upper Egypt. The study provides a wide range of data, including some epidemiological inference on the extent of hashish consumption in Cairo, and relative popularity of the various methods of smoking the drug (7). Correlation coefficients of contingency were estimated for some of the data elicited, and it was found that positive correlations appeared between monthly frequency of hashish use and the number of hours worked per day. The author hints at some negative correlation between quality of working conditions and amount of hashish consumed (8). He is unwilling to make a statement about the correlation between amount of hashish consumed and marital

status, because of inconsistencies between urban and rural smokers in this regard. Soueif's statement on productivity is vague and difficult to interpret; he states that users claim lower quantity and quality of production while under the influence of hashish and he attempts to correlate it with specific cognitive and perceptual changes reported by the users. He found that a fairly high correlation could be estimated between productivity decline and disturbance in time perception, and also to distortion of auditory perception (10). Still, Soueif's work hovers very close to the question of amotivational syndrome without really addressing it. His research (1967) design and user population are both among the best to appear in the literature. Within the data gathered, he may even supply sufficient information to make a much more definitive statement on amotivational syndrome, but he does not go any further than to analyze the users' reports of acute effects of the drug on productivity. As we have already seen, this question is also in doubt. The interview schedule used with Soueif's subjects contains a section on family background and on work conditions, and these may have yielded some work history information for the purpose of studying chronic consequences of hashish use. For some reason, Soueif's discussion does not enter this area.

Another Soueif study, completed in 1971, is less promising because of its use of a prison population, but still is impressive because of the size of the sample. The research involved nearly 1700 subjects, including users and controls (17). This

time, both an interview schedule and a battery of largely non-verbal psychological tests were administered. The problem of amotivational syndrome was again side-stepped by Soueif, as he concentrated on comparing the results of the test battery, and on pointing out social behavior variation within the sub-groups of the user population. Nevertheless, Soueif does report one difference between user and control groups which might support part of the amotivational syndrome argument. He found that the users on the whole were slower learners than the controls (27) and that the controls scored consistently higher on the test battery which included digit span, tool matching, and other tests than did the users (28). One of the often-cited symptoms of amotivational syndrome is the inability to learn new material or to concentrate, so the results might be interpreted to exemplify this symptom in Soueif's population.

Sampling problems here may have prejudiced this particular study in favor of the non-users. Soueif specifies that the users were incarcerated exclusively for Cannabis-related violations (17). Since hashish smoking is a widespread, and often socially (if not governmentally) accepted custom, the population of users from which the test population was drawn by the method of arrest may be assumed to be large. Perhaps the segment of the user population which at the time of the study was not incarcerated can be said to be more astute in avoiding detection than the segment in jail. This prejudice might not work to the same extent on the population of other

criminals. For comparative purposes, it would be interesting to have administered the 1971 tests on the 1967 user sample.

Two basic conclusions from Souief's work are of interest and concern regarding amotivational syndrome: first, that users consider their work output to be diminished while under the influence of hashish or craving for hashish (1967: 10) and second, that users seem to be slower learners than controls (1971: 27). The first conclusion disagrees with other research already cited (Miles et al. 1975; Mendelson and Meyer 1972) but is based on a much more solidly established user population and therefore must be taken seriously. The second may be due to sampling bias, but is worthy of further investigation.

Other researchers who have used statistical analysis of psychological data to study the consequences of ongoing marijuana use are reviewed below. Mirin et al. (1971) did comparisons between heavy and casual users on the basis of a psychological test battery. They found that heavy users (not controlled for other drug use) tended to have higher scores on a hostility scale of a moods test, but otherwise no significant difference between the two groups in psychological test variables (57). Student users were the subjects in Hogan's study of marijuana use, and he found no significant differences among frequent users, occasional users and non-users in school performance, and only minor nuance differences in personality test scores (1970). Shean and Fechtman (1971), in a comparatively superficial attempt to study the relation

between marihuana use and purpose in life, found that users scored lower on this test than do non-users.

### Composite and Field Research Tactics

Some researchers have a composite research tactic to elicit several kinds of data on marihuana use. Hochman (1972), for example, in addition to extensive clinical experience, used a large-scale questionnaire to investigate some of the consequences of marihuana use among students. A total of 2200 questionnaires were mailed out, which produced 64 percent response. Roughly 90 of the subjects eventually submitted to further interviews and testing. Hochman's interpretation of his own results is possibly different from the interpretations that might have been given by Kolansky and Moore of the same research data. Users and non-users differed significantly in interruptions of their academic careers and frequency of job quitting because the job was "dull," and in indecision about long-range plans, but Hochman finds no evidence supporting amotivational syndrome. His reasons for this interpretation are that users and non-users do not differ in feelings of life direction, age of first job, number of jobs, age at marriage, number of times married, and number of times divorced. These are only "halfway point" results of a study which is not yet complete, so Hochman's statements are not final conclusions. Nevertheless, Hochman's methods deserve further comment. The mailing technique in this case was favorably modified to include some face-to-face contact with some of

the subjects, and, if the dosages reported by the users in the sample were accurate, it could conceivably yield acceptable results.

The problem, as in the Mellinger et al. study, is that the author does not have enough assurance that the reported levels and varieties of drug are accurate. Hochman has taken the position that marihuana use in the North American sub-cultural context represents a new movement in social sensitivity, and perhaps a "buffer" against increased stress resulting from living in a fast-paced, urban environment (61). This position may at times supercede in importance the evidence produced by his studies. He argues that the users he has studied do not demonstrate the lassitude described by other researchers, but he does not convince the reader that he was dealing with a genuine chronic marihuana user. If they were in fact long-term users the job or academic instability and inability to make long-range plans remain questions of marihuana use that are difficult to answer on the basis of Hochman's research.

An author who supplies some cross-cultural perspective using a mix of research tactics is T. A. Lambo of Nigeria (1965). He has used both clinical and survey methods of obtaining data on the consequences of marihuana use. He concludes that the cause-effect relationship between marihuana use and low productivity or poor social adjustment cannot be established on the basis of his research (9). As Warnock and Walsh before him, Lambo does not rule out the possibility

of pre-existing psychological disorder in cases of mental illness among Cannabis users (9). His survey results show that crime, Cannabis use, absenteeism, and dismissal rate are parts of a larger complex of social problems often resulting from failure on the part of the individual to integrate his personality sufficiently to "get along" in a changing social environment (8). This concept, used by Hochman (1972: 61) to illustrate his own "buffer" view, is important in considering cultural settings of marihuana use other than the North American setting so prominent in the literature. Those areas where marihuana use is considered deviant would tend to have a population of socially marginal users, much like the ones described in Lambo's work. Hochman assumes that marihuana use in fact assuages the social pressures experienced by its users, an assumption which would be contested by Lambo. Lambo's description of Nigerian patterns of marihuana use suggests that there exist among users several complementary factors which contribute to that use, including participation in a cultural ambience of societal marginality. The significance of this concept will be amply illustrated in the description of Costa Rican patterns of Cannabis use.

Lambo also addresses another issue which is implicit in much of the research on the use of marihuana and other drugs. He doubts seriously that there exists in scientifically generalizable form a "drug using personality" archetype. "Drug use proneness" has been another way of wording this idea. Lambo does not see among the Nigerian marihuana smokers he has

studied a set of personality characteristics which distinguish the people most likely to abuse drugs from those who are not (9). Sadava (1973) came to a similar conclusion in a longitudinal study of college freshmen when he recognized that personality scale characteristics alone failed to predict adequately whether or not an individual would end up using drugs. He found that social environment also played an important part in this outcome. The study of amotivational syndrome's validity leads to this question of the personality which is predisposed to drug use. If there exist in the individual drug user's personality certain elements or characteristics which make him prone to use drugs, then these characteristics may be part of a configuration which includes the tendency to show amotivational syndrome symptoms. The question of "which came first?" is partially answered by Lambo and Sadava when they suggest that beginning and continuing drug use often depends heavily on conditions of social nurturance of that use.

Becker (1953) in a pioneering study of the process of becoming a marihuana user, describes these conditions as he negates the drug use proneness hypothesis (236). The central message of Becker's study is that the people who instruct the prospective user in Cannabis use must successfully redefine the novice's first experience for him in good or beneficial terms, regardless of his own first impression of that experience (240). If this does not happen, the novice is much less likely to continue to smoke marihuana. With this principal in mind, the drug use proneness hypothesis becomes

less credible for marihuana smokers, and the question of amotivational syndrome cannot be applied to this hypothesis. Re-stated in cultural rather than purely psychological terms, drug use proneness may still be useful as a concept, although its definition would become infinitely more complex than the previous one.

The recently completed study of chronic marihuana users in Jamaica (Rubin and Comitas 1975) also utilized a variety of approaches to deal with the consequences of long term Cannabis use, including psychological and medical testing and extensive socio-cultural research. Beaubrun and Knight (1973) state in an article based on the Jamaican research that a comparison of 30 users' work histories with those of 30 matched non-users showed no difference between the two groups (311). They go on to suggest that perhaps the lower-class level of workers used in their study did not yield the same results as would white-collar workers, whose complex work tasks would be more affected by the drug than the tasks of simple day-laborers. Beaubrun and Knight indicate that they are not very familiar with the daily work schedules of their subjects, who were hospitalized especially for the testing period. This kind of perspective on the work habits of the subjects would have been useful to add depth to the conclusions of this phase of the Jamaican study.

Bowman and Pihl (1973) administered projective technique formats to a sample of rural Jamaican users and non-users (Beaubrun and Knight's sample was both urban and rural) also

in connection with the Jamaica study of chronic Cannabis use. No essential difference was noted by the authors between users and non-users, underlining the normality of ganja smoking in Jamaica. Bowman and Pihl found also that the users were able to compensate behaviorally for the effects of the drug at increased dosages (169).

The most unusual branch of the Rubin and Comitas study was the videotape sociocultural study on work efficiency and Cannabis use done by Schaeffer. Carefully measuring amounts of food and Cannabis consumed by rural agricultural workers, and analyzing the videotapes of work party activity for kinetic efficiency and speed, Schaeffer was able to determine that workers under the influence of marihuana were working less rapidly than when not smoking marihuana. The degree to which work speed was reduced seemed to vary directly with the heaviness of the dose. Users justified this drop in speed by saying that their work was more thorough when under the influence of marihuana. The tapes reveal that workers after smoking performed significantly more movements per minute, even though their work progressed more slowly. Nevertheless, Schaeffer found that these significant differences were outweighed by the social importance of smoking Cannabis together in a work party. Obviously, the Jamaican marihuana smoker's approach to use of that drug is very different from the essentially recreational approach of the North American user. Schaeffer found that the drug does, in fact, reduce working speed, but it is regarded by the workers as necessary to do

the job correctly and to maintaining a harmonious work group. The latter values are so important that they eclipse the former objective disadvantage. Schaeffer also found that in the course of the yearly round of cultivating activities, the difference in work speed caused by the Cannabis could not otherwise go toward increased production because of the limited landholdings of the farmers studied. In the present situation, time that might have been saved by not smoking ganja on the job would not have a productive outlet because of limited land resources. These findings confirm the idea that Cannabis and work can mix in some situations. Even so, the tasks performed by the farm workers are rudimentary, and such conclusions may not apply to an urban environment, where worker's tasks are often more complex. Further evidence regarding the urban user and his work is provided by the Costa Rican study on chronic marihuana use.

#### Overview Authors

Some treatises on Cannabis use are written by authors who have not conducted original research themselves, but draw from the results of several researchers to synthesize their own insights on the use of that drug. The following segment of this review of the literature covers some of the authors who have had something to say about amotivational syndrome.

Anecdotal descriptions of long term marihuana users appeared often in the volumes of the India Hemp Commission's

(1893) massive inquiry, but as the evidence was carefully weighed, the Commission could not attribute directly to Cannabis use any of the dire consequences described by their witnesses. More recently, in the avalanche of publications on marihuana and marihuana users, authors still employ the anecdotal case as an illustration. Kaplan (1970) provides the example of Bill, the marihuana smoking mailman:

If you were to follow Bill around on his job, it would be difficult if not impossible to discover if he was stoned. He walks steadily and talks coherently--he controls his high. Two things might give him away: he looks a little blank in the eyes and he tends to stare at a bird, a tree, a crack in the sidewalk a bit too long. Just for a second, he is not quite there (166).

The rest of this passage depicts a successful adaptation of daily marihuana use to a working lifestyle, but such descriptions must be couched in a broad data base of established validity before they can be accepted as generalizable to some population of marihuana users. The body of data provided for Kaplan by G. Lewis Scott is not sufficiently analyzed to justify this anecdote.

Even more unsatisfactory because of its source and its inflammatory nature is a letter from the mother of an 18-year-old dropout cited by Bloomquist (1971):

As a mother of an eighteen-year-old boy charged with possession of marihuana, I most emphatically say that I do not need scientific proof to see what damage it can do. I watched my son travel the typical road to ruin. . . from a student who enjoyed music, drama, and sports to a useless filthy college dropout with no other aim in life than to live in a carefree dream of distortion.

He went all the way . . . loss of appetite, long deep sleeps after the drug wore off, short attention

span, poor memory, inability to read, talk, or even communicate for more than a few minutes. His continued defiance is a definite hindrance to his return to normal, as he had come to enjoy it so much (160).

It is unfortunate that anecdotes such as this find their way into print much more often than do objective scientific statements. Testimony of the family members can be useful in analyzing the social outcomes of marihuana use, but this testimony cannot be accepted as it appears above in a definitive causal statement.

Other authors attempting to present an overview of marihuana use avoid the anecdotal description of the individual user. Grinspoon (1971) uses anecdotal material, but only to illustrate points about subjective effects reported by historical and literary figures, and never to depict lifestyles of users. Goode (1970) devotes a chapter to the profile of the North American user, also avoiding the anecdotal account of user lifestyle by dividing the profile into discreet factors such as age, sex, religion, education, etc. Both of these authors are skeptical about the validity of amotivational syndrome, because of subcultural differences between the user groups they have studied and the rest of North American society (Goode 1972: 92-93; Grinspoon 1971: 289).

A conference at UCLA in which various marihuana researchers on that campus participated, including two of the inventors of the term amotivational syndrome, produced some statements on marihuana and its use. Louis Jolyon West, while at the

same time arguing against the existing marihuana laws, made this statement:

. . . But the experienced clinician observes in many of these individuals personality changes which seem to grow subtly over long periods of time: diminished drive, lessened ambition, decreased motivation, apathy, shortened attention span, distractibility, poor judgment, impaired communication skills, loss of effectiveness, introversion, magical thinking, derealization and depersonalization, diminished capacity to carry out complex plans or prepare realistically for the future, a peculiar fragmentation in the flow of thought, habit deterioration and progressive loss of insight (Brill, et al. 1970: 461).

Clinical impressions such as these form a qualitative symptomology of amotivational syndrome much like the ones seen in other works, but West is careful to say that he does not consider his work to be definitive on the subject, pointing out that further study of chronic marihuana use is needed. The summary statement of the conference concentrated on West's observations, but also presented Hochman's social evolution theory of marihuana use among middle-class youth in the United States. Here, the clinical and mixed statistical approaches of marihuana research are juxtaposed, with the former attracting somewhat more attention than the latter.

Another overview article worthy of some attention is Bindelglas' "Conclusive Evidence and Marihuana" (1973). He gives the testimony of non-Western clinical experts considerable weight as he outlines a symptomology of amotivational syndrome. The main symptoms of this condition, according to Bindelglas, are "loss of interest and drive, sense of apathy and tiredness, often accompanied by an unhappy, discontented

mood" (53). Along with these symptoms, Bindelglas enumerates a number of "other clinical signs" including subtle decrease in the ability to organize and to integrate multiple ideas, impairment of the ability to develop new ideas and to think creatively, gradual impairment of ability to discuss abstract thought seriously, and deterioration of conversation (53). This constellation of symptoms and "clinical signs" was culled from West (1970), McGlothlin and West (1968), Kolansky and Moore (1972), Bouquet (1951) and Benbud (1957). All of these are decidedly clinical sources, but their combined corroborative symptomologies help to remove some of the qualitative and impressionistic aura which the individual studies cannot avoid. Rathod (1975) criticizes clinical reports which, either singly or in combination, attempt to present marihuana as a cause of aberrant behavior because the clinicians often begin with the presupposition that the claimed use of Cannabis on the part of the patient is valid, and that it is the only drug involved (96). Even though, as Bindelglas points out, all of the clinicians corroborate each other, they may have started their chain of inference on the very shaky footing of assuming that marihuana was the only drug used by their patients.

Brecher, in an article written for Consumer Reports (1975), reviews some of the latest research on marihuana, including recent statements on amotivational syndrome by Kolansky and Moore (1975) and Nahas (1975). Citing Schaeffer's Jamaican research, he suggests that the term for discussion should

be "motivational syndrome," since those results show marihuana use to be a necessary ingredient in the work party situation (146). This comment may seem almost flippant, but it successfully expresses the need for some degree of cultural relativism in the discussion of amotivational syndrome. The cultural values which the Jamaicans connect with marihuana smoking must be very different from those of North American users who find difficulty working at all under the influence of the drug. Variations in the values attached to marihuana smoking should be an important consideration in the study of amotivational syndrome.

Among the authors who survey the literature on marihuana use, Trice and Roman (1972) have by far the most to say about the relationship between marihuana and work. They introduce their discussion by describing the difficulties in obtaining truly objective information on this particular drug because of the "armed camp" division between the pro- and the contra-marihuana researchers (50). The lack of research on the influence of marihuana on quality control in industry has been, according to the authors, a major handicap in assessing the relationship between that drug and work patterns (139). From the evidence now available, they surmise that an experienced user is not likely to have problems in compensating for the acute effects of marihuana on the job (145). Absenteeism is a possible detriment to the users' work performance due to physical disorders, such as head colds, which seem to accompany marihuana use (138). An on-the-job difficulty encountered by

by users is the energy expenditure necessary to conceal the smoking process itself (134). On the whole, Trice and Roman do not consider moderate marihuana use to be a problem for the worker of any greater or lesser magnitude than that of moderate alcohol use (62).

### Synthesis of the Existing Literature

In this review of the literature on amotivational syndrome, we have examined a wide variety of research strategies with samples ranging from tiny hospitalized samples of six people (Williams, et al. 1946) to 1700 in Soueif's prison sample (1971). Many of the clinical studies concluded that they have detected a degree of organic toxicity manifested in the amotivational syndrome which is a consequence of chronic marihuana use (West 1970; Kolansky and Moore 1971, 1972, 1975; Chopra 1942; Warnock 1903). Others (Walsh 1894; Lambo 1965; Kupfer 1973; Thurlow 1971) looked for explanations other than Cannabis use for observed symptoms. The authors of the closed environment hospital studies (Mendelson and Meyers 1972; Miles 1975; Williams, et al. 1946) were not totally in agreement on their findings, but they considered marihuana not to produce lasting symptoms of amotivational syndrome among users. Large-scale studies often found that Cannabis use alone could not be blamed for the symptoms of amotivational syndrome among users (Mellinger, et al. 1975; Rubin and Comitas 1975; Hochman 1972; Hogan 1970). However, Soueif (1967, 1971) found some evidence that might be construed as supporting amotivational syndrome

among Egyptian Cannabis users, and Robins, et al. (1970) argued with some success that black adults who use Cannabis during adolescence tended to have problems in adulthood which could be attributable to their history of Cannabis use. Researchers of all types were finding evidence supporting amotivational syndrome and evidence refuting it, both with equal frequency.

Overview writers on marihuana also expressed both points of view regarding amotivational syndrome. Goode (1971), Grinspoon (1971), Barber (1970), Trice and Roman (1972), Rubin and Comitas (1973), and Kaplan (1970) all considered amotivational syndrome to be a part of a larger set of symptoms that are not necessarily caused by marihuana use. Bindelglas (1973), McGlothlin and West (1968), Bloomquist (1971) and Smith (1970) interpreted the evidence in favor of marihuana as a causative agent for amotivational syndrome.

The behavioral attributes listed below are derived from many authors' research and thinking on the characteristics of amotivational syndrome. Not all of the behavioral attributes in all of the discussed works are included in this list. It is rather a distillation of all of the attributes which have sufficient corroboration throughout the literature to justify inclusion in a master list. If this list has any cross-cultural applicability, then the Costa Rican evidence will corroborate its behavioral attributes still further. Confirming the existence of the same attributes in a different cultural setting would support the hypothesis that Cannabis

use is a cause of those attributes. The behavioral attributes of the amotivational syndrome as they appear in the existing literature are the following: 1) loss of interest and general apathy and passivity (Bindelglas 1973; Kolansky and Moore 1971, 1972, 1975; McGlothlin and West 1968; Brill, et al. 1970; Smith 1970), 2) Loss of desire to work or maintain business, loss of productivity (Walsh 1894; McGlothlin and West 1968; Brill, et al. 1970; Smith 1970; Soueif 1967; Robbins, et al. 1970), 3) Loss of energy, general state of tiredness (Kolansky and Moore 1971, 1972, 1975; Brill, et al. 1970; Bindelglas 1973), 4) Depressed, moody state of mind, inability to handle frustration (Kolansky and Moore 1971, 1972, 1975; Bindelglas 1973; Smith 1970; Walsh 1894; Brill, et al. 1970), 5) Inability to concentrate, decrease in ability to master new material or organize multiple ideas, and impairment of verbal facility (McGlothlin and West 1968; Bindelglas 1973; Soueif 1971; Bloomquist 1970), 6) Slovenliness in habits and appearance, including hygiene deterioration (Walsh 1894; Kolansky and Moore 1972; Williams, et al. 1946; Smith 1970), 7) Dedication of all available resources to procuring more Cannabis (Warnock 1903; Kolansky and Moore 1972; Smith 1970). Inability to make long-range plans and carry them out was not included in this list of attributes, because it is not necessarily absent among individuals who otherwise show a high level of achievement. Many presidents of the United States might be accused of suffering this same "disorder."

TABLE 2

## Cross-tabulation of Cannabis Researchers and Beneficial Research Design Features

Researchers	Research Design Features							
	Chronic use studied (with controls for other drug use)	Documentation of Dosage	Medical Data Available on Subjects	Socio-cultural Information on Subjects Available	Patterns of Use Known	Sample not Institutionalized*	Use Sample Size	
Kolansky and Moore	X		X	(X)**			13	
McGlothlin and West			X	(X)	X		Not Available	
Walsu	X		X	(X)			N/A	
Wannock	X		X	(X)			N/A	
Chopra, I.C. and R.N. (1957)	X	X	X	X	X		N/A	
Souief (1967)	X			X	X	X	408	
Souief (1971)	X			X	X		849	
Williams, et al.		X	X				6	
Robins, et al.	(X)			X		X	76	
Mellinger, et al.	X			X	(X)	X		
Hochman	X			X	X	X	90	
Miles, et al.		X	X		(X)		6	
Asuni	X		X	X	X	some, yes others, no	Not specified	
Lambo	X		X	X	X	some, yes others, no	Not specified	
Mendelson and Meyer		X	X		(X)		20	
Rubin and Comitas	X	X	X <sup>o</sup>	X <sup>o</sup>	X	X <sup>oo</sup>	31	
Carter, Coggins and Doughty	X	X	X	X	X	X	41	

\*Clinic out-patients are considered institutionalized

\*\*Parentheses mean that this is assumed because of the nature of the study, although this information is not exhaustive

<sup>o</sup>Subjects were institutionalized, only for medical and psychological tests.

The authors and researchers who refute amotivational syndrome also contribute valuable perspectives for the researcher who would investigate this complex of phenomena. Grinspoon (1969), Goode (1970, 1972), Barber (1970, Hochman (1972), Mellinger et al. (1975), Brecher (1974) and Rubin and Comitas (1973) unanimously warn that cultural factors including multiple drug use and values of the sub-cultural group with which marihuana use is connected may cloud the cause and effect relationship between amotivational syndrome and marihuana use. Miles (1975) and Mendelson and Meyer (1972) suggest that dosage levels should be well checked and behavior observed closely. They also suspect that experienced users can compensate for the effects of marihuana while performing everyday tasks. Rathod (1975) recommends more field work in order to avoid the errors common to clinical investigations of such questions.

In Table 2, the prominent researchers in Cannabis who have dealt with amotivational syndrome and related phenomena are cross-tabulated with positive features of the various Cannabis research efforts to date. The material tabulated here shows that relatively few research designs employ more than four of the six features. All of these features have been noted as beneficial to the purpose of developing a balanced perspective on Cannabis use during the preceding reviews of individual studies. For example, the knowledge that the researchers are in fact dealing with true chronic users for whom other kinds of drug use was controlled

strengthens their inferences accordingly, as in the Mellinger et al. study. On the other hand, McGlothlin's (1970) sample selection procedure weakens his final conclusions by not controlling adequately for LSD use.

Dosage documentation is an important weakness in many of the studies shown in Table 2, as is knowledge of cultural Cannabis use patterns. When the Cannabis researchers do not demonstrate an adequate grasp of these two basic points of information, they have difficulty making their conclusions convincing.

One of the most striking gaps in the accumulating body of knowledge on Cannabis use is the lack of studies on non-institutionalized populations. Of the 17 researchers cited here, only six deal with Cannabis users in their natural settings. The others have based their inferences on study of prison inmates, psychiatric hospital patients, or users in other special clinical settings.

Availability of medical and basic personal data on the user samples is a relatively strong design feature in most of the research cited in Table 2. Nevertheless, these studies suffer generally from a lack of supporting evidence with which to rule out other influencing factors. Kolansky and Moore's intensive clinical study, for this reason, can be dismissed too easily because of their not being able to specify whether or not their subjects were "stoned" during clinical sessions (cf. Chapter 1). Even the Jamaica study (Rubin and Comitas 1975) which pioneered new socio-cultural approaches to the

study of Cannabis use, is diffuse with regard to the various rural and urban ganja smokers who were tested medically and psychologically and studied anthropologically.

At the bottom of Table 2, the Costa Rican study of chronic, long term Cannabis use is included and evaluated. Not only is this the first study of its kind to include so many different kinds of intensive data gathering on such a large user sample and their rigorously matched controls, but it is the only Cannabis use study to gather all of these different kinds of data on the same set of subjects. For any given individual in the matched pair sample the study files contain the results of a basic physical exam and lab work-up, chest X-rays, EKG, intensive visual function studies, lung function studies, a medical history, basic personal information, sleep pattern information, psychological testing results for motor function, intellectual function, personality, and attitudes, and an average of 150 pages of transcribed life history materials. Inferences based on this wide range of information are likely to be stronger than those based on only one or two varieties of information. With the above data base at the disposal of the researcher, verification or rejection of amotivational syndrome's specific attributes should be possible in an almost definitive sense. The chapters which follow will utilize the body of data gathered during the two years of research on chornic marihuana use in Costa Rica directed by Carter, Coggins, and Doughty.

In order to establish the relationship between the Costa Rican setting of the chronic marihuana study and the data which will be analyzed, we shall begin in Chapter II with a description of the urban environment from which the subject population came, followed by a description of the subject selection process. Patterns and levels of Cannabis consumption will then be provided to document the subjects' status as chronic users. A systematic study of subjective effects of marihuana use will provide a heuristic means of determining the impact of that use on the lives of the users. Once this background and development materials have been presented, the relationship between marihuana use and the specific behavioral attributes: apathy, loss of productivity, lethargy, irritability, decrease of intellectual abilities, slovenliness, and dedication of all available resources to Cannabis procurement, may be examined for applicability to the Costa Rican case.

An entire chapter will be devoted to the impact of marihuana use in the life cycle, dealing specifically with the presence or absence of "loss of desire to maintain business, loss of productivity" among the users when compared with a closely-matched non-user group. Because it causes the most concern for the individual's adjustment in society, work and school performance and life history data will be used to assess this particular aspect of amotivational syndrome for the Costa Rican case.

"Loss of energy and tiredness" as well as "apathy and passivity" will be compared to the Costa Rican research evidence using socio-cultural data and also interpretation of personality measures administered to the sample group by the psychological investigators on the transdisciplinary research team. "Depression, and moodiness" will be discussed in light of psychological and socio-cultural data on the subject sample, combined with some natural history-style observations. The psychological battery administered to the sample of Costa Rican users provides ample evidence for the assessment of "inability to concentrate, memory loss, and decrease in verbal ability." This will be combined with some socio-cultural data and individual user testimony. The discussion of "slovenliness" as an attribute of amotivational syndrome will bring in testimony by field staff other than the anthropologists, as socio-cultural data. "Dedication of all available resources to procuring more Cannabis" will be tested against the Costa Rican evidence field staff testimony, socio-cultural data from the life history materials, and natural history observations.

## CHAPTER II THE URBAN SETTING OF THE STUDY

San José occupies the gently undulating space between two rivers, the Virilla to the north and the Maria Aquilar to the south, which cut through the central intramontain valley of Costa Rica. This rain-soaked valley, called the meseta central, is the home of 55 percent of the Costa Rican population. The original handful of Spanish settlers who came to Costa Rica beginning in 1561 were attracted to the rich soils of the region, as well as its temperate climate. Nevertheless, Spanish colonial interest in Costa Rica was not great, and the white population there did not attain 8000 by 1750 (Stone, 1975; 55). Costa Rica's rate of growth remained slow during and after the colonial period. San Jose's population in 1864 was still only 9000, even though coffee had begun to take hold as a major cash crop, and some efforts had been made to maintain contact with the international coffee markets (Stone, 1975; 82-87). International coffee trade was eventually an influential factor in San Jose's accelerated growth during the late nineteenth and early twentieth centuries.

There is little cartographic record of the patterns of urban growth during the earliest stages of San Jose's history, but the history is clear enough to indicate that the early

settlement which later became the city began small and grew very slowly. The hamlet of San José was founded in 1737 when its population was only a handful of families (Academia de Geografía e Historia, 1952). At that time, it occupied little more than the central hill on which are now found the Central Park, the National Cathedral, the National Bank, and the Union Club. The spurts of growth which brought big city status to this country village are relatively recent in the city's history. The population is still becoming accustomed to that status.

The local pattern of addresses and directions reflects the recentness of San Jose's transition into urban importance. Natives of the city, who will be called Josefinos for the sake of brevity, use a system of directions which resembles that of a country town. The system uses known points of reference from which the inquiring party is instructed to measure approximate distances in the direction of one of the four co-ordinates of the compass. In order to find a house in barrio Mexico, for example, a Josefino will tell you to go 200 varas (one vara is 33 inches) to the north of the barrio church and 25 varas east. This system is such a pervasive survival that mail and other deliveries are still made according to varas (or in deference to metric internationalism, in meters; which for direction purposes are used interchangeably). A Josefino is usually hard-pressed to give directions to an address across town to a stranger who does not know the local points of reference, using his momentary position as a reference

point. Neighborhood points of reference sometimes retain their original place names for direction purposes long after they have disappeared. Thus, the "old library," although still used as a reference point, is now a large parking lot.

The township (municipalidad) of San Jose was officially chartered in 1848, more than a century after the hamlet was established. Forty-four years later in 1892, one of the first censuses of good quality in Costa Rica recorded the population of the city as less than 20,000 (Dirección General de Estadística, 1974; XIX).

San Jose's first major growth spurt took place during the 1920's, reflected in a 1927 census figure of 89,000 population for the metropolitan area (Cuevas 1973: 5). New lower-class settlement spread to the south of the central business and residential districts. These southern barrios extended to, and across, the banks of the Maria Aguilar River. Their population developed a reputation for marihuana use which became important to our earliest attempts to identify a group of chronic users. A second growth spurt took place in San José during the late thirties and early forties, resulting in the expansion of outlying towns to the south and east of central San Jose, and doubling the 1927 metropolitan area population by 1950 (Cuevas 1973: 5). Many of the users and non users who entered the marihuana study during its later stages came from these outlying zones.

Present-day San Jose has a metropolitan area population of 436,862, according to the 1973 Census (Cuevas 1973: 7).

It is the center of a cluster of nearly-contiguous cities and towns with a total population of nearly 700,000. In a very direct sense, San José is the hub of governmental, industrial, and commercial activity for the busiest and most populous zone of Costa Rica.

Roads from fair to excellent in quality connect the central metropolitan area to the major surrounding towns, none of which is more than twenty miles distant. Buses from all over the country roll into San José bringing people who must carry out their various transactions with the market or the government there. Bus service to the city center from other parts of the immediate metropolitan area and its satellite cities is regular and affordable. In fact, all bus service leads ultimately to San José, and no destination is important enough to bypass that central hub. There is no direct bus communication, for example, between Heredia and Cartago, the third and second-largest cities in Costa Rica. Even within the metropolitan area, all bus routes lead to the city center, with no direct intercommunication among outlying areas unless they lie along a single bus route. Public railroad lines also terminate and originate in the capital's center. Transportation, then, is very centralized in San José, and this gives the city an extremely dense concentration of social interaction in its main business district.

Central San José crackles with vigorous commercial activity and the administration of governmental services.

Banks and large department stores dominate the area immediately north of the central park. West of this shopping area, the large markets dealing in wholesale and retail farm products and cheap consumer goods cram the streets with commercial activity. Hotels and government ministerial buildings are the most imposing architectural features of the southern and eastern sectors of the city, and three major government-run hospitals occupy the area due west of the central park. Little industry is in evidence in downtown San Jose, but the architecturally dominant buildings reflect the importance of this central area in the daily lives of the inhabitants not only of the metropolitan area, but of the entire meseta central. One must come to the city center for a driver's license, to buy a money order, to hospitalize a sick child or to get a health certificate or a VD injection. One should go to the city center in order to get the best price on avocados or fabrics or ready-made clothes. Hard-bound books are sold only in downtown San José.

Small businesses and residences occupy the spaces between the more imposing structures in the downtown area. Shops, bars, and restaurants present a jumble of storefronts on the busiest streets in the main shopping zone to the North. The market zone to the northwest is interspersed with shops of lower quality as well as cheap boarding houses and hotels. Here also are numerous handcraft shops where tailoring, shoe-making, and myriad repair services are performed by artisans who may live in the back of the shop. The southwest sector

of the city has a high concentration of low-life bars and brothels, mingled with residences and more artisan shops and artisan supply stores. The northeast and southeast sectors of San Jose are the most residential, the former containing some very upper-class housing, and the latter mainly middle-class housing with some artisan shops, bars and restaurants. All of these zones exist within a radius of one mile from the central park.

San Jose's downtown area is the single most important feature of the city for the purpose of studying marihuana use. The reasons for this are twofold. First, as was intimated earlier in the description of transportation networks and centralization of institutional and communication functions, the downtown area is a communication switching point with connections to all parts of the metropolitan area and ultimately the entire country. Messages left with key people in the city arrive reliably to recipients in the penitentiary, any outlying residential neighborhood, and in one case, even in the port city of Limon, 100 miles away. Second, the downtown area of San Jose is important because its intense activity has spawned a group of what are often called "street people," who manage to make a living providing marginal services for, or swindling or stealing from the hordes of people who transact their business in San Jose each day. "Street people" is a phrase often used to describe hippie-like vagrants who often populate college towns (Partridge, 1973), but they bear little resemblance to the

street people of San Jose. The gently predatory urban denizen, whom Ramos (1956) calls the "urban sub-proletarian" occupies himself in San José shining shoes, "guarding" automobiles, perpetrating minor gambling frauds, or committing petty larceny. Often, a street person will engage in more than one of these occupations concurrently. Such individuals have a wide range of acquaintances in the city, and they are often key figures in informal communications network among fellow "urban sub-proletarians." They are also marginal to "decent" Josefino society, and this quality makes them more immediately accessible to anthropological research. The openness of the street people has well-defined limits, and getting to know them takes as long as for any other individuals in the subject sample. Nevertheless, they were the first to give our study team any idea that a chronic marihuana using population existed in San José. Further description of this fascinating group of inner city inhabitants will be offered later, including its crucial effect on the initiation of chronic marihuana use.

Living in San José and its environs is a constant exercise in maintaining social distance. Even though dwellings are almost always contiguous, the city's inhabitants do not always associate with their immediate neighbors, and they often prefer to keep interaction on a formal and superficial level with the family or individual next door (Rodríguez-Vega 1953: 29). Despite the fact that Josefina families usually share their neighbors' business involuntarily because of thin walls, they prefer to form their strong social relations with people known

through family ties or other formal and informal associations. Interviews with Costa Rican city dwellers in the study sample showed that many desired a house with a private entrance where they could "live tranquilly" (True 1976a: III-11). This ideal living situation is seldom attained by Josefinos, so they must maintain social distance in other ways.

Private houses in the city center and in the residential barrios characteristically have a narrow front four to six meters wide. The living space in these houses comprises a single story which extends back from the entrance toward the middle of the city block, ending in a garden or patio for laundry purposes. Such a house may be occupied by one family, or up to four different nuclear families. With similar structures and living situations on either side of the house, and only thin walls separating them, city dwellers cannot expect to maintain a high degree of privacy. Contiguous neighbors in San José seem to compensate for this problem by maintenance of social distance. They hear, but do not listen to, the affairs of their neighbors. It was found during early survey-style work in one residential barrio that people living next door to each other are likely to know less about each other than a door-to-door interviewer can find out in a brief interview. Maintenance of social distance in this way protects the individual's sense of privacy in a crowded situation. Those neighbors in San Jose who demonstrate a tendency to pay attention to their neighbor's business are called disparagingly vino, which has the same sense as voyeur, and is

considered little better than the samoleón, or "peeping tom."

Propinquity, then, and a sense of community with one's neighbors cannot be considered realistically to form an important part of the social fabric for urban life in San Jose. Most Josefinos attach more importance to alternative frameworks for social interaction, specifically, family ties and informal personalistic associations. In either of these frameworks, the individual associates with others because he has chosen to do so, rather than being forced into social relations by virtue of some accident of rental rates or nearness to work locations. Family ties seem to center on the individual's parents among Josefinos, and sibling ties are less emphasized. The individuals who participated in the chronic marihuana study testified that the strength of the bond between mother and son is particularly strong. More than half of those questioned in the final sample indicated that they preferred their mothers over their fathers, compared with 13 percent who preferred their fathers and 21 percent who liked both parents equally. Costa Rican mothers react negatively to spatial separation from their sons, and many of our subjects reported that their mothers were plunged into a deep depression by their final departure from the parental household. Some Costa Rican sons maintain daily contact with their mothers even though they live on opposite sides of town.

Informal associations may be formed among Josefinos in a wide variety of ways. Workshop companions are often included

in an individual's circle of friends and acquaintances. The clientele of a favorite bar or pool hall may also provide lasting friendships and social contacts. Some informal social ties are the product of going through grammar school or reformatory together. Still others are formed in the course of trying to deal with institutional structures such as the social registry or the courts which are too complex or otherwise impenetrable to handle without the benefit of such associations.

The individual city dweller in San José uses his familial and informal social relations as part of his strategy to cope with an urban environment laden with intimidating impersonal agencies and intrusive stimuli. Wolf (1956) writes that the anthropologist's job in an urban setting is to study human behavior in the interstitial realms between institutional structures. This concept applies very well to the situation of urban Costa Ricans. San José is the center for the institutional activity in Costa Rica, and as a result, institutional transactions take place in bewilderingly large-scale settings. A person who approaches such transactions on a totally impersonal level is likely to be faced with endless queues, confusing and seemingly contradictory instructions, continuous retracing of steps, and ultimately a low likelihood of success. However, if he has a cousin who is a bank teller, or an old schoolmate who works in the Ministry of Transportation, he utilizes these social ties to facilitate the taking out of a loan or the renewal of a driver's license. Even a person who has no

direct familial or personalistic ties with the institution in question may have recourse to a friend who has friends or family in helpful positions. In this way, the establishment and maintenance of informal social relations is important to the relative success with which the Josefino manages his affairs in an environment dominated by large institutions.

Wolf aptly named the task of the anthropological team in Costa Rica, because informal association networks were important urban features which eventually led us to find a group of long-term marihuana users. Among even the most deviant segments of Josefino society, personalistic social networks form the medium through which their participants deal with the institutions that impinge on their lives. In the case of the street people, their informal associations are at best poorly connected with important institutions, and they depend on the internal cohesiveness of their networks for effectiveness. For example, some participants in a street network are regularly picked up by police for "vagrancy." When this happens, the prisoner sends word through the network that he needs someone to sign an affidavit to certify that he is not a vagrant. A participant in the same network with sufficient respectability to sign the affidavit is then summoned to the courthouse for this purpose. The research team found that a wide variety of cheap legal services could be obtained by participating in one particular system of informal association among street people. Participants in such systems often bemoan the fate that led them to associate with such "bad

company," but they exploit their networks constantly.

Responses to living in San José confuse the interpretation of Redfield's (1947) folk-urban hypothesis. San José is the center of activity for all of Costa Rica's large institutions, which operate ostensibly on an impersonal basis, and this is in keeping with the concept presented in the continuum of increased impersonal interaction in an urban setting. On the other hand, Josefinos cope with impersonal institutional structures by means of familial and personal ties, or the kinds of ties that, according to the continuum, are supposed to be strong in a rural village setting, but not in an urban setting. Urbanists are finding this contradiction to be true for most urban Latin Americans, as well as many other varieties of city dwellers around the world.

We had first-hand experience of the workings of the familial and personal networks among the poorest inhabitants of San José, but the same kinds of social relations may be dominant at much higher levels of Costa Rican society. Stone (1975) argues that the Costa Rican elite infrastructure is based on strong family ties which originated during the sixteenth century. According to Stone, the descendants of as few as six original families have supplied most of the high governmental officials throughout the history of Costa Rica. Possibly, the governmental institutions themselves may originally have been formed on the basis of familial relationships.

In the lowest strata of San José society, interpersonal networks depend apparently very little on family relationships.

Since they are systems of interaction among people who are considered deviant by most Josefinos, these networks are usually based on fluid, informal ties which have less stability than family ties. Nevertheless, some families are widely-known and connected among street people.

The courtesies, services, and goods that flow among participants in a given network vary according to the means and station of those participants. For example, the interchange among elite Josefinos may take the form of government jobs or banking advantages, while street people pass messages into and out of prison or dispose of stolen articles through personalistically-activated channels. Reciprocity governs the manner of exchange in both of the above cases, sometimes in the form of direct reciprocity, and sometimes generalized reciprocity. Often, a good or favor corresponds to a similar good or favor on the part of beneficiary, in which case the reciprocity is direct. Generalized reciprocity is particularly important in networks where communication activity is intense. For delivered messages or privileged information, the favor is offered with the generalized expectation of some equal favor to be extended at an unspecified time in the future. A man in the penitentiary who scribbles an urgent message for aid to be taken by a lottery salesman to a contact downtown is not in a position to offer any immediate reward for the service, yet he may be expected to do the same thing for someone else when he is able.

Members of the marihuana study research team received

many emergency messages from jail, called "cables," in which were handwritten requests for money or legal aid. The downtown points where these messages were delivered was found to be a useful place to send messages to participants in the street people's interpersonal networks. Such messages were usually delivered and answered within 24 hours, and they sometimes managed to reach people who were many miles from the San José area.

The street people's interpersonal association systems deal with more than communication, and the goods and services which flow through these systems include marihuana and stolen objects. The latter items are euphemistically called descuidos or "unguarded things," and they are constantly being bought and sold or passed along for sale by members of street people networks. Each participant in the chain of circulation for stolen objects can expect some small share in the profit. Marihuana distribution occurs only on a relatively small scale among street people, but it also carries some profit for participants in the chain of circulation.

The anthropological research team found early in our study of street people and their networks that people who occupied crucial positions in the chains of distribution for information, marihuana, and descuidos were likely to be key people for making contact with chronic, long term marihuana users. Some of these key people, called "brokers" by True (1976a) dealt only in marihuana and information, while others were central in the distribution system of all three items.

Those who specialized in information were found in a part of the inner city where many people interact constantly such as the Central Park. This is a particularly active area because buses from all over the metropolitan area load and unload there. Some of our first contacts were made among information brokers of the Central Park. Other brokers have an operations setting which is outside the center of San José in a residential barrio. The overall interaction density in this kind of operations setting is very low, compared to the bustle of downtown San José, but the workings of the broker and his network remain brisk. We were fortunate to gain the confidence of several brokers and eventually to learn something of their operations and the participants in their networks. These participants later took part in our study of long term marijuana use.

San José provides a compact urban environment in which to study a specific deviant behavior. Since it has not been a major city for very long, its urban qualities are blended with some survivals of "country town" behavior. Josefinos give directions in terms of varas and compass coordinates despite the existence of an orderly system of street numbers, but, in urban fashion, they seem to know very little about their immediate next-door neighbors. However, Josefinos do not deal with impersonal institutional structures, such as governmental ministries, hospitals, and banks in an impersonal manner. Interpersonal ties between friends and family become the agencies through which the individual Josefino makes sense

out an otherwise bewildering array of necessary transactions. These ties exist on all levels of society in San José. At the lowest of these levels, the network of functional social interaction consists of individuals who may be called street people. Low-life street networks of informal association provided initial contacts which led to further contacts in our search for chronic marihuana smokers. The chapter which follows will describe the process of following chains of interaction in this social setting and the eventual procurement of a group of long term smokers for our intensive study of marihuana use and its effects.

### CHAPTER III THE STUDY SAMPLE

As part of a trans-disciplinary team of researchers with specific contractually stated study objectives, the socio-cultural segment comprising three anthropologists began with a clear idea of the number of people to be studied, and the basic kinds of information to be gathered. We were to locate 80 users of marihuana who had a minimum of ten years' experience with the drug, and minimal experience with other kinds of drug use. The subjects were to be males between the ages of 18 and 50 who were willing to participate in a series of medical, psychological, and socio-cultural studies spanning a two-year period. Concurrently, we were also to find 160 non-marihuana-smokers who were otherwise as identical to our user group as possible. We went into the field with tightly defined numbers and cultural qualities in mind, and we were held to them by contract.

Scheduling of study activities was also tight from the beginning, with a set timetable for completion of the various research phases. July, 1973, marked the beginning of the study with the first attempts on the part of the sociocultural team to make contact with a user population. By the beginning of January, 1974, we were to have identified marihuana users

and suitable controls in sufficient numbers to begin the initial medical screening phase. This phase entailed passing all subjects through a medical examination which included electrocardiogram, ophthalmological examination, chest X-ray, comprehensive blood, urine, and fecal analysis, neurological examination, and general physical examination. Medical history questionnaires and initial socio-cultural questionnaires were also administered on the same day that each subject underwent the medical examinations.

The end of June, 1974, would see, according to the study timetable, the end of the initial medical screening process for all 240 selected subjects and the completion of initial socio-cultural studies. From this pool of 240 screened subjects, those who had not been eliminated for medical or other reasons would be selected to form 40 matched pairs of users and non-users. These were to be selected for the purpose of intensive medical and psychological testing, as well as in-depth elicitation of socio-cultural information from each of the final 80 participants. The intensive studies were to begin about July of 1974, and to end about March, 1975. Termination of the project, which had a planned ending date of June, 1975, was to be completed during the concluding three months.

The actual execution of the study schedule did not vary radically from the initial plans, except that the intensive medical testing continued sporadically until August, 1975. It was decided at the time of the selection of the matched

pairs that some 12 medical screen test slots would be held open for contingency purposes. These slots were later filled with subjects who were considered to have characteristics which matched them with other subjects who had already passed through the initial medical screen. When the medical screening process was finally tallied, 84 users and 156 non-users had been given the initial tests.

Selection of the subjects who would participate in the intensive studies was done on the basis of data elicited during the initial medical screening period. The medical data were assessed by Wilmer Coggins, the co-principal investigator of the project in charge of medical studies, while the socio-cultural criteria for matching were evaluated by Paul Doughty and William Carter, in collaboration with Maryanna Baden, and with NIDA contract officers Eleanor Carrol, Jean-Paul Smith, and Stephen Szara.

Many subjects were eliminated from intensive participation in the second phase of the study because of medical problems, for which they were subsequently referred to appropriate branches of the Costa Rican health care system for treatment. Among these problems the commonest were positive serological test for syphilis, pulmonary lesion shown in chest X-ray, and non-correctable visual abnormalities. There were also 12 cases of serious disease diagnosed for which those subjects were excluded from further testing. Table 3 shows the frequencies of the various medical criteria used to eliminate subjects from the selection process for the final group. Most of the

Table 3

Subjects Excluded from Matched-Pair Study  
For Medical Reasons

	Users N-84	Controls N-156	Total N-240	Signifi- cance
Defects in visual acuity	4	4	8	NS
Defective color vision	3	13	16	NS
Positive seriological test for syphilis	20	17	37	p < .01
Pulmonary lesion	8	17	25	NS
Other serious disease (incl. severe anemia, heart disorders, subnormal mentality)	3	9	12	NS
Total excludable defects	38	60	98	NS
Total excludable subjects*	37	56	93	NS

\*Some subjects had more than one excludable defect.  
(after Coggins, 1976; X-8)

differences between the large user and control groups in the rate of occurrence of excludable defects were not significant statistically. The case of positive syphilis tests may have a cultural explanation. As we shall see later in more detail, the users in the sample tended to have more street experience in their life histories than the controls, including sexual experience at an earlier age. With more sexual precocity and more exposure to the streetside variety of sexual behavior, contraction of a venereal disease becomes a stronger probability for the users than for the non-users.

Eleven subjects were eliminated for non-medical reasons,

Table 4

Subjects Excluded from Matched-Pair Study  
for Reasons Other Than Medical Ones

Cause	User N-84	Control N-156	Total N-240
History of absence from marihuana found to be inaccurate	N/A	2	2
History of marihuana use found to be inaccurate	1	N/A	1
Alcohol abuse interferes with participation in testing	1	2	3
Failure to keep appointments	2	1	3
Failure to cooperate with medical test procedure	2	0	2
Totals	6	5	11

(after Coggins, 1976; X-10)

as shown in Table 4. The first two criteria in Table 4 represent people who managed to slip by the pre-screening and cross-checking done by the anthropological team before testing was begun. The final group of subjects comprised those whose smoking or non-smoking reputations had stood up under extensive cross-checking. Difficulties encountered during the medical screen procedures account for the other three non-medical criteria for elimination from the study.

The matched group was selected from a final pool of qualified subjects which contained 41 marihuana smokers and 95 non-users. The matching procedure was complex, involving a close match for each of six different variables. These variables, taken from the results of medical history questionnaires and personal information elicited during the medical

screening process, were age, marital status, educational level, employment level, alcohol use and tobacco use. Age, alcohol use, and tobacco use were all reduceable to numerical equivalents. This was done for tobacco use by expressing it in pack years, or the number of years during which the subject has smoked one pack of cigarettes per day. Alcohol use was scored on the basis of a modified version of the alcohol use questionnaire designed by the Costa Rican Center for Studies on Alcoholism, which has a 0 to 17 scale. For age, tobacco, and alcohol, all pairs had to be within four points of each other in order to qualify as a matched pair.

Marital status, educational level, and occupation were matched according to the meanings of these attributes in Costa Rican society. For example, marital status has a broad definition among lower-class Costa Ricans, including stable free unions and serial free unions, as well as long and short-term formal marriage. Therefore, stable free union and long-term formal marriage were equated for matching purposes, while experience with serial free unions was differentiated from pure bachelorhood. The marital status matching criterion had to be flexible, because of the shifting status of many of the study participants.

Education for matching purposes was broken into five categories, none, primary incomplete, primary complete, secondary incomplete, and secondary complete. Other institutional socialization such as reformatory, orphanage, or seminary was also taken into account. Matches could be made

between individuals within one "step" of each other. A marihuana smoker who had completed four years of primary school, for example, could be matched with a non-consumer who had finished sixth grade.

Matching for occupation was done by using equatable levels of employment, rather than exact job pairing. Lower-class workers move interchangeably among jobs within their level of employment, and the jobs within a given level were deemed appropriate for matching purposes. Artisans who work in construction, shoemaking, or tailoring were all considered matchable with each other. Similar employment levels were also recognized for skilled blue-collar jobs and for white-collar jobs, although there were very few subjects in the latter category.

The anthropological team began to seek contacts among the user population in San José with the assumption that long-term use of marihuana was pervasive in all levels of Costa Rican society. After an initial sortie into the University atmosphere, it was discovered that marihuana use at the level of ten years or longer in that context was almost unheard-of, and that the general drug use ambience in the University was in fact very similar to multi-drug use in North America. This led to the suspicion that the lower-class patterns of marihuana use described by early contacts among street people were really the only patterns which would ultimately become a source of long-term users who could qualify for participation in our study. Musicians were at

first expected also to be a group which might produce suitable long-term users, but their drug of preference turned out to be alcohol, and the musicians indicated very little interest in or consumption of marihuana. Abortive attempts to find qualified long-term users of marihuana among other strata of Costa Rican society led to our eventual concentration on the working class as a source of users and of controls.

Contacts with street people were the anthropological team's first breakthrough in learning something about chronic, long term marihuana use in Costa Rica, and they came very early in the study. In fact, Carter first spoke to some eventually central informants in the street ambience during a feasibility study two years before the full-scale study actually began. These informants began by appearing very open about their marihuana use, but they seemed to limit their comments to aspects of use in their own social group, demurring when asked about other people who might smoke marihuana. The sequence of behavior on the part of the street people, first openness, up to a point, and then reluctance to introduce us to other long term users, was frustrating to the anthropological team, but it was also understandable. At the time our study was begun, it was punishable by law to possess marihuana for either sale or personal use, with a minimum term of six months (cf. Chapter IV). The street people themselves had little to lose by revealing that they smoked marihuana, because they were already well-known to the general public as smokers. Other users of the drug, as

we shall see later, have much more to lose by imprudent contact with unknown outsiders. Faced with this impasse in the street people's networks, the anthropological team began to formulate other means of gaining entry into the social circles of other groups of long term users.

One of our tactics for attaining contact with other long term users was a survey of cobbler shops, because we understood from several sources that shoemakers were often marihuana users. After mapping these artisan shops for much of San José, we attempted to administer a vague health questionnaire as a device to lead into conversation about drug use. This was very unproductive, because most shoemakers were too busy during work hours to take time for answering questions. Another tactic which was only slightly more successful entailed administering a "health" questionnaire house-to-house in neighborhoods which were known to have marihuana users among their residents. This tactic led to the discovery, ironically, of a shoemakers' shop where there were several qualified users. Otherwise, the daytime door-to-door method did not produce sufficient contacts with the user population to warrant its continuation.

The door-to-door tactic had its rewards, despite its failure in the explicit task of finding chronic marihuana smokers. The field workers were impressed by the lack of community spirit in the neighborhoods surveyed. This impression led to the hypothesis that social ties were not formed on the basis of propinquity. We also developed a feeling for

the natural gathering-places in the neighborhoods surveyed, and this helped in carrying out other, more successful research strategies.

Finally, on the advice of Carter, the anthropological team selected bars, and other gathering-places in the barrios where marihuana users were reputed to live. We frequented these places, picking up whatever information possible. It was felt that in these contexts, we would be encountering prospective informants at a time when they would have a moment to relax and talk, and in a place where they were likely to be surrounded by friends, or trustworthy acquaintances. We used a straightforward manner of introducing ourselves, in which we explained the objectives of our study to whoever volunteered conversation. Initial reactions were tentative in this atmosphere, but progress toward the needed contacts was made steadily and encouragingly. The clientele of the low-life bars in which we absorbed large amounts of alcohol and moderate quantities of information were not usually eligible to participate in the study because of alcoholism. However, these individuals eventually managed to supply sufficient information to lead us to make contact either with qualified marihuana users, or with people who knew qualified users. In this way, we began to exploit the social networks among marihuana users, discovering both a source of the needed study participants and a useful communications system.

Key people in the fabric of social interaction among marihuana users eventually were indispensable in the establishment and maintenance of contact with users who participated in our study. Called "brokers" by True (1976c) these key people are at the hub of some phases of interpersonal relations among the participants in their respective networks of interaction. They may, as outlined in the preceding chapter, be brokers of information because they operate in a part of the city where many people pass by. Brokers may also distribute marihuana on a small scale, and in that way, they have developed extensive contacts with consumers and distributors of that drug. They may also be key people in other kinds of illegal or extralegal business through which they have dealings with people throughout the city. Often, brokers handle both information and some combination of other economic activities.

Methods of contacting key people were varied, and in retrospect, seem almost haphazard. One key individual was contacted through regular shoeshines in the central park. Another was contacted when one of the anthropological researchers stumbled on his base of operations during a door-to-door survey. Another was approached at his streetcorner position on the basis of a description by the drunken clientele of a nearby bar. Another key person approached the author during an impromptu street concert. All told, there were no more than seven key people, or brokers, who contributed their contacts in the search for chronic marihuana users. We were

able to find all 84 of the users who participated in the study through the social connections of this handful of key people.

The field research team made the acquaintance of an estimated 1500 people during the course of the study, and most of these people were introduced to us through key people. These brokers were also instrumental in screening prospective study subjects in both the user and the non-user categories, because their knowledge of use or abstinence patterns among the prospective subjects recruited from outside their immediate circles of influence was extensive. We found repeatedly that although they almost never associated with each other, people in the various marihuana user social networks seemed to know each other. This was true for individuals coming from widely separated sectors of San José.

The following is a brief description of the beginnings of a relationship with one key informant, and the mechanics of continuing this relationship. After hearing from local bar clientele about a "very intelligent" marihuana dealer who operated nearby, one of the field researchers approached this individual, whom we shall call Loqui, at his street-corner base of operations. A week of standing on the street-corner with Loqui yielded introduction to two or three users among those who were constantly around the marihuana dealer, but the researcher decided that he was not relating to this particular social grouping. He could see that association with Loqui was potentially productive, but he did not feel comfortable working with Loqui's social group. He introduced

the author to Loqui in the hope that better relations with this social group would result. The plan worked, and the eventual contribution of Loqui's network of friends and acquaintances was large. Through either direct or indirect connections, Loqui was instrumental in introducing us to roughly 40 of the 240 subjects who passed through the initial medical screen, 15 of whom (seven controls and eight users) became part of the matched pair participant group.

The process of winning Loqui's confidence was gradual. A pair of special glasses for his mother, rides throughout the city in an automobile, a serenade for his girlfriend, and other minor favors contributed to confidence building. Encounters with the police were probably the most important factors in achieving the confidence of key informants, because these confrontations removed suspicion that we were somehow in league with the authorities, a suspicion that appeared repeatedly in our early contacts. In spite of our previous agreement with the police, they still saw fit to cause minor incidents in our presence, fortunately also in the presence of key informants. After two or three such incidents, Loqui was convinced that we were not part of any police effort.

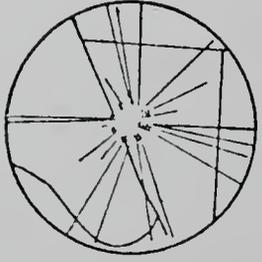
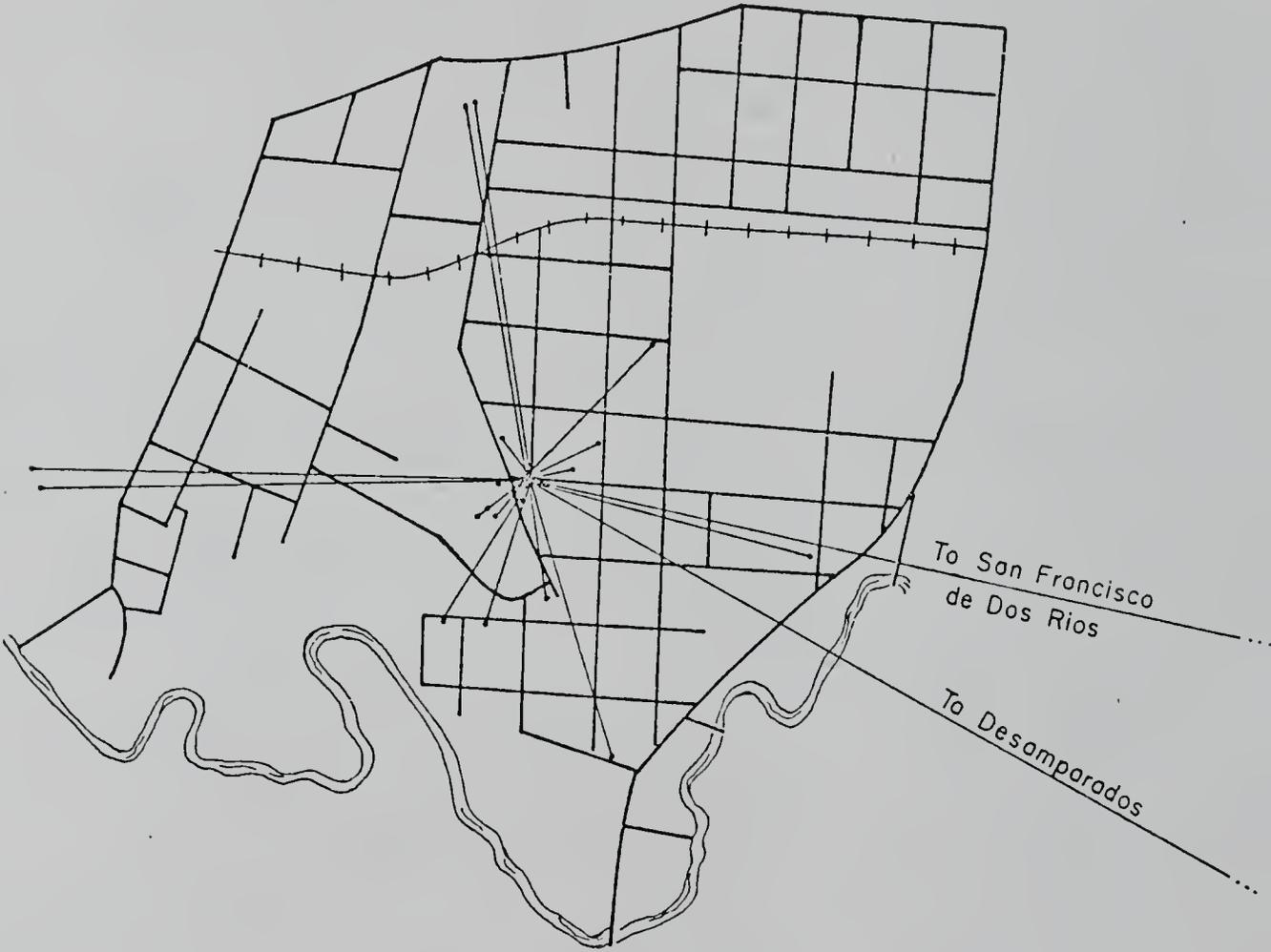
Simple day-to-day participation in Loqui's streetcorner group, where he dealt in marihuana and information, was sufficient to get to know a large number of users and even some non-users. However, many of the steadiest participants in his immediate network were too young to be included in the

marihuana study, so Loqui eventually was asked if he knew of more experienced users. He knew more long term users than we had imagined, and through his own system of communications, Loqui was able to arrange meetings which allowed us to explain the project to these "old timers" and solicit their participation. Key informants from other networks were often consulted at this point to ascertain the accuracy of Loqui's marihuana use report for these prospective informants. His reports were found to be correct so consistently that we eventually decided that cross-checking was no longer necessary for Loqui's contacts. The only case of elimination of one of Loqui's contacts for non-medical reasons was for other drug use not reported in the medical history (recorded in Table 4 as "failure to cooperate with medical testing procedures").

Our relationship to Loqui and his social network was by no means exploitative. It was reciprocal in the sense that our investigative team was able to offer services and sometimes goods in the context of the same interpersonal net through which we were receiving information. When Loqui's brother was arrested for marihuana dealing, we were able to offer legal aid, and we eventually managed to free him. When we needed to buy marihuana samples to submit for analysis, he sometimes sold us the samples, thereby giving our relationship to him direct reciprocity.

Loqui's interpersonal relations were most intense in his own neighborhood, although they did not generally involve

# Spatial Distribution of Participants in Loqui's Network



Loqui's Corner

Figure A

his immediate neighbors. This may be illustrated by mapping Loqui's informal associations with respect to residence location, as in Figure A. We can see that there is a "nesting" effect, whereby most of the relations are within a short distance from Loqui's own residence. In spite of the relative narrowness of Loqui's associational net, some of the lines of direct or indirect association extend to distant parts of San Jose, and these led to contacts with other users and controls who participated in the project.

Other associational networks tapped by the anthropological team had much wider ranges throughout the city, and this quality had favorable consequences for the eventual configuration of the project sample. True (1976a) found that, compared with recent analyses of the metropolitan area's more than 500 different neighborhoods, the zones from which the subject-participants in our study came were fairly representative in terms of socio-economic level and housing quality. Although our sampling technique was not at all random, we managed to identify a group of people whose general socio-economic characteristics were quite comparable to those of much of the rest of San Jose's working class population.

The ecological<sup>1</sup> distribution of the subjects in the final participant group was also fairly representative of the San Jose metropolitan area. True and Doughty (1976a) collaborated to develop a typology of community from which the subject population came, including central city zones, residential zones contiguous to the city center, housing projects

near the city, transitional peripheral zones, satellite towns, squatter settlements, rural communities, and provincial towns outside the San José metropolitan area (III-16-32). According to their analyses of the 240 subjects for the initial medical screen, and the 82 matched pair subjects, True and Doughty found that both groups have roughly equal proportions of users and non-users who reside in the various neighborhood types. Nearly half of the subjects in both groups come from either central city or residential contiguous zones, and all other zones are represented in the sample. Analysis of personal income information for the sample of users and non-users, when compared to 1973 Census data for the zones in which the subjects live, shows that the earnings of the study sample are representative of working class earnings of their neighborhoods (III-36).

We did not begin the process of finding qualified participants for the chronic marihuana use study project with any set of criteria for making group representative of San Jose's population. Indeed, we did not have any assurance that marihuana users were not completely deviant from the normal Josefino pattern of life. If that had been the case, we would not have selected a group that was at all representative of the working class life style. Expedient methods had to be used to identify and get to know individuals whose behavior could at any time cause them to be jailed. Retrospective analysis of the study sample allows us to say with confidence that it was, in fact, representative of the Costa Rican working

class in the most crucial social and economic aspects. Nevertheless, we must say that this representativeness was serendipitous. Later chapters will present further perspectives on the relationship of the subject procurement procedure to the formulation of the research problem of amotivational syndrome.

## NOTES

<sup>1</sup>The use of the term "ecological" here is derived from the usage of urban sociologists, implying spatial distribution of a city's component parts (Dotson and Dotson 1954).

CHAPTER IV  
MARIHUANA IN COSTA RICA

Earliest Spanish colonial documents do not reveal the origin of psychotropic Cannabis use in Latin America. The plant itself is not native to the new world, but it arrived in Mexico practically with the arrival of Cortez. Cannabis was an important 16th century source of cordage, but the passage in Mexico of an ordinance in 1550 forbidding its cultivation hints that psychotropic use of the drug may have begun early (Carter 1976: 3). Elsewhere in Latin America, Cannabis sativa was grown for cordage in relatively few places, and Chile became the only exporter of hemp products to Spain (Partridge 1974: 39). Costa Rica apparently had to import hemp products as late as 1864, when an import tax exemption was enacted for sacks made of that fiber (Carter 1976: II-3).

Cannabis cultivation for fiber and for psychotropic purposes are very different, and they can exist independently of each other. The absence of solid evidence to confirm the existence of a psychotropic Cannabis using tradition during the colonial period leads to the suspicion that Cannabis as a psychotropic was introduced to Latin America considerably later than the arrival of the Spanish conquerors. Probably the oldest tradition of psychotropic Cannabis use in the

New World is the Brazilian tradition. Partridge concludes that the adoption of ritual marihuana use by remote indigenous tribes in Brazil may mean that the drug's arrival in Brazil was relatively early (1974: 40). The lexicon of Cannabis use in Brazil apparently contains evidence of a West African origin for Cannabis use in Brazil (Ibid.). If so, the arrival of Cannabis as a psychotropic drug in that region may have been as early as the first half of the seventeenth century.

Costa Rican users themselves sometimes tell stories of Indians using marihuana before Spanish conquest. It is popular to claim that the Indian "peace pipe" held marihuana instead of tobacco. Neither of these claims has any historical or botanical supporting evidence. A more likely time for Cannabis' arrival in Costa Rican is roughly the four decades bracketing the turn of the century. During that period, a railroad from San José to Costa Rican's Atlantic port of Limón was under construction, and foreign laborers were being hired to clear the right-of-way and lay the roadbed. Psychotropic Cannabis use was apparently first observed in Costa Rican among railroad workers in the 1880's by Adolf Tonduz, assistant to the famous botanist, Henri Francois Pittier (Carter 1976: II-4). It is not specified in Tonduz' account whether he saw blacks or Chinese smoking and cultivating Cannabis, since he referred only to "coolies," which could be taken at that time to mean either race. Nevertheless, the workers on the San José-Limón railroad are the most likely carriers of marihuana use into Costa Rica.

The knotty problem of sorting out which group actually brought marihuana into Costa Rica is partially solved by examining the drug-using backgrounds of both the Chinese and the African-descended railroad workers. The first large contingent of Chinese railroad workers arrived in 1888 following de Lesseps' abandoning a canal building project in Panama. China began using Cannabis for fiber very early in its history, but the preferred psychotropic in China is opium. Generally, Chinese railroad workers imported to the New World during the nineteenth century brought opium, not Cannabis, with them.

On the other hand, the African-descended Jamaican railroad workers have a direct historical link with the venerable Indian tradition of Cannabis use. Indian indentured servants shipped to Jamaica in 1840 brought a rich and varied tradition of psychotropic Cannabis use to their new Caribbean home. Although there is no real documentation of the diffusion process, it seems most likely that the black Jamaicans adopted some of the most fundamental patterns of Cannabis smoking and cultivation, which they brought along when they were hired to build the railroad to the Atlantic in Costa Rica. Supporting evidence for this explanation is found in the marihuana lexicons of Jamaica and Costa Rica. Jamaicans call their Cannabis preparation ganja, and one of the slang words for marihuana used in San José is canchac, apparently a direct cognate. Limón and its environs are presently a center for marihuana production, and it is also the place of origin for all Jamaican-descended Costa Ricans. Marihuana

use is also reputed to be more widespread in the Limon area than in other parts of Costa Rica. In sum, Jamaican-descended black Costa Ricans probably played an important role in bringing a psychotropic Cannabis use tradition to Costa Rica.

There are other opinions about the arrival of Cannabis in Costa Rica which also have some factual grounds. Mexico may have had some influence on early patterns of Costa Rican marihuana consumption, because a tradition of use was established there by the late nineteenth century, and it may have diffused to Central America. The evidence for this lies in the current use of the Mexican term, mota for marihuana among Costa Rican users. Volunteers from Costa Rican who fought in World War I may have learned to smoke marihuana overseas and returned with the habit (Carter 1976: II-6). Probably all of the above described theories on the arrival of psychotropic Cannabis use in Costa Rica are true to some extent, although the Jamaican influence is strongest in present-day patterns of marihuana smoking. The limited cultural elaboration of Costa Rican Cannabis (described later in this Chapter) use implies a fairly recent arrival, as well as a fragmented diffusion process, where only the barest essentials of marihuana smoking were brought to Costa Rica.

The first indication that the Costa Rican government was concerned about psychotropic drug use was in 1913, when a delegate was sent to the Second International Conference on Opium (Carter 1976: II-7). Although no mention was made of Cannabis at the conference, Costa Rica signed an international

drug treaty shortly thereafter. Ten years later, the first drug control laws were passed in Costa Rica, and four years after that, in 1927, a drug advisory board was established. By 1928, laws had been passed regulating import, export, and sale of opiates and marihuana (Ibid.).

A 1929 anti-drug campaign yielded the first evidence of marihuana use in San Jose among its lower-class inhabitants (Ibid.: 9). This "dragnet," intended to establish control of drug traffic and to provide treatment for users, also produced a number of arrests for use and sale of opiates, including heroin. The connection between addictive opiate drugs and marihuana remains implicit in the formation of governmental policy during later stages of the official history of Cannabis in Costa Rica. The Sanitary Code of 1949 treats marihuana, cocaine, and the opiates equally, stiffening penalties for cultivation, sale, or simple possession of all these drugs (Ibid.: 10).

A Single Convention on Drugs and Narcotics issued by the United Nations in 1961 was approved by the Costa Rican government in 1972. Costa Rica was thereby accepting international responsibility for controlling the production of and trade in marihuana and a number of other drugs. The establishment of a police Department of Narcotics some two years before also indicates a growing official concern about drug use. Survey of newspaper back issues shows that the flare-up of official and public concern about Cannabis and other drugs around 1972 is sudden, and the first since the

time of the 1929 drug law enactments (Doughty 1976: II-59 and 60).

In 1972, one of San José's newspapers, La Prensa Libre, carried out a campaign against drug use, mainly aimed at marihuana (Ibid.: II-51). The reason for growing concern, according to the newspaper's editors, was the increase in Cannabis use among young people of the middle and upper classes (Ibid.). Whereas earlier in its history, marihuana had caused little worry (except for a brief initial period of establishing control mechanisms) because its use was confined to a segment of the lower class, now marihuana was regarded as a threat to the "cream" of Costa Rican youth. The Prensa Libre campaign, producing hundreds of articles on the ill effects of marihuana use, set a tone of newspaper writing on the subject which has been consistantly negative in Costa Rican newspapers ever since. Lurid reports of marihuana users abounded during the initial campaign, to be replaced later by scientific reports on the negative effects of the drug.

Krauskopf's attitude test results (1976) provide evidence of La Prensa Libre's campaign. One of the most significant differences between users and non-users in the entire attitude test was in attitudes concerning marihuana (XVII-24). Non-users almost unanimously rejected marihuana in all items involving the drug, despite the fact that some had neighbors or even relatives who were chronic users. This result, of course, is not totally the consequence of a single newspaper

campaign. Lower class Costa Rican mothers probably also have an influence on the formation of these attitudes as they attempt to keep their sons away from the low-life ambience where marihuana use thrives. Nevertheless, reinforcement in newsprint of mothers' opinions must have some role in maintaining negative views on marihuana and its use.

It might be inferred that a ray of understanding amidst all of the public anti-drug zeal appeared in March of 1974 in the form of a revised Sanitary Code. According to the new code, traffic and cultivation of marihuana are to be punished more severely than before, but possession for personal consumption is to be handled by referring users for medical treatment (Ministerio de Salubridad 1974: articles 371-372, 126, 127). As yet, there is no treatment facility for this purpose, and police still arrest users for possession of relatively small amounts on suspicion of trafficking. Nevertheless, instead of risking six months in jail, users now can count on being free, usually in a couple of weeks.

United States influence has been crucial on both sides of the emergence of marihuana as a publicly recognized social problem. Imitation of the highly fashionable patterns of drug use which originated in the United States during the middle and late 1960's is probably responsible for the adoption among Costa Rican middle- and upper-class youth of marihuana use. This facet of the drug situation in Costa Rica is apparent in the observed similarity of youthful Costa Rican marihuana smoking practices and those of

youthful smokers in the United States. Limited dosage, ritualistic sharing of a single cigarette, and selection of identical use settings are common to both the Costa Rican youth and North American youth styles of Cannabis consumption.

On the other hand, the United States has had an active part in forming government agencies in Costa Rica for drug control enforcement. The United States Drug Enforcement Administration (DEA) offered consultant services to the Costa Rican government for the purpose of setting up a special police force to enforce drug control. It is particularly ironic that the Cannabis use patterns described below are not directly related to United States influence, yet they are forced to withstand the main thrust of two opposed influences which did, in fact, emanate from that country.

### Preparations

Among Costa Ricans most aware that marihuana has been with their people for at least several generations are members of the urban lower class. Such individuals, making up the bulk of our base sample of 240, are familiar with a very limited variety of psychotropic drugs. The two most commonly used are marihuana and alcohol. In our matched pair subsample of 82, some men admit to having used barbiturates on one or two occasions, and among younger users there are isolated cases of glue-sniffing. A single individual in the subsample had tried LSD and psilocibin mushrooms. None mentioned previous use of amphetamines, although the field researchers

noted streetside mention of benzadrine. Opiates in the form of low-grade morphine were tried by two of the individuals in the subsample on isolated occasions, never to be used again after a single experience. However, the majority of users in our matched pair subsample adhered to marihuana and alcohol as their principal drugs.

Other sectors of the population, including university students and some upper-middle-class professionals, have access to a much wider range of drugs, from cocaine to synthetic mescaline. Their social and economic means have allowed them to secure these drugs at prices that would be exorbitant in the United States, and that are certainly out of the reach of lower-class drug users. University student and upper-middle-class drug use is modeled after the "Age of Aquarius" ethos which was popular in the United States in the late 1960's i.e., the search for expanded consciousness and social awareness by means of LSD, cocaine, mushrooms and marihuana. Such a use pattern is imitated to some extent by the youngest of the lower-class marihuana users (usually too young to qualify for our sample) who, for economic reasons, must replace acid "trips" and cocaine snorting with glue sniffing and pill-popping. Older lower-class marihuana users do not find these activities appealing.

Cannabis use among the long-term users in our Costa Rican sample is relatively devoid of variety. The staple of use is picadura, the chopped-up tops and flowers of the female Cannabis sativa plant. This is consumed most commonly in the

form of wheat paper cigarette, which contains not less than 175 mg. and not more than 300 mg. of marihuana according to repeated weighings of net contents of street-sold cigarettes. Occasionally the contents of several of these cigarettes will be combined to form cigars. Costa Rican users almost exclusively consume marihuana by smoking it. Preparations other than picadura are extremely rare.

Field workers' reports include three other preparations observed or described. The first of these is a black liquid, called caldito claimed by users to be the result of prolonged boiling of picadura. The process does not resemble any Indian bhang recipes (Chopra and Chopra 1957), but its product could have psychotropic effects if it retained diffused particles of the picadura. The liquid was observed only once.

A second special preparation known to some Costa Rican Cannabis users is pambelé.<sup>1</sup> It bears a close resemblance to the Indian ganja, as described by Chopra (1957: 19). Pambelé apparently is imported from Colombia in the form of flat leaf-shaped blocks, composed of compressed resin and plant material of Cannabis plants grown near the Colombian coast. Among users in Costa Rica, it is considered a delicacy. A small amount is scraped from the edge of the block into a cigarette paper, and is then rolled and smoked in the same way as picadura. We were unable to secure any pambelé for analysis, but users claim that a cigarette of this material is worth ten of any Costa Rican grown marihuana.

A third special Cannabis preparation in use in Costa

Rica is hachís. This is apparently a generic term used to designate any concentrated form of Cannabis. It has not actually been observed in use by the field research team, but descriptions of its use and preparation are vivid enough to assure that it does exist in Costa Rican Cannabis use contexts. The descriptions come from older users, all with 25 or more years of experience. One of them claims to be able to manufacture two of the three varieties of hachís. The first of these is a solid block of what appears basically to be resin. The informant describes pounding the dried plant with a Coca-Cola bottle, collecting the residue from this pounding, and compressing it into a rectangular box, which is then buried and allowed to harden. It is not specified if the plant material itself is included, because the informant in this case is remembering a process that he witnessed 20 years ago. If the plant material is not included, the process would resemble the Egyptian process of manufacturing hashish described in Drake (1971: 72). When the block has aged sufficiently (over a period of four weeks or longer) it is removed from the ground, and shavings from the block may be smoked. The informant remembers being able to smoke this preparation anywhere in the city without worry.

The other two Cannabis preparations given the name hachís require an involved chemical process and special technical expertise. Because psilocibin mushrooms are used, it is not a pure Cannabis preparation in the strictest sense. The process of manufacture is as follows:

### Ingredients

4 oz. marihuana in picadura

6 oz. 95% alcohol

1 oz. honey

2 oz. psilocibin mushrooms

Place marihuana, alcohol, and honey in a jar (a 16 oz. mayonnaise jar) and mix ingredients thoroughly. Bury the jar in a safe, shady spot, and allow ingredients to steep for a week. Open and add mushrooms. (At this point the process observed was left off because the materials had been stolen. The remaining steps are as described by the informant.) Allow materials to mingle another week, then remove from the ground. Strain the liquid from the marihuana and place in a distillation retort. The distillation apparatus should have two collection chambers placed along the vapor-carrying tube. The first collects the condensed esencia (essence) of marihuana (what is known in the United States as "hash oil"). The yield will be 1-2 grams, depending on the quality of the marihuana used.

The preferred manner of using the oil is to add one or two drops to a shot of brandy.

The same informant who described the above recipe is the reputed source of another preparation, also called hachís, which takes the form of a powder. We were unable to obtain the recipe, but we did obtain a description of its nature and use from another informant.

. . . they said that it was hachís . . . they gave my brother five packets and three to me . . . I took one in a half a glass of water . . . afterwards a whole blessed day . . . and the following day I was high . . . but it was very strange . . . I don't know, but I wasn't hungry . . . It was a very white powder . . . and I couldn't figure out how they got it . . . It must be a process.

The powder may be drunk, as described above, or either it or the oil may be combined with tobacco and smoked in a pipe.

Such special, strong preparations represent but a tiny percentage of Cannabis use by our sample. For daily use, even in the cases of those who are familiar with the stronger preparations, picadura rolled into cigarettes is the overwhelming preference.

### Production

Because it would have exposed our informants to too much risk of arrest, the anthropological field team did not visit a professionally run marihuana plantation. One amateur operation was visited, but it was so poorly cared for that its potential yield was in doubt. We were able to elicit two excellent detailed descriptions of cultivation, however, which appear accurate and corroborate each other. The two informants who supplied these descriptions do not know each other; yet they seem to agree on all of the details of marihuana planting except for the time needed for maturing before the plant may be cut for drying. The following sequence is based mainly on these descriptions.

Costa Rica has many zones where cultivation of Cannabis is possible. Users generally cite the area around Limón on the Atlantic coast, and Buenos Aires, south of and within the Talamanca Mountain range, as the areas where the best domestic Cannabis is grown. For potent Cannabis, the informants say that one must search for a hot climate with sufficient, but

not over-abundant rainfall. They do not describe exact water tolerances of the plant, but given the high temperatures of these areas, the water needs must be great. The first step in Cannabis planting is preparation of the plot. For this, standard slash-and-burn is used; i.e., the vegetation is cut and dried, and the area burned. Burning must take place just before the beginning of the rainy season. One corner of the plot is set aside as a seedling nursery, and the seeds are planted two by two, six inches apart. They must be carefully watched during the first six weeks of growth, because during this period they are especially vulnerable to insects and competition from other plants. When the seedlings have reached a height of 6-8 inches, they may be transplanted to the larger plot. For transplanting, female plants are considered the most worthwhile. Furrows must be made in the larger plot, and the seedlings set one vara apart along the furrows. The plants may now be left to their own, except for occasional spraying for insects or watering as deemed necessary.

At this point, the informants differed on how long the plants should grow before harvesting. One claimed that four months are sufficient, while the other claimed that six months is the minimal growth time for acceptable psychotropic strength, and that seven to eight months would be ideal. The difference of opinion may represent a difference of growing areas in their respective experiences.

Harvesting is begun by peeling the bottom of the plant

stalk near the root. The plant is then left another week to dry before breaking it off at the bottom for stripping. The lower, thicker leaves and branches are ignored by the harvester, who uses a curved pruning knife to strip off the upper leaves, flowers, and seed heads. These parts are then placed in the shade for drying, which takes 15 to 20 days. Once the material has dried sufficiently, it is chopped into very fine particles, using a very sharp knife and cutting board or scissors. This process is sometimes delayed, however, until the material reaches the vendor. Seeds may be saved for re-planting or they may be left in the picadura to increase its weight and volume. Sometimes the thick stems are also chopped finely and included in the picadura to increase weight and volume.

The above description does not indicate expertise in the area of resin production. Costa Rican users and growers seem not to be sophisticated in their perceptions of the capabilities of the Cannabis plant. Growers seem to know that the plants must be cared for intensively during the first six weeks of life, but they do not go further in stimulating resin production or in collecting the natural high-potency substances that occur naturally during the plant's growth. They are aware of Cannabis' dioecious nature, recognizing the morphological differences and the great suitability of the female to marijuana production, but this perception seems based on the greater leaf production of the female plant, rather than an awareness of her resin-producing qualities.<sup>2</sup>

Users are vaguely aware of the existence of more potent Cannabis preparations, but they do not really know, except for a few individuals, what they are nor how they are made. Cannabis planting and growing technology in India, Egypt, and even Mexico has developed over the centuries into an exact art of resin stimulation and careful manufacture of specialized potent forms. Costa Rican Cannabis production rarely goes beyond cutting and chopping of the dried plant material.

Evidence of the lack of concentrated preparation in Costa Rica is abundant in newspaper reports of police confiscations of Cannabis. In our files which date to 1970, there are only a handful of references to high-potency Cannabis preparations. Such materials are usually in the possession of foreigners. The overwhelming majority of reported confiscations made by police range in size from a few ounces to shipments of one hundred pounds, usually in the form of picadura, although occasionally in the form of whole, uncut plants.

The relative crudity of Cannabis production in Costa Rica may in part be due to the constant efforts of police to capture quantities of the drug and to arrest shippers and growers. Plantations must be relatively isolated and inaccessible in order to be safe from the Narcotics agents' periodic sorties into the growing areas. Intensive cultivation of the plants, necessary for resin production and collection, is made less feasible by this isolation and

secrecy. Large scale cultivation would multiply the number of people who know the location of the planted field, a risk that no grower is willing to take. Fields are often left completely untended from just after transplanting until harvest time.

### Forms of Use

By far the predominant smoking vehicle for marihuana is the cigarette rolled in wheat paper, the mildest tasting paper available at a low price. The paper is bought by individual marihuana vendors in 8 1/2" by 11 1/2" sheets at Ø0.50 per sheet (\$.06). One sheet makes 32 cigarettes, so that, to roll one pound of picadura into roughly 1800 cigarettes, a vendor will buy 60 sheets.

The wheat paper used to roll the street cigarette is characteristically yellow in color. This color stains the hands of both users and rollers, and it may be removed only by hard rubbing of whetstone or rough brick. Even though many people still smoke tobacco cigarettes that are also home-rolled with this paper, yellow stains on thumb and forefinger of the right hand are considered identifying signs of marihuana users, both by their fellow users, and by the police. The oldest users in the sample often achieve an almost mahogany-like hue on their fingers as a result of years of use.

The rolling process is quick and unceremonious, with an emphasis on rapidity and efficiency. Often especially skilled



Rough handling on the part of users is possible because the cigarette has much more paper than normally would be needed to hold such a small amount of picadura for immediate smoking purposes. The cigarettes are long and thin with a double or triple lateral overlap and closure at both ends. They are made to take punishment in the street.

When a user is about to smoke his cigarette, he never simply lights up. The cigarette must first be opened and the tightly packed contents loosened. The material is often carefully examined for color, smell, twig content and seeds. Twigs are discarded, and seeds are either crushed or discarded because they do not burn evenly. Even so, most regular users have tiny burned holes in their shirts caused by hot seeds that have dropped out of the cigarette while smoking. If the picadura has no smell, it is considered too old to be of much potency. Color is used to identify roughly where the material is grown, a system of classification which will be described in more detail in the following pages.

Often vendors will keep a quantity of marihuana hidden in the ground before it is sold. Users have a special test to discover whether this has occurred. If marihuana remains in the ground for more than a few days, the picadura can be infested with insects that spin webs in the material. When the user passes a pencil tip through material that has been subjected to these conditions, the picadura "beards" on the end of the pencil and hangs there. Good picadura always falls away from the pencil tip.

Costa Rican marihuana smokers do not pass the lighted cigarette from one smoking companion to another. Individual users smoke their own cigarette from beginning to end, without offering a single puff to those around them. Exceptions occasionally occur among the youngest consumers in our study population who sometimes pass around the last cigarette of the roll possibly in imitation of marihuana useage styles seen in movies made in the United States. However, the general pattern is of non-sharing, and seems to be a function of the volume in use. It simply would not be practical for users to share individual cigarettes when each user smokes several "joints" in a single session. Individual consumption, as seen through field observation, ranges up to 40 cigarettes<sup>4</sup> in a session of smoking.

In order to minimize paper consumption, Costa Rican users often combine the contents of several street-size cigarettes, which as explained above have an excess of paper. The resulting puro (literally, "cigar") may contain the picadura of as many as six or seven street-size cigarettes.<sup>5</sup> Other stylistic variations on smoking are worthy of individual descriptions:

Pipa de paz (peace pipe) - A wooden tube two to three inches long which is closed at one end and has a hole in the side for insertion of the bicho ("joint"). It is used by younger consumers who often hang it around their necks on a long leather thong. The peace pipe enables the smoker to finish the joint without touching it.

Cachimba (name given to any tobacco pipe used to smoke Cannabis) - Sometimes cigarettes are inserted into the bowl of the pipe, and sometimes

loose picadura is placed in the bowl, either by itself or mixed with tobacco. The mixture is made in this order: one layer of tobacco, one layer of marihuana, and one layer of tobacco. In comparison with cigarette smoking, pipe use is relatively rare. Users claim that it is practical to use pipes for smoking marihuana only when the material is available in abundance, because more waste accompanies pipe smoking than cigarette smoking. The advantage of pipe use is the elimination of paper from the smoking process.

Coco seco (dried coconut) - This is a rare style said to be used in Limon by the blacks to test batches of freshly cured marihuana for potency. A coconut is perforated at one end and the meat cleaned out through the hole. It is then dried, and when the drying is completed another hole is made in the other end. Dried marihuana tops and flowers (not yet chopped) are inserted in the first hole. Hot charcoal is then inserted through the first hole, and the smoker inhales through the second hole in the coconut.

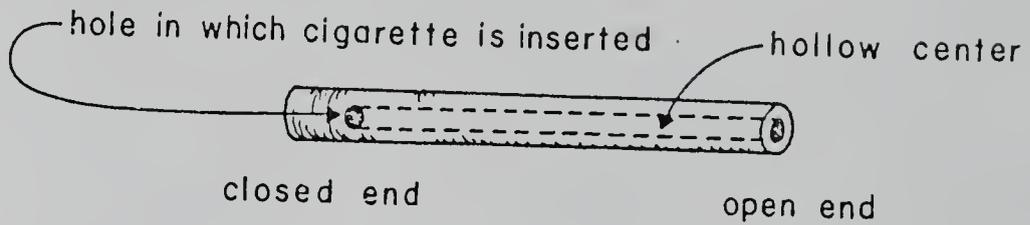
Pipa de agua (water pipe) - Another rare form of smoking. The only two designs observed by field workers were a composite wine bottle-straw-bowl design and a one-piece bamboo pipe. The smoke is drawn through the water, and thereby cooled, reducing harshness.

Caja de fósforos (matchbox) - The user perforates the top of a wooden matchbox, making a hole just big enough to insert a single cigarette. He then tears out one end of the tray section. The cigarette is lit and inserted in the hole, and the user inhales through the open end of the box. The wide opening and the mixing of air and smoke that results is said to give a more powerful initial "rush."

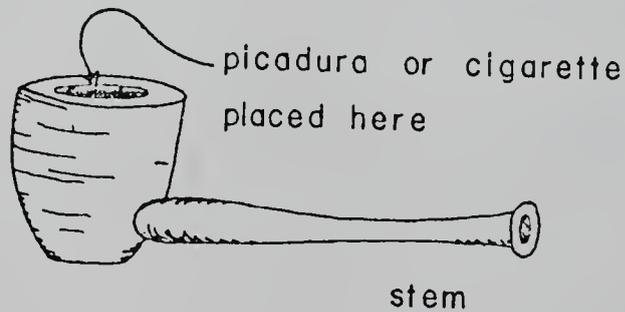
The above descriptions deal with variations on cigarette and picadura smoking, and they often assume an abundance of marihuana. The dregs are also important. Costa Rican users are similar to North American marihuana users in their careful consumption of the very last shreds of marihuana and paper that remain when the cigarette is nearly finished. The

FIGURE B  
IMPLEMENTS USED FOR SMOKING MARIHUANA

Pipa de paz (peace pipe)



Cachimba (pipe)



Coco Seco (dried coconut)

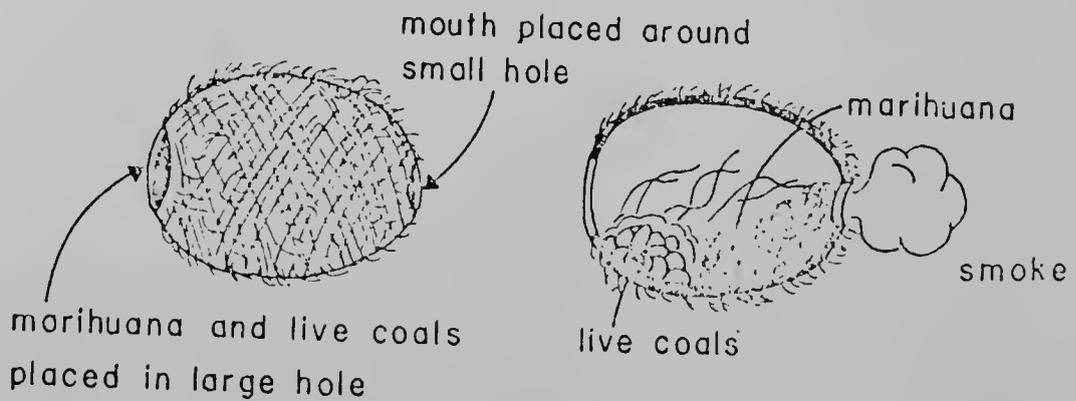
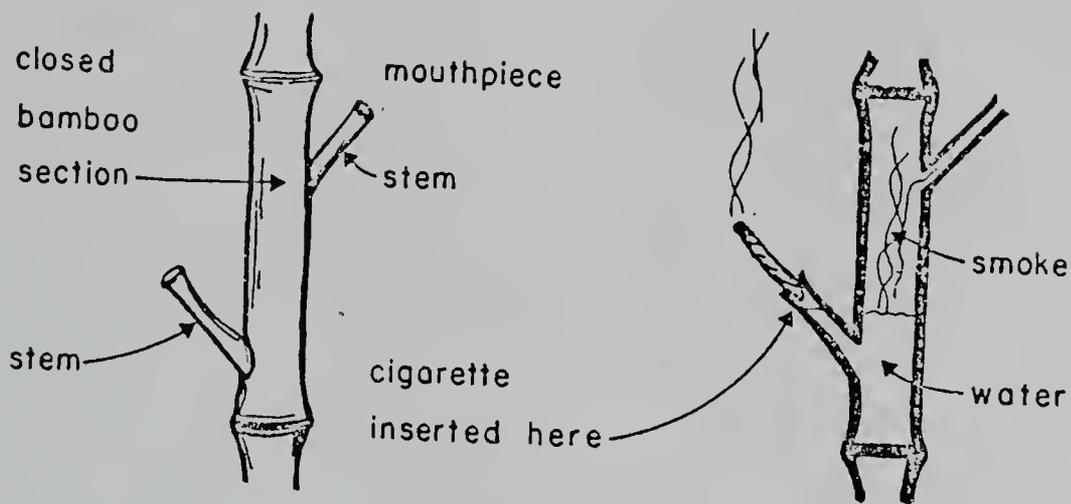


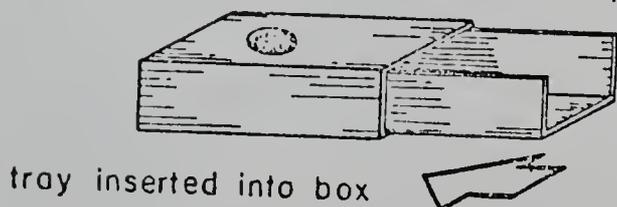
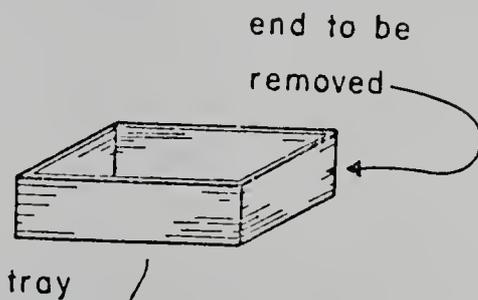
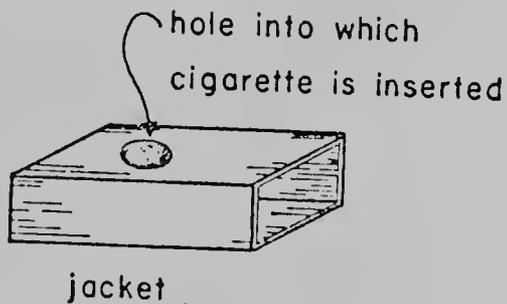
FIGURE B

IMPLEMENTS USED FOR SMOKING MARIHUANA

Pipa de agua (water pipe)



Caja de fos foros (matchbox)



mouth placed here,  
and cigarette inhaled  
through box

FIGURE B

IMPLEMENTS USED FOR SMOKING MARIHUANA

Taco

marihuana butt



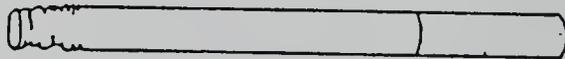
tobacco cigarette



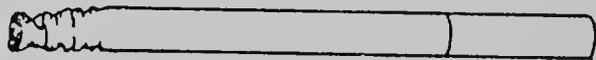
tobacco removed from cigarette tip



marihuana butt placed in tobacco cigarette



"taco"



Muleta (crutch)

wood matchstick



paper match



twig

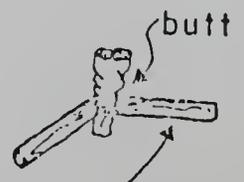
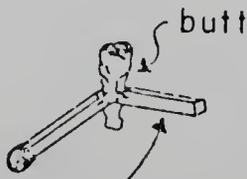
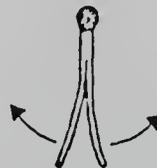
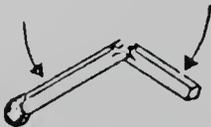
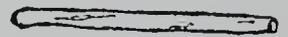


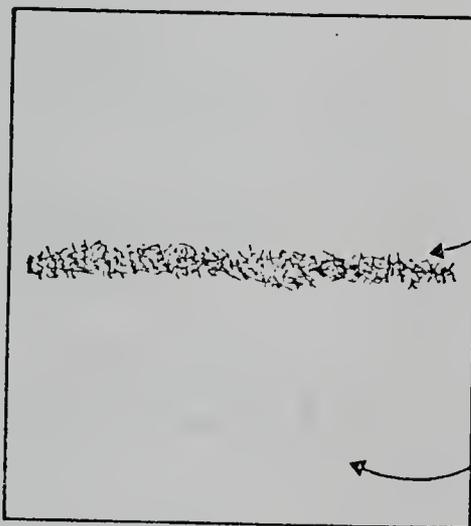
FIGURE B  
IMPLEMENTS USED FOR SMOKING MARIHUANA

La Bandera (flag)

marihuana cigarette

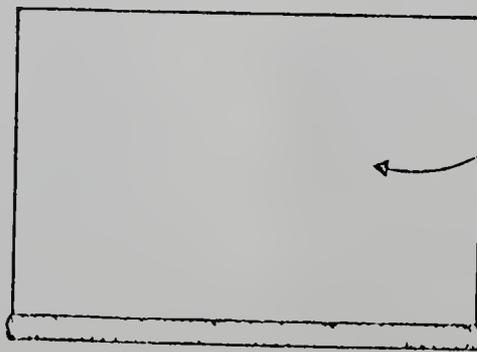


unrolled



picadura

paper



excess paper  
used as handle

picadura

re-rolled with less paper

following are Costa Rican methods to matar la tocola ("kill the roach"):

Taco - By far the most frequently used method, the taco is made by emptying the tobacco from the end of a regular tobacco cigarette and placing, in the space that is opened up, the final piece of the marihuana cigarette. This end is then twisted and moistened, so that the roach will remain secure. The cigar is then lighted, and the entire tandem cigarette is smoked.

Muleta (literally "crutch") - Costa Rican users make muletas out of the handiest material available. This can include any kind of twig, a broomstraw, matchsticks (either wooden or cardboard), a bobby pin, or a paper clip. Twigs and wooden matchsticks are broken, and the roach is placed in the broken notch. The two ends are then pressed against each other so that the roach is held in between. Broomstraws and cardboard matchsticks are split, and the roach is pressed between the two split ends. Bobby pins and paper clips are used in the same way as cardboard matchsticks.

La Bandera (the flag) - Because most street cigarettes have an excess of paper, the user may re-roll the cigarette using only 1/3 of the paper. The excess is used as a handle for the marihuana cigarette, enabling the user to hold the cigarette without staining the fingers, and to finish the entire cigarette without having to resort to a taco or a muleta. (It might be noted here that excess paper, if not smoked, is never thrown away carelessly. It is either burned, chewed into a little gray ball, or saved for future use. Narcotics police identify this paper with marihuana use, and become suspicious of the places where it is seen lying around.)

The above items are part of everyday use of marihuana in Costa Rica, because cigarette smoking is the preponderant use style.

### Types

There is little concensus among the Costa Rican users in our sample regarding local typologies or taxonomies of

marihuana as they use it. Color and place of origin appear to be the principal identifying factors. For consumers, place of origin usually refers to place from which the material was brought directly to San Jose, i.e., usually Limón or San Isidro del General. Thus, marihuana that is produced in Talamanca and shipped through San Isidro, becomes San Isidran.

According to users, Limón produces two varieties. One is almost black in color, with an earthy aroma and a harsh taste which irritates the throat. Its effects are strong, and they are felt very quickly after smoking is begun. The other, la rubia or "the blonde," is almost yellow in color, is less fusty in aroma and much less harsh in taste. It is also strong, but the effects delay ten to 15 minutes after smoking begins.

San Miguelito, a variety which comes from Panama, is one of the more controversial marihuanas recognized by Costa Rican users. The dried leaves have been described as yellow and curly, brown and straight, and many variations in between. It usually has many more seeds than the other varieties, and it is recognized unanimously as one of the strongest marihuana available to the Costa Rican consumer.

According to Cannabis users in our sample, San Isidro del General produces a marihuana that is passable, but that does not receive as high overall ratings as la negra from Limón and San Miguelito from Panama. Table 5 lists the characteristics attributed to the four most often named varieties by Costa Rican users.

TABLE 5

## Common Marihuana Types

Marihuana Type	Color and Smell	Consistency	Origin	Taste	Effects-Remarks
La Negra	Black "earthy smell"	Straight fine seeds	Limón	Harsh, rasps the throat	Strong and imme- diate effect
La Rubia	Yellowish (blonde) "like a cut lawn"	Curly many seeds	Limón	Smooth	Moderate, but "good high" and delayed action
La Cafe	Brown "little odor"	Straight few seeds	San Isidro del General	Neither harsh nor smooth	Compara- tively weak
San Miguelito	Yellow to brown "fusty, and stronger than tobacco"	Curly to straight many seeds	Panama (via Limón)	Harsh	Strongest available

### Medicinal Preparations

As compared to reports described by Rubin and Comitas (1975) for Jamaica, Cannabis in Costa Rica does not have a wide variety of medicinal applications. Only three medicinal preparations were noted by the field research team, and all were specifically used for alleviating either coughing or asthma symptoms. Possibly the concentration on asthma remedies is related to the higher frequency of acute asthma attacks in San José. The city has an extremely damp climate where asthma is more of a problem than it is in most temperate areas.

The informant responsible for the hachís recipes also supplied us with a cough medicine recipe. The same initial procedure of soaking marihuana in pure cane alcohol makes up the first step. Instead of distilling the drained-off alcohol after a two-week soaking period, this liquid is mixed with honey and sugar base soft drink syrup. Two tablespoons are guaranteed to clear up the most stubborn, persistent cough.

The most mentioned asthma remedy is a tea made from the boiled root of the Cannabis plant. This preparation is known to people outside the marihuana-smoking social networks and is often used by people of respectable social position for relieving asthma symptoms. Less frequently mentioned is another boiled preparation, using the seeds of the plant. Cannabis seeds are first placed in a thin cloth and crushed by beating the cloth with a heavy object. The cloth is then placed in water and boiled with the seeds inside. Both the root tea and the seed tea are to be drunk by the asthma sufferer.

There is some historical evidence that the medicinal properties of Cannabis were beginning to be recognized during roughly the same era when the first laws controlling the drug were enacted. The Costa Rican Synopsis of Vegetable Medicines (Perez-Cabrera 1938), contains a section on Cannabis sativa. The initial comment in this section is of interest to the question of amotivational syndrome, because it attributes "lethargy and idiocy" to the habitual use of the drug. The account continues to name a wide range of maladies for which Cannabis is therapeutic, including cancer pain, madness, whooping cough, and asthma (Ibid.: 87). However, the testimony of users in our study sample does not reflect a widespread practice of this kind of medicinal Cannabis use in San Jose.

One informant who suffered from severe asthma gave us a very strong testimonial to the effectiveness of marihuana in alleviating the symptoms of this disease. He and his two brothers all suffered from asthma since they were small children, occasionally experiencing acute attacks. Along with the older of his two younger brothers, he began smoking marihuana at an early age; except for occasional wheezing, neither have suffered from asthma since they began regular smoking of the drug. The youngest of the three never took up marihuana smoking, and died at the age of 20 in an acute asthma attack. This younger brother's physical constitution was claimed to be abnormally weak, but no weaker than that of his brothers. The informant believes that his younger

brother's refusal to use marihuana was in part responsible for his early death.

Smoking marihuana in the normal manner is claimed by users to have a number of additional minor medicinal uses. Normal smoking is said to cure headaches, hangover, insomnia, loss of appetite, impotence, depression and general malaise.

#### Pharmacological Content of Costa Rican Cannabis

A major difficulty with much of the research on amotivational syndrome is the question of dosage. Only in the artificial environment of hospital testing as practiced by Miles, et al. (1975) or Mendelson and Meyer (1972) do the studies reviewed in Chapter I achieve exactitude in dosage documentation, and even then, only for relatively brief periods of use. Studies of chronic, long term use are even more difficult in this respect, because the researcher must assume a degree of uniformity both in the habits of the subject, and in the quality of his drug during the period of use.

The two-year study in Costa Rican benefitted greatly from the recent advances in analyzing Cannabis' psychotropic ingredient. Delta-9 tetrahydrocannabinol (THC) has been shown to have most of the same physiological and subjective effects on humans in laboratory administrations as natural marihuana material.

We do not assume that the marihuana samples collected over the two-year period which comprised the field study are completely representative of the marihuana smoked by the users

for ten or more years; the users' experience of up to 30 years makes such an assumption difficult. Nevertheless, samples were collected at varied times of year, so that the two-year period itself was evenly represented. Most of the variations in the pharmacological makeup of Costa Rican marihuana, related to seasonal variations in Delta 9 THC content or to different methods of harvesting and processing the plants, should be reflected in these samples.

#### Content of Marihuana

Thirteen separate samples of marihuana were obtained from study participants, over a two-year period of time between 1973 and 1975 for analysis in laboratories designated by the National Institute of Drug Abuse in the United States. Marihuana samples were obtained by the field team in the forms in which the drug is sold to consumers, dried and chopped into picadura and usually rolled into cigarettes. We found through repeated weighings of confiscated street rolls of marihuana that these rolls of 25 cigarettes always weighed very close to 5 grams. Thus, a ten-gram sample usually consisted of two street rolls of marihuana cigarettes. The street-sized marihuana cigarette is so uniform that it is a basic unit of reference for determining the individual dosage levels among the users in the study sample.

Analyses were done in triplicate using thin-layer chromatography and gas chromatography. Table 6 shows the per cent by weight of the ingredients in the Costa Rican marihuana samples as indicated.

TABLE 6 (After Coggins 1976: II-46)

Analysis of Marihuana  
Mean Per Cent by Weight

Sample Number	Cannabi- Chromene*	Delta 9 THC	Cannabinol
1.	.25	2.49	.03
2.	.19	2.34	.02
3.	.19	1.27	.17
4.	.21	1.33	.28
5.	.18	3.41	.28
6.	.08	1.62	.07
7.	.15	2.86	.23
8.	.10	1.53	.08
9.	.24	3.72	.44
10.	.09	1.60	.26
11.	.13	1.78	.23
12.	.16	1.87	.18
13.	.17	1.67	.19

\*These samples contain only trace amounts of Cannabidiol (50 nanograms).

The extremely small amounts of Cannabidiol (CBD) in these samples is noteworthy since there is evidence that CBD interferes with the effects of Delta 9 THC in man (Coggins 1976: II-47).

#### Daily Levels of Marihuana Use

Two different methods were employed to elicit use level data for the study sample during the course of our investigation. With the first, the subjects provided reports on their daily use patterns by 24-hour recall, giving as exact information as possible, including precise number of cigarettes and the times at which they were smoked. With the second, subjects were asked to estimate their average level of use over time.

Twenty-four hour recall information was obtained in conjunction with the dietary survey and the sleep EEG studies. During the course of the dietary study in which daily food intakes were recorded by the field investigation team, users were asked to recall how much marihuana they had smoked over the previous 24 hours. This information was gathered for three consecutive days. Users undergoing the sleep EEG study supplied similar use figures based on 24-hour recall to the hospital liason personnel prior to their entry into the sleep laboratory. These figures were collected on all eight nights of the sleep EEG participation, and of course were not made available at any time to the sleep study technicians. All of the 24-hour recall data for each user was averaged, and then the mean marihuana consumption per day was computed for the entire sample of 41 users. This mean was 9.6 marihuana cigarettes per day,

with a median of seven and a range of from 2.5 to 40 cigarettes per day.

Intensive use-history interviews in which the subjects were asked to estimate their daily average consumption rates comprised the second method of use level elicitation. The consistency between the general self estimate in the life history interviews and 24-hour recall data was very close. The general estimate ranged from 2.5 to 25 cigarettes per day, with a sample-wide mean of 11.8 marihuana cigarettes per day, and a median of 10. We can see from this that the users' general estimates of average daily marihuana intake tend to be slightly higher than the 24-hour recall reports, but this difference is not great enough to be given any real importance in the study of chronic marihuana use.

We should emphasize that the level of marihuana consumption was dependent on access to the drug, and some users who demonstrated apparently unlimited capacity for smoking marihuana were prevented by their financial situation from smoking to their capacity. Some subjects reported or were observed smoking up to 80 marihuana cigarettes in a single day, when they were financially able. Such levels of consumption were achieved only rarely, and none were recorded in the 24-hour recall data. Nevertheless, the investigative team feels that it is important to include this information in qualitative form during any discussion of marihuana dosage levels among Costa Rican users.

In order to compare the daily marihuana consumption averages for the Costa Rican sample used in this study with use

data that are available from other cultural traditions of marihuana use, we computed the mean Delta 9 THC content for all samples analyzed during two years in the field. This mean is 2.1 per cent by weight. The comparable figures available are expressed in Delta 9 THC content of Cannabis material consumed. In order to make our estimates comparable, we multiplied the mean THC content for all samples by the amount of material consumed in milligrams. The figures that result are similar to the approximate figures for participants in other studies of chronic Cannabis users.

The light Costa Rican user from our sample who smoked 2.5 cigarettes per day is likely to be exposed to about 10 mg. of Delta 9 THC per day. This makes his THC exposure comparable to that of the typical chronic user in the United States, according to Rubin and Comitas (1975: 192). The average Costa Rican user, who smokes about ten cigarettes per day is exposed to somewhat less Delta 9 THC, about 40 mg., than his Indian or Egyptian counterparts, who consume 60 to 90 mg. of this substance. The heaviest user in our sample, who smokes an average of 40 marihuana cigarettes per day, has a level of Delta 9 THC exposure which is on par with heavy hashish smokers in India and among United States armed forces in Germany, at 160 mg. per day. Figures for the heavy Egyptian hashish smoker are somewhat higher, at 200 mg. per day (Rubin and Comitas 1975: 192 or Ibid.). Yet, the user who may on occasion consume 80 to 100 cigarettes in a single day, probably is exposed to over 350 mg. of Delta 9 THC.

Thus, the users in the Costa Rican sample represent a range of Cannabis use which is quite comparable to that reported in other studies where careful attempts to establish daily usage patterns have been made. Considering the absence of concentrated Cannabis preparations in Costa Rica, the Costa Rican smokers are actually doing much more smoking than their Indian or Moroccan counterparts, who are almost exclusively hashish smokers, to achieve similar dosage levels.

The standard marihuana cigarettes sold on the street, singly, or in rolls of 25, contain approximately 200 mgm. of marihuana. Assuming that approximately 50 per cent of the THC content of marihuana is lost to the air or destroyed in the burning cigarette (Manno, et al. 1970), the average daily dose of Delta 9 THC taken in by these subjects would range from 3.18 mgm. for the lowest level of daily use (2.5 cigarettes) and the lowest potency of marihuana samples (1.27 per cent), to 149 mg. of THC for the highest level of daily use (40 cigarettes) and the highest potency of THC content measured (3.7 per cent). The mean daily use of the 41 subjects (9.6 cigarettes) would provide a range of Delta 9 THC of 12.1 mg. per day for the least potent samples to 35.3 mg. per day for the most potent samples.\*

This conservatively estimated range of daily intake of Delta 9 THC would categorize these subjects as "typical"

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\*For exposure figures cf. Table 7. The figures in that table should be multiplied by .50 to obtain estimated dosage levels.

users in the scheme of comparative usage exposure levels presented by Rubin and Comitas (1975). Therefore, it may be said with confidence that the dosage levels of the matched pair sample of users places them in good standing among Cannabis users worldwide. Given the condition of dealing with marihuana use over long periods of time and a natural, uncontrolled setting, the data on Costa Rican Cannabis consumption are as good as can be expected, and they are much better than those available for any other study dealing with amotivational syndrome.

Costa Rican patterns of Cannabis use have cloudy historical origins, but their comparative simplicity testifies to a relatively recent arrival in that country. Cigarettes made of chopped, dried plant material are the staple of marihuana users who are apparently ignorant of the elaborate possibilities of Cannabis use. Concealment strategies dictate the form of the marihuana cigarettes used in San Jose, because a governmental policy of repressing Cannabis use has dominated use patterns for most of this century. Levels of consumption among Costa Rican marihuana smokers are comparable to worldwide figures for Cannabis use, and therefore, assessment of Costa Rican use patterns regarding the presence or absence of amotivational syndrome should have some relevance to the study of Cannabis use effects in other cultural settings.

TABLE 7

Extrapolations of Degree of Exposure to Delta 9 THC  
Based on Cross-Tabulation of Sample Analysis Results  
and Average Daily Consumption Levels.\*

Marihuana Smoked per day in mg.	Delta 9 THC Content in mg./100 mg. (% by weight)		
	Low	Mean	High
	1.27	2.11	3.72
Low (2.5 cig./day) 500 mg.	6.35 mg.	10.55 mg.	18.60 mg.
Mean (9.6 cig./day) 1900 mg.	24.13 mg.	40.09 mg.	70.68 mg.
High (40 cig./day) 8000 mg.	101.60 mg.	168.80 mg.	297.60 mg.

\*Since we cannot assume that the user absorbs all of the Delta 9 THC when he smokes, we must emphasize that these amounts indicate levels of exposure. An approximate dosage level may be obtained by multiplying the cell amounts by .50.

## NOTES

<sup>1</sup>Pambele is also the name of a Colombian prizefighter who is now holder of the world welterweight title, a fact which suggests the perceived potency of this material.

<sup>2</sup>The female Cannabis sativa plant excretes a resin which is particularly rich in Delta 9 tetrahydrocannabinol (THC), the main psychotropic ingredient in Cannabis preparations. Hashish and other strong Cannabis preparations are composed of resin from the female plant.

<sup>3</sup>The users may have this impression either because the doses swallowed are relatively small, or because by the time the slower effect of Cannabis ingestion arrive, they have already smoked again, thereby masking the ingestion effects.

<sup>4</sup>Smoked over a period of about 2 1/2 hours.

<sup>5</sup>The precise manner in which puros and street cigarettes were smoked will be discussed in Chapter V.

## CHAPTER V SMOKING "SET" AND EFFECTS

One approach to the development of a theoretical basis for interpreting the role of marihuana use in the lives of Costa Rican users is to begin with a systematic inventory of the drug's subjective effects. This chapter defines how the user's physical location and state of mind at the time of use interact with the physical and mind-altering effects of the drug to produce marihuana's effects. Ultimately the concepts presented here are intended to aid in assessing the applicability of amotivational syndrome to the smoking patterns of Costa Rican marihuana users.

### The User Typology

It is normal for people of similar habits to be drawn together in the course of their social activities. In certain contexts, even crowds act uniformly, as in the cheers shouted at football games, or the unison olé of the bull ring. In the case of marihuana smokers, a user typology can be built based on similarities and differences in social status, the smoking environment, nature and level of use, and reported and perceived effects. Chopra (1957) has already done this for India by identifying four different varieties of users.

In his typology, Chopra does not go far toward an analysis of specific effects. He sees basically three kinds of Cannabis intoxication: euphoric, hunger- and fatigue-relieving, and "narcotic." The first two are associated with relatively light dosages, and the last with very heavy use of concentrated, resin-based preparations. Since he is dealing with large differences in dosage level, Chopra's gross characterizations of Cannabis' effects seem adequate for his definitions of varying styles of Indian Cannabis use. His development of stylistic typologies simplifies what otherwise would be an undifferentiated continuum of extremely complex and varied factors.

Typologies such as Chopra's are useful in helping delineate the boundaries between clusterings of complex cultural phenomena. To be operationalized, they must take the approach of the ideal type. Such an approach allows for variability and nuance when applied to individual cases, at the same time that it employs a broad, cross-cutting principle to simplify the handling of otherwise unmanageable masses of data. Ideal types may be derived from religious beliefs, and ethical and symbolic systems, as did the types used by the German sociologist, Max Weber, in his analyses of the world's great civilizations (1958). Ours will be based on varieties of marihuana use and their relationship to the users' social environment.

Users in our sample fall into two broad categories: those who exercise readily discernible control over their immediate social environment, and those who, rather than

controlling such environment, must adapt quixotically to it. The former group leads a much calmer, more patterned and stable life. Because this stability permeates all activities of members of this group, including marihuana use, we shall call them "stable smokers." The latter group leads a much less secure existence. Its members find that they must hide their marihuana use from family and usually from fellow workers and supervisors as well. Because of their street-side pattern of use, we shall call them "street movers" or, if they are at-all-costs-clandestine smokers, "pastoralist-escapists."

The stable smoker is typically either the head of his household, or has made enough peace with the other adults in the house to be able to smoke at home. With the home as a basic refuge, the stable smoker has little need to expose himself to the risks of community sanction and possible arrest in order to pursue his habit. Stable smokers often succeed in finding work in situations where fellow workers also smoke marihuana, especially in occupations such as shoemaking, baking, tailoring, trucking or taxi driving. Shoemakers have a particularly strong reputation for marihuana use on the job. Usually other adults in the home (wife, in-laws, parents, etc.) are tolerant but disapproving. Only in rare cases do these adults actively share marihuana use.

The stable smoker generally eschews social contexts for smoking outside of this controlled environments. He considers running with a barra (crowd) too risky, and so, on those rare

occasions when he smokes on the street, he is likely to smoke alone. This does not mean that he is necessarily anti-social in his smoking behavior. There are bars in San José where certain people may smoke with relative impunity, because sufficient vigilance and precautions are maintained by the management to insure the security of their clientele. The marihuana smoked in these places is usually brought to the bar by the user himself. If he is well known in the bar, however, the bartender himself may provide him with material. Other smoking environments used by the stable smoker will be described in greater detail later.

Stable smokers contrast more sharply with fellow smokers of the pastoralist-escapist and street mover types than they do with their matched, non-user controls (see Chapter VI: 212-222). To a much higher degree than members of the other user types, they have steady jobs. Their families approximate those of the non-users much more closely than those of the other two types of smokers. They usually have a woman in the household to prepare regular meals. They tend to be older than the other groups, with a mean age of 33.9 and a range of 22 to 48.<sup>1</sup> During the study, they proved easier to find at home, more responsible, and on the whole more cooperative than were the street movers or pastoralist-escapists.

Street movers, who represent the group called street people in Chapter II and III, are constantly active in the street life of San José, and are highly skilled in the street language and bustling economic activity found there. Usually

they enter street networks during early or middle childhood, propelled by unstable home situations. Street movers may live in a family household, but may not smoke there. Many, however, live alone in cheap rented rooms in the boarding houses which surround the central market area and red-light district. There they may find a precarious peace with management willing to tolerate smoking in their room, but only so long as the rent is paid. When landlords do not approve of such activities, street movers tend to smoke in the city streets or the coffee groves that surround San José.

The style of life of street movers contrasts sharply with that of stable smokers. Home and family life are at best spotty, and often nonexistent. The street mover lacks a steady job, although he may have worked sporadically on an ad hoc basis (a pattern which is called camaronear, or "to shrimp" in the local street argot). The street mover's diet is similar to the rest of his life style: sporadic and uneven. Often lacking a household to which to resort for steady meals, he takes what he can get in the street, which is often neither nutritious nor satisfying. His pattern is one which has antecedents which reach back long before first marihuana use. Street movers tend to be younger than the stable smokers, with a mean age of 28.1 and a range of 20-43 years of age. Because of their disordered and mercurial life style, street movers are difficult to locate in their urban environment.

The smoker type with the smallest representation in our

sample is the pastoralist-escapists. Only two were selected for the matched pair sample for intensive testing and data gathering, yet they are important in the typology. Pastoralist-escapists represent a strong trend today among younger lower-class users of marihuana to embrace certain parts of the "Age of Aquarius" ethos of North America. Most pastoralist-escapists known to the research team were too young to qualify for the user sample. Those who were old enough had begun smoking before the arrival of stylish drug use in Costa Rica, but had taken up some of the superficial characteristics of this ethos after their traditional Costa Rican pattern of use had already been established. For some reason, pastoralist-escapists are unwilling to risk the danger of arrest. This differentiates them from the street movers, and, since they are otherwise similar to the street movers in their dependency on open smoking environments outside of the home or closed workshops, pastoralist-escapists resort to the surrounding coffee plantations and countryside for their marihuana smoking activities.

Being younger on the whole than the other two user types, pastoralist-escapists usually still live with their family of orientation. Otherwise, they are similar to the street movers in the general mercurial quality of their life styles. Pastoralist-escapists do not hold steady jobs, or at best, change jobs frequently. They have spent time participating in street culture activities, often after exposure to street culture at an early age, but they do not demonstrate the same

skill in street survival as their street mover counterparts. Pastoralist-escapists have some home and family life.

Of the 41 marihuana users chosen for the matched pair sample, 23 were stable smokers, 16 street movers, and two pastoralist-escapists. Their classification into these three basic types was based on two years' familiarity with the smoking habits and life history materials of each subject, and was then tested by a comparative, quantitative analysis of smoking environments. Through that analysis, we discovered that stable smokers, for example, may be distinguished from the other two types of users even by the frequency of effects claimed for marihuana smoking.

As in any kind of typology, there are certain borderline cases which could have gone into another category. Three of the street movers might have been termed pastoralist-escapists but were left in the street mover category because of their occasional demonstrations of openness of marihuana smoking and their propensity to smoke with street groups. Some stable smokers might have been called street movers on the basis of their life styles and nefarious economic activities, but they remained in the stable smoker category on the basis of their access to closed and secure smoking environments. Other stable smokers have changed status in such a way that they might now be called street movers. Since we finished eliciting intensive materials, they have lost the stable home situation which allowed them to smoke marihuana in peace. In these cases, we have attempted to "freeze" our point of view

so that some analysis of patterns of use at a specific point in time would be possible.

Changes from one smoking style to another are commonly found in the life histories of several subjects, especially the younger ones. Older stable smokers describe periods in their youth when they pursued activities similar to those of typical street movers. Young stable smokers often fluctuate between street mover and stable smoker style before settling on a stable smoker situation. A case in point is Gonzalo. He was 20 when we first contacted him, and had been living with his mother and two younger sisters for the previous year and a half. He had built the house in which they lived on government land in a community of squatters. His work history during the two years the project lasted had been one of steady work with infrequent job changes. His income during that period of time was the only support for his family. His smoking style bore all of the characteristics of a stable smoker because he had reached an accord with his family regarding his smoking habits. He smoked marihuana generally at home, or in the homes of some of his squatter neighbors who also smoked.

Gonzalo abandoned his home and family to avoid arrest after an argument with another neighbor which led to a knife fight in which the neighbor was gravely wounded. By the time he was able to return, his mother was living with another man, and Gonzalo was left on the street. His adventures since that time, including work history, trouble with the police,

and smoking environments, have resembled the life style of a street mover more than that of a stable smoker. If he follows the characteristic sequence found in old users, he may vacillate several more times between stable smoker and street mover before finally settling on a single style. Yet, we call him a stable smoker because the bulk of our information on Gonzalo's life style was collected during a period when he lived with his family and worked regularly.

In the case of Luis Diego, the opposite occurred. According to his life history, he has lived almost entirely in the street mover style, in spite of the fact that, when we first contacted him, he had been living a fairly stable relationship with a woman for about a year. Luis Diego moved back to his customary street mover style before we began to collect his life history materials. He was therefore classified as a street mover; this classification seemed to reflect his most customary style of life, as described in the life history materials.

One type of variation that does not occur in the users' vacillation between marihuana smoking styles is the transition from pastoralist-escapist to street mover. Paco, the older pastoralist-escapist, is on the verge of becoming a stable smoker as he is establishing his own family of procreation. He has never embraced the street mover style because of his strong aversion to open smoking environments.

Analysis of Smoking Environment Descriptions by the Users

The various smoking environments chosen by marihuana users are closely related to their relative control over social environments. By sifting participant observation data, life history materials, and marihuana use interviews, we were able to identify 13 kinds of marihuana using environments. These were abstracted from smoking context and effects material in the transcribed interviews.<sup>2</sup> Each segment of transcribed interview text was examined for descriptions of smoking environment and subjectively perceived effects, as these were reported by the individual subjects. In all, 578 different context accounts of smoking environment were counted by the scorer, with 527 described effects of marihuana smoking. The reason that the number of effects is not identical to the number of smoking contexts is that sometimes two effects were named for a single environmental setting, and sometimes settings were named but no accompanying effects described. The scorer kept an individual user's tally for effects named and environments cited.

The underlying hypothesis for this process of enumeration was that if the subjects named smoking effects and contexts according to their customary smoking habits, then the user typology, previously defined in non-quantitative terms, could be tested by that enumeration. The cross-tabulation format was conceived to facilitate the formulation of a relationship between user type and smoking environment, user type and effects obtained, and smoking environments and effects obtained.

In the analysis, smoking environment has been defined as the place where the user felt the effects described, or where he actually smoked the marihuana. Most often, the two were coterminous. However, users sometimes smoke in preparation for an activity in a place where it would be too risky to smoke; to eliminate confusion, we have scored this as equal to an effect felt in the place where the marihuana is actually smoked.

Preparatory smoking is a normal procedure for some of our users. One stable smoker, for example, mentions his preparation for work:

At times, I haven't gotten stoned, and I feel a bit donkey-headed, and maybe I have to assemble a control box like that one there, or maybe with 24 circuit breakers. Well, each breaker carries a line, and there's a diagram with instructions to assemble the box, and I feel donkey-headed and I can't do it. Then, I leave it and don't assemble it. The next day, I come to work well-toasted . . . and shortly afterwards the box is assembled.

This smoker maintains that preparatory smoking makes him a more effective and willing worker.

Another user explains preparatory smoking as follows:

When I'm going to talk to the mayor or some official, first I smoke and get stoned, and then I go talk. The same with a lawyer. I like to smoke before talking, because then, with my batteries in, I'm "pure life." I spend day and night smoking weed.

The above texts were scored for two smoking environments and one effect each. The first example was scored for "home alone" and "work alone" environments and the "work better" effect. The second was scored for "home alone" and "street

alone" environments and the "improves performance" effect (cf. Table 8).

Stable smokers like the ones quoted above usually have a private place where they do their preparatory smoking undisturbed. Others not so fortunate seclude themselves and smoke all of the material they have in order not to risk being caught in possession. This kind of smoking is not in preparation for any specific activity, but rather for street wandering, bar-hopping, or dancing. One young user explains his preparatory smoking thus:

Most of the time you could say (that I smoke) accompanied, because alone it's difficult. I buy (material). I do . . . and find an empty field, and I smoke, since I don't like to carry that stuff around. So what I do is, I go to a place, and I smoke it right there, and I come out of there simply with what I've got in my head.

Carrying marihuana in one's head (la llevo en la jupa) is a use style which appears in most users' accounts. It is safe, and, except for a very perceptive observer, undetectible. Preparatory smoking is a way for the marihuana smoker to enjoy the effects of the drug in any context he wishes.

In doing our analysis of smoking set, certain kinds of similar environments were combined into a single category, especially when they were reported infrequently. For example, smoking in school was combined with smoking alone in a workshop, because smoking in school was reported seldom, and the nature of the smoking environments in both cases was similar. In both, one is forced to hide one's smoking from supervisory authority, and is required to function in the same manner as non-smokers.

Once basic smoking environments were identified, they were tabulated with citation instances in the life history materials and marihuana interviews. When a new environment was found during the sifting of the transcribed interviews, it was either included in a separate category or combined with one of the existing categories. Bar and dance-hall were kept separate because bars are less open smoking environments than dance-halls. Prison, as a smoking environment, is so unique that it was included in spite of the few instances in which it was cited by our sample.

To give an adequate idea of the scope and nuance of these smoking contexts, each included in the final tables deserves a brief description. They will be listed in order from "safest" and "lowest risk" to "most open" and "highest risk."

Home alone. The smokers in our sample cited this smoking environment more than any other. Of the 578 enumerated smoking environments, 128, or 22.1 per cent were in the "home alone" category. All references to smoking alone in one's own or one's family's home were scored for this category.

Workshop (school) alone. This was another relatively closed environment, cited in 11.9 per cent of the cases. The "workshop alone" category was scored when the user described an instance of smoking by himself while on the job or in school.

Workshop with group. This category was scored when the user mentioned a smoking environment in which he and his working companions smoked together while on the job. Six and

one tenth per cent of cited environments were coded in this fashion.

Home with group. This environment could be either in the subject's own home or in the homes of his friends, but it had to connote smoking with other users. This category accounted for 7.1 per cent of all cited environments.

Vehicle. Since all of these citations were for group smoking, this category was not separated into solitary and social sub-units, as were the "workshop" and "home" environment categories. The "vehicle" context accounts for only 2.4 per cent of all environments cited, but since the "ride" in a car or truck is seen by many users as one of the most pleasant smoking environments, we separate it from the countryside contexts described later.

Countryside alone. One does not have to go very far from the center of San Jose to find small groves of trees or coffee plantations where he can smoke in relative quiet. Users cited this smoking environment in 2.2 per cent of cases.

Street alone. Solitary consumption of marihuana on the streets of San José was cited by users in 8.1 per cent of all named user environments. Variations of this environment include ducking into a theatre restroom to smoke a quick joint, smoking in the restrooms of a downtown cafe, and smoking while walking along a dark side street.

Countryside group. When users described experiences where several of them resorted to the coffee plantations and nearby rivers for peaceful smoking sessions, these experiences

were scored in the "countryside group" category. With 11.4 per cent of the total responses enumerated, it is the fourth most frequently-cited smoking environment mentioned by our user sample.

Street group. The second most-cited smoking environment was the street corner group which smoked marihuana together. Eighteen and three tenths per cent of all smoking environments cited were so categorized. There is always a certain conspiratorial quality in this kind of smoking context; smoking style will vary in accord with the business of a particular corner. Concealment of the yellow marihuana cigarettes is practiced de rigueur, reaching its most sophisticated form on the busiest corners of downtown San Jose.

Bar. This smoking environment may be either open (that is, of easy access to non-smoker and police) or closed. If "open," the bar does not provide any security measures for its customers, so smoking style is much more like street smoking. If "closed" the bar provides at least enough vigilance for the clientele to be able to smoke more or less openly.

Pension-brothel. This environment was difficult to differentiate from "home alone" because several subjects live or have lived in boarding houses similar to those used in the prostitution trade. The "pension-brothel" category refers to ad hoc rental of single rooms for relations with prostitutes and for smoking. Usually the subject describes a situation where he is alone with his girl, or with one or two companions. Four per cent of the reported smoking environments were of this nature.

Dance-hall. The dimly lit, pulsating lower-class dance-hall is an extremely open and therefore risky environment for smoking marihuana. It was cited by our subjects relatively few times (1.5 per cent of all citings). We felt it worthy of some attention as a separate category because of the extreme openness of the environment and the presence of women, neither of which are found in most bar smoking contexts.

Prison. By far the smallest category of smoking environment in number and percentage of responses (0.6 per cent), the prison was included because of its uniqueness. The two kinds of prison cited were the central penitentiary and a local detention center.

When ranked from most frequently to least frequently cited, the 13 smoking environments fall into the following order:

Home alone	22.1%
Street group	18.3%
Workshop alone	11.9%
Countryside group	11.4%
Street alone	8.1%
Home with group	6.1%
Bar	4.3%
Pension-brothel	4.0%
Vehicle	2.4%
Countryside alone	2.2%
Dance hall	1.5%
Prison	0.6%

Cross-tabulation of user type with these smoking environments tests and gives considerable reinforcement to the original typology. Table 8 illustrates in a straightforward manner the

TABLE 8

## User Type and Smoking Environment

User Type	Home Alone	Work Alone	Work in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side in Group	Street in Group	Bar	Penal/in-Brothel	Dance-hall	Prison	Row Total
Stable Smokers (N-23)	9	47	34	34	7	2	14	23	10	11	7	2	0	285
Street Movers (N-16)	32	21	0	7	7	7	25	36	91	14	15	4	3	264
Pastoralist-Escapists (N-2)	2	1	1	0	0	4	8	7	3	0	1	2	0	29
Column Totals	128	69	35	41	14	13	47	66	106	25	23	8	3	578 Grand Total

the proportion of each smoking environment report attributable to each type of smoker.

Smoking context reports were given in slightly different frequencies for each user type. Stable smokers mentioned an average of 12.4 specific smoking contexts, with a range of six to 25. Street movers spoke of anywhere from seven to 34 different smoking contexts with a mean per subject of 16.5. Pastoralist-escapists reported a mean of 14.5 smoking contexts.

In order to adjust for the variation in frequency of smoking environment citations among the three user types, we have standardized all of the scores in Table 9 using a formula where the total for Row A is divided by ten times the number of subjects in Row B or vice versa. Because of the small size of the pastoralist-escapist group (only two), we were forced to "lump" these with the street movers, who, as we mentioned earlier, are similar to the pastoralist-escapists in their use of "open" smoking environments. Thus, the standardization formula for the stable smokers row would read:  $\frac{293}{23 \times 10}$ , which yields a factor of 1.274. The individual scores for each smoking environment were then multiplied by the standardization factor, yielding a standardized score for the stable smoker row. When a similar operation was performed on the street mover-pastoralist escapist row, the scores in each row could then be compared.

Table 9 illustrates the results of this operation. The "home alone" column holds high scores for the stable smokers, while the street movers and pastoralist-escapists show low

TABLE 9

User Type and Smoking Environment Standardized for Statistical Comparison\*

User Type	Standard-ization Factors	Home Alone	Work Alone	Work in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side in Group	Street in Group	Bar	Pensión-Brothel	Dance-hall	Prison	Standard-ized Totals <sup>a</sup>
A) Stable Smokers (N=23)	1.274	119.7	59.9	43.3	43.3	8.9	2.5	17.8	29.3	12.7	14.0	8.9	2.5	0.0	362.8
B) Pastoralist-Escapists (N=18)	1.583	57.0	34.8	1.6	11.1	11.1	17.4	52.3	68.1	152.0	22.2	25.3	9.5	4.8	467.2
P Scores		P < .001	P < .001	P < .001	P < .001	P < .076	P < .001	P < .001	P < .001	P < .0001	P < .053	P < .001	P < .015	P < .036	

\*Standardization factor derived by dividing the other row total by 10 N<sub>i</sub>.

scores for that same column. The two latter user types do at times have access to the home as a smoking environment, but to a much lesser degree and with much less security than do the stable smokers. A test of significance shows this result to be significant at the .001 level.

Other closed environments listed show the same difference among the three user types, with the exception of the "vehicle" column. There, the 14 citations are evenly distributed between stable smokers and street movers. This smoking environment is probably more accessible to the street movers than are the other closed environments. A test of statistical significance yields a p value of less than .075, further supporting this conclusion.

Stable smokers obtain low scores in all open environments, and the difference is marked in all but one column. For the bar environment, they have a fairly high score, which could be the result of chance variation, coupled with the fact that the bar could be in fact a closed environment, depending on the vigilance measures taken by the manager. The low score that is most striking for the stable smokers is that for "street group" environments. Stable smokers are responsible for only 9 per cent of all described "street group" environments, while street movers gave nearly 90 per cent of the descriptions. This difference was found to be statistically significant at the .0001 level, and indicated clearly that the stable smokers tend to avoid these very open and risky smoking environments.

Street movers have strikingly low scores in all of the columns where the stable smokers have high scores. Only in the "work alone" column do they approach each other. Thus we have a clear bi-polar trend. The street mover tends not to smoke marihuana in the closed secure environments that seem to be havens for stable smokers. The exception of the "work alone" environment may be explained by the fact that the street mover can have more access to this kind of smoking environment than to the other environments named so frequently by stable smokers. Such access does not require much social dominance or special experience. Why street movers and pastoralist-escapists have lower scores than do stable smokers for the "work alone" category may be explained by the fact that they work less, change jobs more often, and thus would be less likely to report smoking while on the job. (See Chapter VI.)

High scores appear for street movers and pastoralist-escapists in eight of the 13 smoking context columns which represent the more open environments for smoking marihuana. The "street group," "bar," "pension-brothel," and "prison" smoking contexts show high scores that differentiate street movers and pastoralist-escapists from the stable smokers. Street movers are the only members of the sample who cite smoking experiences in prison, probably reflecting the fact that they have a much more active history of trouble with the authorities than do the other two types of smokers. Smoking on the street in groups is the most often described smoking

environment for the street movers, and it is also the easiest way to be identified both by police and by the rest of the community as a smoker. The following quote from a stable smoker explains why he avoids open smoking environments:

When I am stoned I don't like any kind of argument or trouble; nothing, because I'm a loner. Along with that, I'll tell you something else; I've almost never been in jail. Only once they took me from Downtown San Jose, but that was just because I happened to be there. I had just gotten here. I was in a bar with a friend named "Jughead" and with two boys who "have color" (are known to the police) drinking beer when somebody said "dragnet." They did a "dragnet," but I knew one of the officers in the station house, and I said "Hey, don't you see who they're taking in? You know that I'm a worker; I'm no thief; I'm no bum." And he said "Don't worry. We'll have you out of there fast." And so it was. They got me right out of there and that's the way it was. When they came to get me they said ". . . don't ever run around with those boys again, because those two dudes are 'colored'; they're punks, theives, and if you run with hoods like that you'll get the same 'color'."

Such an attitude is common, especially among the stable smokers who hold steady, blue-collar jobs.

Gilberto, a young street mover from our sample has a preferred smoking environment in his streetcorner gang. He is unable to smoke at home, because his mother is militantly anti-marihuana and, if she catches him smoking, is likely to throw him out of the house. Gilberto resorts to the only smoking environment in which he feels he has some control. There is always a tinge of defiance of the authorities in his descriptions of smoking in the street. He observes the conventions of concealment assiduously. When in his element on the street corner, he exudes a confidence and outspokenness

which disappears in the presence of his mother or older brothers.

Other street movers are even more audacious and skilled, choosing smoking environments of which Gilberto would be afraid. They smoke on the street because they have few other places where they can smoke. Filiberto, a young street mover with more experience in street ways, describes how he can bring himself to smoke even with strangers:

Interviewer: Aren't you afraid to smoke with strangers?

Subject: No, what's to scare you? Almost always you smoke with other "burners" and if you don't do it with them, well, you don't smoke. If somebody's not from your crowd, how can you be afraid to smoke with him if he is a "burner"?

Street movers do not seem to be concerned about their identification with other smokers, indeed they seem to be resigned to the risks of such identification.

Another look at Table 8 will reveal that the pastoralist-escapist group had only three cells that hinted at a difference from the street movers. "Country-side alone," "street alone," and oddly enough "dance hall" contexts were named in a relatively high frequency by the pastoralist-escapist. "Country-side group" and "street alone" have by far the highest number of citations.

Generally, pastoralist-escapists show a tendency not to mention the closed smoking environments in which stable smokers use marihuana, while eschewing the risky open environments frequented by the street movers. The single exception is their frequent mention of, and therefore high positive score for,

the "dance hall" category. The following excerpt from one pastoralist-escapist's interview illustrates the dance hall's attraction for this otherwise reclusive variety of Costa Rican marihuana user:

Interviewer: Where do you dance?

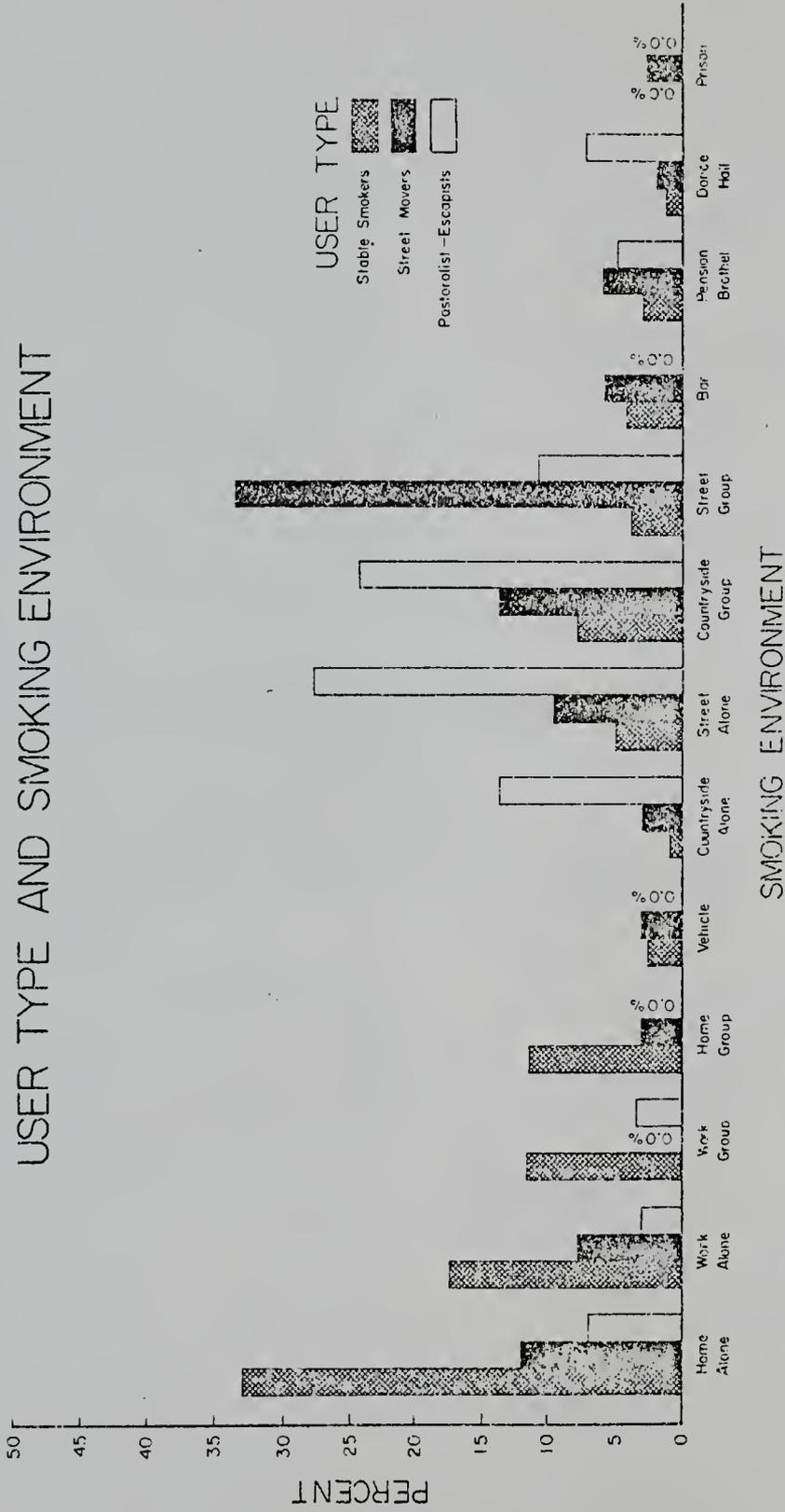
Subject: The Broken Mug is where I generally hang out. (name several working-class and low-life dance halls) . . . and, shoot, I don't even go outside. I get the urge to keep dancing, and I'm blasted and fantastic! I'm a dancing fiend . . . . I really like the atmosphere.

Pastoralist-escapists do not smoke in most of the closed smoking environments. For some reason, the most risky of the open smoking environments do not attract them either, with the exception of dance halls, where they seek female companionship and escape in music and dance. This leaves them solitary street smoking and the countryside as viable alternatives.

Paco, the older of the two pastoralist-escapists included in the sample, once visited our office after hours, and asked if it would be all right to smoke there. When asked why he did not want to smoke in the street, he replied that he did not wish for anyone to be able to identify him as a marihuana smoker, or, as he put it, "I don't want to be painted that way." ("No quiero andar con pinta.") We asked Paco if he would smoke in the house if his in-laws, with whom he lived, were not there. He replied that he knew smokers who smoked with their families present, but that they were "A bunch of mud-faces who respect neither their ladies nor their pups." ("Son un montón de carebarros que no respetan ni a sus doñas")

FIGURE C

USER TYPE AND SMOKING ENVIRONMENT



SMOKING ENVIRONMENT

ni a sus cachorros.") This kind of attitude is what separates the pastoralist-escapists from the other kinds of users.

Figure C contrasts the smoking environment count proportions for the three smoker types. During the interview on marihuana use, stable smokers spent most of their time talking about closed smoking environments, while the street movers concentrated much more on the open environment. Pastoralist-escapists showed a marked preference for open, but relatively low-risk environments, with countryside environments accounting for nearly 40 per cent of all contexts cited.

This does not mean that these percentages represent the actual smoking time that the three types of users spend in each respective smoking environment. It does suggest trends, however, that reinforce the validity of the basic typology. Pastoralist-escapists are not totally incapable of smoking on the street or in other high-risk situations. Street movers occasionally get to smoke in their own homes or the homes of others. Stable smokers may occasionally have smoked marihuana in street groups. But each user types has certain modal tendencies in selecting his smoking environment.

The answers to several specific questions in marihuana use interviews reinforce this interpretation. In answer to the question, "Under what social circumstances do you smoke?" the subjects reponded in the following manner:

(12.2%)	<u>5</u>	Does not smoke in social circumstances.
(58.5%)	<u>24</u>	Smokes in low-risk circumstances.
(29.3%)	<u>12</u>	Smokes in general social circumstances. (Parties, bars, in the street, etc.)

This might suggest that the pure street movers are slightly less numerous than indicated by the previous analysis. However, a check of individual score sheets, taking into consideration the borderline cases between stable smokers and pastoralist-escapists revealed no disagreement between these figures and the previous analysis. Seventy and seven tenths per cent of the users indicated some uneasiness in smoking by limiting it to the lowest-risk environments available. Figures contained in the first eight environment columns listed in Table 8, represent 71.4 per cent of the total. Since these eight are the lowest risk smoking environments listed, their per cent of the total environment citations would also seem to offer strong reinforcement for the point made above.

Practically all of the sample said that they at times meet with friends for the specific purpose of smoking marihuana; only five of the 41 users said that they did not. When asked with whom they smoked most of the time, the sample of users responded thus:

(9.8%)	<u>  4  </u>	with relatives
(48.8%)	<u> 20 </u>	with friends
(19.5%)	<u>  8 </u>	with work companions
(21.9%)	<u>  9 </u>	alone

This datum seems reasonable in light of Table 8 since all smokers at times choose solitary marihuana-smoking contexts. Smoking alone is the easiest way to reduce the risk of discovery. Most users indicate that they care about their smoking environment enough to often seek low-risk environments;

the 44.3 per cent overall total for solitary contexts is thus not surprising. Yet, the fact that 55.7 per cent of all contexts mentioned were social where other smokers were included indicates that, in spite of risks, social contexts are, when all is said and done, the most preferred.

Nearly 90 per cent of all smokers said that they had smoked either while on the job, or immediately before, so as to be under the influence of marihuana during their work. This leads to the expectation that the percentage of work-context smoking environment descriptions in the marihuana use interview material would be much higher than it is in fact. If everyone smokes at work, then why do they not talk about it as much as they do about home or other recreational contexts? It may be that the subjects, in attempting to give the most exciting stories possible about their marihuana experiences, thought the work contexts too ordinary and humdrum to be worthy of much attention. Effects on work performance, to be discussed later, will clarify part of this discrepancy.

The majority of marihuana use appears to be reclusive and timid, not defiant in nature. At most, 39 per cent of our sample may be identified as flaunters of Costa Rica's societal and legal conventions. For the most part, users are cautious about people and places around which they smoke. The majority of users take basic precautions to prevent discovery by the authorities or by hostile relatives. Both stable smokers and pastoralist-escapists are characterized by choosing low-risk smoking situations.

### Subjective Effects of Marihuana Use

The following analysis points out the relationship between smoking environment and subjective effects. Cross-tabulation techniques will be used to couch these relationships in the quantitative data derived from the life history materials elicited from each user in the matched-pair sample.

The immediate effects of marihuana smoking would seem to depend as much on user set and expectation as on sheer physiological response. Subject and observer reports yield 68 distinguishable effects for which Cannabis was assumed to be the cause. Although subjective in nature, the large body of data from which they were culled would suggest that they strongly represent the effects of marihuana use in the study population.

From the interview and participant observation materials, we have been able to extract 527 separate descriptions of marihuana effects. All but eleven of these could be easily clustered, and are cross-tabulated with smoking environment in Table 10. Each deserves a brief description, including criteria for scoring.

1. Bad for eyes. This effect was cited relatively few times, and included blurred or distorted vision, irritation, some combination of the two, or eye redness.
2. Good for asthma. Subjects naming this effect either suffered from asthma themselves or had friends or relatives who used the drug to relieve asthma symptoms.

3. Dry mouth, rough throat. Although one of the "universal physiological effects," it is mentioned relatively few times in the interview materials. All subjects in our experience regularly suffer from dry mouths and red eyes, yet in our interviews they seem not to give these effects much importance.
4. Nerves (+ and -). Subjects attributed both a calming effect and a nervousness effect to marihuana use. When users attributed greater tranquillity to marihuana use, this was scored as +. Minus was scored when subjects said that they had "nerves"<sup>3</sup> as a result of smoking.
5. Sweat, cough. Although these effects could also be called "universal," they did not receive much attention from the users either. Because they appear together in all of the interview materials, they have been combined in the coding categories.
6. Relieves aches and pains. Users mentioned this effect only twice, and both times it was associated with working situations. The back and legs were the areas relieved.
7. Heat. This effect involved a sensation of heat coursing through the entire body, but was not necessarily connected with rapid heart rate. It was described simply as "heat in the entire body."
8. Bad for lungs. Two users reported that heavy marihuana use damaged the lungs. Since only two mentioned this effect, it must be of relatively little importance to the users.
9. Muerte blanca, "white death." In the life history interview materials this was the fourth most frequently-cited effect. In most Cannabis literature this is called "panic reaction." It represents 7.2 per cent of all effect descriptions. It will be described in greater detail later in the report.

10. General "blahs." A negative reaction to smoking large quantities of marihuana, this effect is rare. The users who experienced it claimed not to feel sick, just mildly sub-normal.
11. Marihuana hangover. Also relatively rare, the marihuana hangover occurs on the morning after a night of very heavy indulgence. The symptoms are much the same as those of an alcohol hangover, with dry mouth, headache, and queasy stomach.
12. Sleep (+ and -). Most users said that marihuana helped them sleep more soundly. Some went as far as to claim that they could not get to sleep unless they smoked at least one cigarette before bedtime. Only two claimed that marihuana had a deleterious effect on their sleep.
13. Sex (+ and -). The third most-cited effect was sexual performance and enjoyment. This accounted for 7.8 per cent of all effects described in the interview materials. A single individual described one instance of marihuana's negatively affecting sexual intercourse. The perceived effect of the drug on sex will be described in more detail.
14. Food appetite and enjoyment (+, -, and 0). In addition to having positive and negative effects, in two instances users claimed that marihuana smoking had no effect at all on appetite or food enjoyment (0). Since they represent more than 10 per cent of all described effects, those involving appetite will also be described in greater detail.
15. Work performance (+ and -). The single most described effect extracted from the interview materials was that on work performance. Seventeen reports described a negative effect of marihuana smoking on work performance, while 38 showed a positive one. The

negative effects were limited to problems with short-term memory and concentration, while the positive ones had to do with endurance, work enjoyment, and care or concentration on job tasks. A section will later be devoted to the relationship between work performance and marihuana smoking.

16. General performance (+ and -). This category of effects deals with performance situations outside of institutional settings. Such contexts include street transactions, card games, police evasion, and sports activities, especially soccer games. The positive descriptions are only slightly more numerous than the negative ones.

17. Sing better. Another rare effect, this was claimed only by non-professional singers in the sample, and the singing was always done in the home.

18. Time on the job goes faster. In contrast to the usual claims by North American users<sup>4</sup> that time slows down while one is smoking marihuana, Costa Rican users who smoke on the job claim that work time goes faster if they are intoxicated with marihuana. Although this effect was reported only rarely, its contrast with the claims of other smoking traditions makes it of special interest.

19. Uncontrollable mirth. The participant observation materials contained references to this effect in far greater frequency than do the interview materials. This would indicate that laughter and gaiety were observed by the field team fairly often, but that the users did not consider them very important. Goode (1971) shows this effect to be quite important among North American users.

20. Passive audience. We scored this effect when the user described a marihuana-intoxicated state in which

he felt more like watching than doing. Television and movies were the usual objects of interest, but sometimes users mentioned watching other people dance in a bar, or watching a sporting event, or simply watching people pass by on the street.

21. Anti-boredom. Fewer than 1 per cent of the effects described in the interview materials were of this nature. Smokers reporting this effect usually described their "high" as livening up their approach to an otherwise unstimulating social environment.

22. Everything rosier. One of the more frequently-cited effects (5.2 per cent of all described effects), this one refers to a general feeling of well-being in everyday situations. Surroundings which would otherwise be very unpleasant become, after smoking marihuana, at least bearable. Once the "high" is achieved, existence in general is less sad and burdensome, and prospects are more hopeful.

23. Alcohol comparison (= and -). None of the marihuana smokers in our sample said that alcohol was better than marihuana, but a few said that it was about the same. Most agreed the marihuana intoxication was better than alcohol intoxication. They based this judgment on the degree of self-control maintained by the marihuana user as compared to the drunk, and on the absence of physical dependency on the part of the marihuana user which they contrasted with the chronic alcoholic's constant desperation for a drink. Since users often had considerable experience with alcohol use on a very heavy levels, they had a strong experiential basis for making such comparisons.

24. Behavioral compensation. This smoking effect was scored when users described social context in which they had to conceal the fact that they were under the

influence of marihuana. According to these users, an experienced smoker of marihuana can usually disguise his intoxication well enough to keep those around him (except perhaps other experienced smokers) from discovering that he has been smoking. In the strictest sense, this is not an effect, but rather a masking of effect. Still behavioral compensation helps to define the extent to which the user feels he has control over his actions, and thus may help delineate the perceived limits to self-control as they relate to marihuana use.

25. Fright (susto). This refers to a state similar to a mild form of shock, brought on by a sudden frightening experience. It is rare, but usually it has a direct connection with the appearance of narcotics police where the user is smoking. In one case, it was related to the user's nearly having a traffic accident. This effect was scored only when it was apparent that the user felt his reaction to fright to be exaggerated because he was under the influence of marihuana at the time of the frightening experience.

26. Active participation. This category covers many recreational contexts; it is the opposite of the passive audience category. Effects described in the interview materials where the smoker felt that marihuana was the cause for exuberant and unselfconscious physical activities were scored into this category. Plunging with abandon into a game of soccer or swimming or dancing tirelessly were the most frequently cited instances of this effect.

27. Fight. One of the rarer effects mentioned in the interviews was fighting. The two users who described this effect claimed that the drug makes them "touchy" and easy to offend. Both users have bellicose life histories.

28. Act idiotic. This is the opposite of the behavioral compensation category, and it should be noted that this effect is mentioned only twice in 516 effect descriptions. The two individuals reporting this effect claimed to do stupid (but not necessarily harmful) things while under the influence of the drug.

29. You isolate yourself socially. In four instances, users described a reaction to marihuana smoking in which they did not pay attention to the people around them. Rather than converse, the users experiencing this effect remained wrapped in their own thought, not bothering to make conversation or even to acknowledge the presence of others around them.

30. You become socially more aggressive. An equal number of instances were described by users in which they became more outgoing as a result of marihuana smoking. Using marihuana to give courage to start conversations with strangers was the form in which the users described this effect.

31. Helps to face the day. This effect was recorded only when users indicated that their normal day was not properly started unless they smoked marihuana at first rising. Such an effect is similar to the everything rosier category, but the user shows special need for the drug in order to cope with daily problems. It should be noted that the users who cited this effect were in extremely difficult situations when they experienced this effect. One was, in fact, in prison.

32. Floating sensation. Very few users mention the floating sensation in their descriptions of marihuana's effects. This reflects the general impression of the field team that users in our sample do not have a particularly reverent or awe-struck perception of marihuana and its effects. When the floating sensation was

cited, the users claimed that their heads felt strange, and that their steps felt light.

33. Music sounds better. This is not a universally perceived effect, but it is widespread among our sample group. Users claimed to enjoy music more after smoking marihuana; they felt that it helped them to listen more acutely, and to appreciate subtleties which they could not hear when not under the influence of Cannabis.

34. Nothing. Seven instances were described where the user smoked marihuana, but felt no effect of any kind. Five of these occurred in the street group context.

35. Perception altered. Very few of the effects described were scored into this category. In order to be so scored, the user had to describe a perceptual distortion of either vision or hearing. Changes in shapes and sizes, and unusual loudness of noises were the usual forms of these effect descriptions.

36. Conversation (+ and -). Usually the smokers said that their conversation improved under the influence of marihuana. They considered their manner of speech to be more fluid and confident while stoned. They also claimed that they were able to handle complex conversational topics with greater ease while intoxicated. Those who thought that marihuana hurt the quality of their conversation mentioned problems of remembering the exact topics of conversations and their tendency, when intoxicated, to speak for long periods on trivial matters, and thereby to waste time.

37. Thoughts more profound. Many of the smokers in our sample considered marihuana to be an aid to concentration. When they mentioned improved mental function as a subjective effect of marihuana, we

TABLE 10

Cross-tabulation of Effects and Smoking Environments

Effects	Home Alone	Workshop Alone	Workshop in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side in Group	Street in Group	Bar	Pensión-Brothel	Dance-hall	Prison	Row Totals
Bad for eyes	3	1					3		1					8
Good for asthma	4													4
Dry mouth, rough throat	7	1							1	1				11
Nerves (+ calm - aggravate)	3	3	1				1	1	2					13
Sweat, cough	6	2	1		1			1	3					6
Relieve aches & pains		1	1		1				1		1			13
Heat			1											2
Bad for lungs	2						2		1					5
"Muerte blanca"	4													4
General "blanks"	2	1	1	3	3	1	2	2	14	4	2			37
Marihuana hangover														2
Sleep (+ helps - hinders)	12						1		6					18
Sex (+ helps - hinders)	21						1		2					23
Food appetite (+ inc. - decrease 0 neutral)	11	3	1				1	1	6		11			31
Work (+ better - worse)	5	2					8	1	16		2			42
General performance (+ - worse)	1	1					1		1					10
Sing better	2	39	2		1		2	1	3			2		45
Time in job goes faster		6	4											10
Mirth		4	2		1		2	1	3			2		15
Passive audience	4	2	1	1										13
Anti-boredom	2						1	3	7					13
Everything rosier	9		1			1	6	1	3	2			1	27
Alcohol (+ better - equal)	8	2					2	3	7	1				27
			3					1	1					13
														4

TABLE 10 (continued)

Effects	Home Alone	Workshop Alone	Workshop in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side in Group	Street in Group	Bar	Pensión-Brothel	Dance-hall	Prison	Row Totals
Behavioral compensation	1	2		1			3			1				8
Susto (fright)	2						1	2						3
Active participation							2	4	4			3		15
Fight	1		1						1	2				3
You act idiotic														2
You isolate yourself socially	1	1	1	1										4
Socially more aggressive							2		2					4
Helps face the day	3												1	4
Floating sensation									1	1				4
Nothing														3
Music better	4		1	1				1	1	1				7
Perception altered		1		1		1	1	1	3	1		1		13
Conversation (+ better - worse)	2		3	5			1	1	2					18
Thoughts more profound	10	7	3	1			3	2	2					29
One becomes creative	4					1	1	2	1		1			6
Hurts memory	1	4	1				1		1					7
Column Totals	147	90	31	13	8	4		30	107	13	18	7	1	516
														Grand Total

TABLE 11

Simplified Tabulation of Effects and smoking Environments

Effect Types	Home Alone	Work-shop Alone	Workshop in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side Group	Street in Group	Bar	Pensión-Brothel	Dance-Hall	Prison	Row Totals
Physiological	31	8	4	0	2	0	6	2	9	1	1	0	0	64
Bad trip	6	1	1	3	3	1	2	2	20	4	2	0	0	45
Appetites	53	5	1	0	0	0	11	1	27	0	13	0	0	111
Work & Performance	5	57	10	0	2	0	4	1	7	0	1	2	0	89
Behavior & Sensation	31	7	7	2	1	1	17	15	26	7	0	4	1	119
Cognitive & Perception	21	12	8	8	0	2	7	9	18	1	1	1	0	88
Column Totals	147	90	31	13	8	4	47	30	107	13	18	7	1	516

scored it in this category. Some users said that they used marihuana to help them to concentrate on a single problem. Others said that they derived more reading enjoyment when stoned.

38. One becomes creative. A few of our users, despite their working class status, claim that marihuana causes them to become more creative, either in writing or in painting. They say that some of their leisure smoking time is occupied with designing a house, or writing an autobiography or painting a picture.

39. Bad for memory. Some marihuana users mention the deleterious effect that marihuana has on memory, both short-term and long-term. This effect is cited in a workshop setting, and usually involves losing count in some repetitive task. User's perceptions of long-term memory problems are less specific and well defined.

These 39 effect categories include practically all sorts of smoking experiences given more than once, with the exception of those instances when the effect was attributed to the mixing of alcohol with marihuana. Such mixing will be treated in greater detail later. Nine effects were mentioned only once, and have been left out in order to make the analysis less cumbersome.

As it appears in Table 10 the relationship between smoking environment and effects could seem to be very obscure. In an effort to simplify the readability of the cross-tabulation and to clarify the relationship between environment and effect, the 39 major effects have been grouped into categories in Table 11. Effects 1-8 were grouped into the physical

TABLE 12

Cross-Tabulation of Environments and Effect Types  
Standardized for Comparison Within Columns

Effect Types	Home Alone	Workshop Alone	Workshop in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side Group	Street in Group	Bar	Pension-Brothel	Dance-Hall	Prison	Standard-ization Factor**
Physiological	72.2*	18.6	9.3	0	4.7	0	14.0	4.7	20.9	2.3	2.3	0	0	2.33
Bad Trip	19.9	3.3	3.3	9.9	9.9	3.3	6.6	6.6	66.2	13.2	6.6	0	0	5.31
Appetites	71.1	6.7	1.3	0	0	0	14.8	1.3	36.2	0	17.6	0	0	1.34
Work & Performance	8.4	95.6	16.7	0	3.3	0	6.7	1.7	11.7	0	1.7	3.3	0	1.07
Behavior & Sensation	38.8	8.8	8.8	2.5	1.3	1.3	21.3	18.8	32.5	8.8	0	5.0	1.3	1.25
Cognitive & Perception	35.6	20.3	13.5	13.5	0	3.4	11.9	15.2	30.5	1.7	1.7	1.7	0	1.69

\*Circled scores are markedly higher for a given environment than scores of other effects.

\*\*Obtained by dividing the multiple of all other row totals by  $2 \times 10^8$ .

effects category, and included all effects which users perceived as in some way changing their bodies. Effects 9-11 were placed in the "bad trip" category, since they refer to the three kinds of bad experiences connected with use of the drug. Effects 12-14 comprise the influence described by consumers on the appetites. Effects 15-18 are related to work and performance. Effects 19-31 include all effects which involve a change in behavior or general state of mind. Effects 32-39 cover marihuana-induced changes in specific senses and in cognitive processes.

In Table 11 the cells contain the number of cited effects as they correspond with each environment type.

In Table 12 a standardization process similar to that used in Table 9 was employed to make the scores in each cell comparable from one effect to another. To derive the standardization factor for a given row, the multiple of all other rows was divided by  $2 \times 10^8$ . For example, to derive the standardization factor for the physiological effects row,  $45 \times 111 \times 89 \times 119 \times 8$  was divided by  $2 \times 10^8$ , which yielded a factor of 2.33. The number  $2 \times 10^8$  was used in order to make the standardization factor easy to use, because the multiplication of row totals yield numbers in the billions which are entirely too unwieldy for tabular purposes. Each cell in the physiological effects row was then multiplied by this factor to produce a standardized score. When a similar operation was performed for each effects type, the scores in each column could be compared with each other.

Looking at the first column in Table 12, we see that the physiological and appetites effects occur in relatively high frequency in the "home alone" smoking environment. In contrast, the work and performance effects occur in a markedly high frequency in the "workshop alone" environment.

The general pattern, then, is that users tend to match subjective effects with elements that are characteristic of the environments in which they smoke. In other words, the marihuana smoker builds his effect experience on what he finds at hand. We find, for example, that "physiological" effects are mentioned for solitary or closed smoking environments more than for open or social environments. The user, when alone, takes what is within reach, in this case his own body functions, and associates that with the effect experienced from the smoking of marihuana.

Table 13 contains standardized scores which make comparisons between rows and columns possible. The circled scores in this table are those which are notably high. The symbols placed below the circled scores indicate whether they are high in comparison to the other scores in that row or the other scores in that column, or both. We can see that the effect types that occur in high frequency relative to their respective column in the home alone environment are also high relative to their respective rows. This means that physiological and appetites effects occur more often in the home alone environment than the other kinds of effects, and that they make up a high percentage of all of the physiological

TABLE 13

Cross-tabulation of Environments and Effect Types Standardized  
for Both Columnar and Row Comparisons

Effect Types	Home Alone	Workshop Alone	Workshop in Group	Home in Group	Vehicle	Country-side Alone	Street Alone	Country-side Group	Street in Group	Bar	Pensión-Brothel	Dance-hall	Prison
Physiological	103.5 <sup>+</sup>	43.6	63.2	0	123.9 <sup>-</sup>	0	62.8	33.0	41.2	37.3	26.9	0	0
Bad Trip	28.5	7.7	22.4	160.5 <sup>+</sup>	260.9 <sup>+</sup>	173.9 <sup>+</sup>	29.6	46.4	130.4 <sup>+</sup>	214.0 <sup>+</sup>	77.3	0	0
Appetites	102.0 <sup>+</sup>	15.7	8.8	0	0	0	66.4	9.1	71.3	0	203.8 <sup>+</sup>	0	0
Work & Performance	12.0	223.5 <sup>+</sup>	113.6 <sup>+</sup>	0	87.0	0	30.1	11.9	23.1	0	19.9	99.4	0
Behavior & Sensation	55.6	20.6	59.8	40.5	34.3	68.5	95.5 <sup>+</sup>	132.1 <sup>+</sup>	64.0	142.7 <sup>+</sup>	0	150.6 <sup>+</sup>	274.1 <sup>+</sup>
Cognitive & Perception	51.1	47.6	91.8	218.9 <sup>+</sup>	0	179.2 <sup>+</sup>	53.4	106.8 <sup>+</sup>	60.1	27.6	19.9	51.2	0

**Legend** ○ means that the score is notably high.

- means that the score is notably high relative to other scores in the same row.

↑ means that the score is notably high relative to other scores in the same column.

+ means that the score is notably high relative to other row and column scores.

and appetites effects for all environments. The same may be said for the work and performance effects group and its correlation with the "workshop alone" environment.

The "bad trip" group of marihuana smoking effects shows very marked high frequency in the most open and risky smoking contexts (cf. circled scores in Table 13). The only closed environment which shows a markedly high standardized score for this effect group is the "home group" smoking environment, and this is relative only to the other effects types in that environment, rather than to other environments. Since the "home in group" column is one of the smaller columns, this may be due in part to the presence of three zeroes in the home in group column. Otherwise, "open" or "risky" environments show a high frequency of "white death."

Given the fact that more than 80 per cent of bad trip descriptions are muerte blanca, or "white death," we may hypothesize that such a reaction may derive, in large part, from the insecurity and fear associated with these open smoking environments. White death is the Costa Rican equivalent of what is known in the United States as "panic reaction" (cf. Tart 1971). The Costa Rican term is colorful and very hyperbolic, since no user lives in terror of white death. Most users treat it as a completely routine and ordinary phenomenon, curable with a cold soft drink or a glass of sugar water.

Marihuana users in our sample have had widely varying experiences with white death during their long smoking

careers. Fifteen individuals, or 36.6 per cent of the matched pair sample, claim never to have experienced this unpleasant effect. The rest had white death four times or less in their entire smoking careers. Only one user claims to have experienced white death more than eight times.

At the onset of white death the user begins to feel dizzy and cold, breaking into cold sweats, and feeling the need to defecate and urinate. One subject describes the symptoms as follows:

You kind of feel faint. Maybe you're sitting and you feel dizzy, dizzy, dizzy, and you see some things backwards and everything begins to spin, and you often begin to vomit, and other times, well almost always you feel like vomiting. But many times you feel faint and you play strongman and you sit for a while and it passes.

Interviewer: How long does it last?

Subject: Well, now, it varies; it's quick. It could last at most an hour, maybe a half-hour-- at most an hour.

Interviewer: How does one feel? Is there pain?

Subject: No, no pain, but you're out of control, like everything's spinning like dizzy. Everything spins a lot, you know, spinning, spinning, spinning. It gets you like that.

There is no holy dread reflected in these observations, simply distaste for the experience. The subject continues to describe an onset situation:

Once I was lame in this foot, and I went to my brother-in-law's who smokes. . . . We bought a roll and we smoked it between the two of us, twelve each, but because I was hurting in this foot, right (I had the foot infected) I was lame and surely all that didn't agree with me. . . . There I went, walking or hobbling to the bus stop. I was all right up to there, but when my foot heated up, and when I got to the bus stop, I had to grab a post; I saw everything spinning, and you begin to sweat icy streams, and you stay that way, soaked and see everything spinning, dizzy. Then that passes, and you stay

white, white, white.

Interviewer: White death.

Subject: Laughs.

Finally he offers his own theory on the causes of that onset:

. . . Well, the white death many times . . . happens to you because you're weak. There's no need to smoke 50, or even two or three. If you're weak somehow, it can disagree with you . . . although you may not feel it, or even realize, but many times you have a weakness in the body and then it (marihuana) disagrees with you.

Although the above description is characteristic, there is great disagreement among the users in our sample about the cause of white death. Some believe that smoking marihuana in excess will cause it. Others find that smoking after alcohol consumption, a phenomenon to be discussed later in greater detail, causes them to suffer white death. Most users think that some physical or mental weakness, when combined with marihuana smoking, can cause it. "You must get your mind right before smoking," said one informant of long experience. "If you're depressed or sick, the white death grabs you."

The observed appearance of a user who is going through white death is very similar to that of a victim of mild shock. The subject's face becomes pale, and he usually rests his head in his hands. If he is given a soft drink at this point, he will be back to normal in a few minutes. If not, he may vomit or rush off to relieve himself. His companions joke about his weakness and lack of resistance while they go about the mundane business of securing a soft drink or other curing preparation. If none of these are found, the white

death victim is escorted home to where he can lie down and "sleep it off." This is very different from the North American pattern of elaborate supportive companionship, which is intended to help the panic reaction victim to cope with his reaction psychologically. Although Costa Rican users think that the cause of white death may be either psychological or physiological, the cure they offer is physiological and very direct.

The reported distribution of the effects which we have called "Appetites," encompassing food, sex, and sleep, seems to reinforce the idea that whatever is at hand commands the most attention among users. Table 12 and 13 show that the "home alone" and the "pension-brothel" contexts have strong correlation with appetite-related effects. At home, users have direct access to resources that may be used to satisfy the need for either food, sex, or sleep. Some go to pension-brothels for food or sex. Others, if this interpretation is valid, would seem to search for appetite satisfaction in the context of "countryside groups" and "street groups."

Users generally claim that both their sex appetites and their food appetites are increased as a result of smoking marihuana. Twenty-nine, or 70.7 per cent of the sample responded that marihuana increased food appetite, while only nine said that it had no effect, and two that it had a negative effect. Among those who perceive an increase of appetite, Gilberto, a young street-mover mentioned earlier, says that his mother can tell when he has been smoking by the quantity of food he eats at home:

. . . and I arrive home stoned, and she (subject's mother) keeps looking at my face, but she doesn't say anything.

Interviewer: Do you think that she knows when you're stoned?

Subject: It seems to me that she must suspect it, especially when I come home stoned to eat and I get there, and she says, "You're going to eat?" and sure, I eat heartily, and she says "hmmmmmm."

Stable smokers also note increased appetite for food when they are under the influence of marihuana. One stable smoker claims that he is actually gaining weight as a consequence of his increased consumption of marihuana.

One pastoralist-escapist, however, claims that he prefers not to smoke before, but only after eating, since he considers the high more important than his eating pleasure. He believes that eating after smoking reduces the effect of the marihuana. He expresses this belief in the following excerpt:

Interviewer: You like smoking after eating?

Subject: Right, first eating. If it's time for me to feed, first the feed and then the weed. If I get stoned and then feed, sure I feed sharp, like a guillotine, but I de-stone myself, understand? It takes away the weed. It's like getting stoned and downing a soft drink or a beer or something like that. Who knows what causes that . . . . On the other hand, if I feed and afterwards I get stoned, you should see what a hit! I'm stoned just fine.

This subject's avoidance of food in order to maximize the psychotropic effect of the drug testifies to the high value he places on sensation effects of marihuana smoking.

Only among the very heaviest users do we find that there is no perceived effect on food appetite. Often these individuals began their smoking careers with increased appetite

effects, but later they found that marihuana smoking no longer affected their appetites. Negative effect on appetite is rarely seen among the users even though several have deficient diets. Lalo is one of the two users who report negative effects on appetite as a result of smoking marihuana.

. . . I caught, how should I say it? Like a mania that dried up my hunger. No. How is it? Like indigestion . . . I . . . well, began not to eat except at night . . . I drink coffee and smoke marihuana and I smoke white (tobacco) cigarettes in quantity . . . I drink coffee and smoke marihuana, nothing else. . . . The only thing that bothered me was that I got indigestion at normal eating times during the day. . . . Like today, I haven't eaten anything, only I drank coffee six times.

Lalo's loss of appetite for food is very unusual. His unhappy life situation, both presently and during his childhood, must have had a strong influence on his dietary habits. Even though he attributes his loss of appetite to marihuana smoking, his rather bizarre life experiences seem to have also influenced his eating habits. Since his mother was a prostitute and marihuana vendor during his childhood, Lalo was usually left to his own devices for dietary selection and eating schedule. This resulted in irregular meals of poor quality with sporadic periods of no food at all. As Lalo's mother continued her pattern of neglect, Lalo's eating habits became set in such a way that his present day eating style, with its poor nutritional quality and irregularity, strongly resembles that of his childhood. It comes as no surprise that Lalo now has dietary and digestive problems; it is doubtful that they could be due simply to his marihuana smoking.

Thirty-four users claim that sexual appetite and performance are positively influenced by marihuana. Six claim that marihuana has a neutral effect on sex, and only one says that the effect is negative. Users say that marihuana increases their desire for sexual contact, even if it does not necessarily lead to orgasm. In many of their accounts, they emphasize tactile stimuli. One user claims that he prefers not to have sex when he is intoxicated with marihuana because he tends simply to lie snuggled next to the sexual partner and not do anything.

The most frequently-cited effect of marihuana smoking on sex is increased endurance. Users claim that erections are maintained longer, and that they are easier to obtain while under the influence of the drug. Paco provides a colorful description of the combination of marihuana and sex:

But the best thing is to be mounted on top (in the sex act) because you get a sensation that's so strange and so delicious that really, I think everything trembles, and it's delicious. That stuff's strange because with weed your member thickens, who knows why? You get harder, stiffer when you're stoned, because the chicks that I've had when there's weed, well they say, "What a brute!" On the other hand, when I'm not stoned and I'm doing it, they don't make as much noise, but when I'm stoned, they can't endure it.

The idea that women prefer men to be "high" during sexual contact is very common among users. A stable smoker describes it similarly:

Interviewer: What effect does it have on sex?  
Subject: Well, marihuana gives you more resistance, that is, you last longer, eh! You dilate. Well, I dilate. On the other hand, without it, it's less; with it you last long. Normally, it's not the same.

There are women who like to be with a man like that. There are women who get stoned and they like to be with a man who's stoned so they last longer.

This subject considers sex his favorite activity while under the influence of marihuana.

Although the above accounts are typical of user's assessments of marihuana's effects on sex, a lone user says that excessive use can be deleterious to both sex appetite and performance. He finds erection difficult with heavy doses of the drug:

Interviewer: Would you have more or fewer sexual relations when you've smoked more than you usually do?

Subject: Well, about the same. . . . Actually, when I smoke very much I can't get anything up, because when you're well-toasted . . . you're hopeless (literally, "in the street"). You can't get it up.

This subject smokes with his wife, often attaining very heavy dosage levels. He finds that lighter dosages of marihuana can be stimulating sexually, just as do the other users cited above.

Six users claim that marihuana has a neutral effect on sex. They tend to be heavy users, and most often stable smokers. Tonio, one of these stable smokers, is a case in point:

Interviewer: Do you think marihuana has effects on sex?

Subject: Well, many people say that it does, but I think it's normal.

Interviewer: There aren't changes?

Subject: There aren't changes for me personally.

Interviewer: No more pleasure or anything?

Subject: No.

Whether stoned or sober, Tonio was not very active sexually,

but the user who provided the following quote is extremely active:

Interviewer: What in your opinion are the effects that marihuana has on sex?

Subject: Well, I never paid much attention to any of that. It's the same to me with or without marihuana.

This individual's use is so heavy and so constant that it is difficult to decide whether or not he has an adequate basis for comparison between sexual experience during marihuana intoxication and marihuana-free sexual contact. Nevertheless, his indifference to the drug in combination with sex provides sharp contrast to the testimony of the first two users cited.

Sleep has been included in the appetites category because it is an everyday experience which takes on a special pleasurable sense when combined with the psychotropic effects of marihuana. Being a need almost as undeniable as food, its universality cannot be questioned. In review materials there were 17 citations of effects on sleep. Generally, the users testified that marihuana smoking has a positive effect on sleep, and one even claimed that he has to smoke before going to bed. In the overall sample, a slightly but not significantly higher number of users said that they sleep well and soundly all of the time. Thirty one users claimed not to have any sleep disturbance at all, while nine had occasional sleep disturbance, and one claimed to be an insomniac. Interview materials contain only two citations of negative effects of marihuana on sleep, both of these in connection with occasional

sleep disturbance. Other sleep disruptions among marihuana users occur often in connection with alcohol use.

Generally, the "appetites" effects strongly reinforce the idea that users take advantage of available resources from which to derive individual pleasure. Poor appetite is the most environmentally generalized of the three effects, occurring in both private and social contexts. Opportunities to satisfy these appetites occur in all of these environments.

In contrast, sex is limited to private contexts, as is sleep, and therefore citations of these effects tend to be clustered in the "home alone" and "pension-brothel" smoking environments. Again, users in our sample tend not to use marihuana to prime themselves for intensive pleasure seeking activity, but rather to enhance the sources of stimuli that are most readily accessible.

The "Work and Performance" effects category reinforces this idea still further. In Table 13 we find that the only circled cells for this category are in the "work alone," "work with group" smoking environments. These are both environments in which the user is likely to form opinions based on both objective and subjective observations from his companions as well as from himself. They are environments in which the user must perform some action which is judged for its efficiency or rapidity or aesthetic quality.

Marihuana smokers are slightly less in agreement about the effects of smoking on work performance than they are for effects on sex or food hunger or sleep. Although in Chapter VI

we shall discuss the matter in greater detail, here we can say that users generally consider the effect of marihuana smoking on work and performance to be positive. In response to our question, "Has marihuana ever impeded your working at full capacity?" Only eleven of the 41 users say that at one time or another this has happened. To another question, phrased differently to read, "Has marihuana ever helped you work better?" only nine replied negatively whereas 32 replied positively.

It may seem circular to argue that marihuana smokers mention work-related effects most frequently in connection with work-related environments, but this is necessary in view of existing beliefs about the drug, particularly in Costa Rica. It is commonly believed in Costa Rica that smokers of marihuana are moved by the effects of the drug to go out and commit criminal acts, such as rape, robbery, and assault. We have seen that, far from doing that, Costa Rican users tend to emphasize what they have at hand while under the influence of Cannabis. If a user works, he either smokes on the job, or smokes just before work, and in this way passes his work day more tranquilly.

If this interpretative approach is correct, then it would appear that some crimes may be committed under the influence of marihuana, but that they simply represent the everyday activity of the criminal who happens to smoke marihuana. The criminal is not driven by the drug to commit crime; rather, his marihuana smoking is incidental to it.

The behavior and sensation category or effects includes a large number of effects which were grouped together for analytic purposes. Among others, they include active participation, uncontrollable mirth, behavioral compensation, fighting (rare) and social isolation. These effects have a higher citation frequency for the open smoking environments. Again, this reinforces the idea that users perceive the available resources for enjoyment or entertainment as the most important in a given smoking environment. It is surprising that the "street group" smoking environment does not show strong positive correlations with the category of behavior and sensation scores as do "bar," "countryside group" and "prison" contexts. This may be explained, however, by the wide range of effects included in this category, including some diametrically opposed, such as passive audience and active participation.

To understand the nature of the behavior and sensation effects category, users' descriptions of some of the more frequently-cited effects can be useful. Active participation effects are mentioned 15 times in the user texts, and are aptly illustrated by this stable smoker's account:

. . . In Puntarenas, I got there and got stoned on the beach, and I jumped into the water, and when I finally realized what was happening, I found I was under the pier, swimming like an idiot, . . . Luckily, there was a little boat, a fisherman there and they pulled me out, because if it had been up to me, I would have kept on going.

Swimming with all his might in such a manner is not an unusual example of the exuberance which many users feel for physical activity under the influence of marihuana. Dancing, playing

soccer, and walking in the country are some of the other activities in the same vein mentioned by smokers.

The effect which we have called "everything rosier" was mentioned 27 times in our interview tests. The majority of these citations occurred in connection with the most heavily-cited environments: "Street alone," "home alone," and "street group." This effect is very general, and as a result, does not show any marked pattern of specificity to a limited range of smoking environments. Paco's comments illustrate the euphoria which users often attribute to marihuana smoking:

Interviewer: Why do you think you've kept smoking marihuana so long?

Subject: Well, because I dig it. In every sense, it sends the mind in so many directions, right. You feel more "pure life," as if you'd taken some super nourishment.

Interviewer: Does it help you in some way?

Subject: Only in the sense that I'm inspired. I feel like another person, in another world. Sure, you feel like somebody else, man. Like right now, I'm bored, well, without weed, without anything, noodling it out (referring to the interview situation) but now if I should get hold of a reefer, I get stoned. Now I'm somebody else, understand. Everything is groovier, you get into another wavelength.

The "other world" spoken of here does not imply fantasy, but a change in the tone in which Paco perceives his surroundings.

Uncontrollable mirth, so often described by other user populations especially in the United States, is not cited very frequently by the Costa Rican users in our sample. Only ten citations of uncontrollable laughter were cited among 516 total effect citations, roughly 2 per cent. They all occur in open group smoking situations in the country or in the city

streets. In these situations, the users often tell jokes, and clown with the explicit purpose of provoking laughter. Field observations repeatedly associate uncontrollable mirth with the "street group" and the "countryside group" smoking environments. Costa Rican users do not associate marihuana use strictly with recreational contexts, and we believe that this is the reason why mirth is not cited as frequently by them as by their North American or Western European counterparts.

This and other differences between North American and lower-class Costa Rican marihuana users in the kinds of subjective effects reported implies differences in the values attached to marihuana use. Brecher's (1975) and Rubin and Comitas' (1975) warnings about the influence of cultural factors on marihuana and its effects apply to the analysis of the Costa Rican data. We are obviously dealing with a tradition which is quite different from the patterns of Cannabis use found in North America in the kinds of meaning attached to marihuana smoking by users of the drug. Attempts to test the attributes of amotivational syndrome against Costa Rican patterns of Cannabis use should take value differences into account.

"Passive audience" is an effect cited by some of the users in our sample, although it occurs in a relatively low frequency. Even though North American users often cite this and closely related effects (Goode 1970: 153-155), references to it by our Costa Rican user sample accounted

for only 2.8 per cent of their total number of citations. Again, the more recreational attitude toward marihuana use prevalent among the North American users probably accounts for the difference.

When the users in our sample responded to the question, "What do you like to do best while smoking?" we found that 27 preferred active recreations or work, while only seven named passive recreations and a like number, seven, preferred to be with friends. These figures at first do not seem to match with the data from the effects citation sheet, which show that active participation was cited only once more than was passive audience behavior. This could be because "active recreations" in the coded response sheet includes a broader range of activities than does "active participation." Active recreations include sex, attendance at sporting events,<sup>5</sup> and other matters which, in the tabulation of specific effects, were placed in categories other than active participation. In terms of user preferences, the juxtaposition of active and passive recreations is plain, with an overall tendency to emphasize activeness rather than passiveness in the behavior of smokers under the influence of marihuana.

On 17 occasions in the interview material, marihuana and alcohol were compared. Marihuana was judged superior to alcohol on 13 of these measures, and more or less the same in the remaining four. In no interview did a subject assess marihuana as worse than alcohol. Generally, the tone of the comments was that users feel that they are in greater control

of their faculties and actions when intoxicated with marihuana than when intoxicated with alcohol. One of the younger users puts it this way:

Well, you know that I have several friends in the barrio . . . . (Names friends) . . . with guaro (liquor) they get the urge to raise a fuss, to punch it out with somebody. Even I, when I down a few drinks, and I'm with them, I also get the urge . . . . Well, why should I let somebody hit them? On the other hand, when I'm stoned . . . at least I don't go around raising a fuss with anybody.

The theme of not enjoying the company of drunks is often heard in talking to users. Even though they drink themselves, they find the characteristic, numbed intractability of the drunk unpleasant.

Users also speak of the after-effects of alcohol, and how they do not compare favorably with those of marihuana. One stable smoker is very effusive in his description of the physiological effects of alcohol on the body:

I tell many people: "Smoke marihuana, don't drink guaro. Don't you see that with guaro you don't wake up well? You even vomit blood. I've seen him, and he heaves and Wha! Wha! and he wakes up still Ay! Ay! On the other hand, marihuana doesn't do any of that.

Vomiting blood and very sick hangovers follow heavy bouts with guaro, the government-produced can liquor. Still, the strongest objections that smokers have against liquor are put in terms of behavior and self-control.

Those who think of alcohol and marihuana as equal do not partake in great quantities of either drug. They think of each as a vicio, or vice, and this to some extent controls their actions. Even though they use both, they view both with

mild disapproval. Such users are not given to excesses in anything, and often claim that they would like to give up marihuana for economic and legal reasons.

The effects that we have designated as "Cognitive and Perceptive" form a medium-sized cluster, and account for 14.6 per cent of the total number of effects citations. We can see in Table 13 that cognitive and perceptive effects have strong positive correlations with "home with group," "countryside with group," and "countryside alone" smoking environments, but only for the column percentages. This means that the cognitive and perceptive effects group tend to have greater than expected frequencies in certain smoking environments as a group, but that they do not account for an unexpectedly large percentage of effects for any single environment comprising the group. The specific environments where high correlations do exist are for the most part social in nature and relatively free of risk.

Musical enjoyment is one of the cognitive and perceptive effects. In general, users find that listening to music is more enjoyable after smoking marihuana. "Rides," in the country and gatherings on the street corner are often accompanied by a small radio. Smokers often resort to the company of the radio during solitary marihuana smoking sessions, as in the case of Lalo:

Interviewer: What do you like to do best when you're stoned?

Subject: When I'm stoned, you know what I like? To go to bed with the radio by the bed, and listen to music, like classical<sup>6</sup> because I like music like

that, and also youth music (rock). And I turn on the radio, hopefully I'm alone, just me, and I do that every night.

His simple enjoyment of music while intoxicated with marihuana is another example of the principle that users take advantage of available resources from which to derive individual sensual pleasure. The effect of enhanced musical enjoyment spreads evenly across the various smoking environments because it is a stimulus which is available in many different social contexts.

The two most often-cited cognitive and perceptive effects are "conversation" and "thoughts more profound." Of the 22 total references to the conversation-altering effect, 18 cited improved conversation, while four described a loss of conversational ability. Those who find improvement emphasize the facility with which they express their ideas. One notes that he prefers to be stoned when talking to officials or to his lawyer because he finds technical conversations more manageable. In some of our first experiences in the field, users would demonstrate their linguistic dexterity and maintenance of control by performing difficult feats of recall and diction, using several forms of Costa Rican "pig Latin."

Some users maintain that the effects of marihuana cause a deterioration in the quality of conversation. The usual complaint is that users cannot remember what they are saying, or that they do not bother to talk at all when they are stoned. One stable smoker discusses some conversation ills in the course of his marihuana use interview:

. . . They (marihuana smokers) seem a little like parakeets or parrots. They all want to talk at the same time . . . maybe you're saying something and they don't give you time to finish.

"Chattiness" as described above is often associated with reduced work effectiveness, but more frequently the smokers find improved facility in both conversation and work.

Twenty-nine citations of the "thoughts more profound" effect appear in the life history and marihuana use interview materials. They tend to appear most frequently in (17 out of 29 citations) connection with the "home alone" and "workshop alone" smoking environments. Users believe that marihuana affects concentration, memory, and free association so as to allow them to think more clearly with important insights. One stable smoker expresses this increased facility in the following passage:

It (marihuana) nourishes my thoughts for the things I do . . . be it a benefit . . . be it a way to get things done . . . I have a big thought. It provokes big thought . . . for example it makes me wiser. . . . I think everything out better.

The phrase "I concentrate better" was heard also in connection with both work and other kinds of evaluable performance. Some users claim, much as the Jamaican ganja smokers quoted by Rubin and Comitas (1975) that they can sit down with a difficult problem, smoke marihuana to concentrate, and reach a solution. One user, a stable smoker, claims that he is able to read more effectively with marihuana:

. . . I have my room where I live. I start to read magazines. I like to read many magazines. I like to concentrate on a magazine that is attractive and good. There are police magazines on the F.B.I. and I particularly like them.

Although this subject's reading matter consists of comic books and pulp novels, other subjects have demonstrated good reading skills based on little educational opportunity, often surprising the field team with their conversation on world news events and political issues.

#### User Types and Subjective Effects

Table 14 contains a cross-tabulation of user types with the effects list presented earlier in this Chapter. Stable smokers cited an average of 12.5 different types of effects while the street movers cited 13.3 and pastoralist-escapists 13.0.

The six physical effects all were cited in high frequencies by the stable smokers. In Table 15, which shows only significant or near-significant differences, we can see that when standardized scores are compared for the physiological effects, relatively few differences between stable smokers and the street-mover-pastoralist-escapist conglomerate (again these two user types were combined due to statistical necessity as in Table 9) approach statistical significance. When all of the physiological effects are compared for the two user types, as in Table 16, we see that the difference in citations approaches significance at the .07 level of confidence. This may be interpreted as a tendency on the part of the stable smokers to cite physiological effects. We have noted earlier that stable smokers tend to smoke in closed and often solitary environments, and that these

TABLE 14

## Smoking Effects and User Types

Effects	Pastoralist- Escapist	Street Movers	Stable Smokers	Total
Bad for eyes	0	2	6	8
Good for asthma	0	0	4	4
Dry mouth, rough throat	0	5	6	11
Nerves (+ calms	0	4	9	13
- worsens)	0	3	3	6
Sweat, cough	2	3	8	13
Relieves aches, pains	0	0	2	2
Heat	0	2	3	5
Bad for lungs	0	0	2	2
"Muerte blanca"	1	20	16	37
General "blahs"	0	0	2	2
Marihuana hangover	0	6	0	6
Sleep (+ helps	0	7	8	15
- hinders)	0	0	2	2
Sex (+ better	2	18	19	39
- worse)	0	0	1	1
Hunger (+ increases	1	24	18	41
- decreases	0	4	6	10
0 neutral)	0	1	1	2
Work (+ helps	0	13	32	45
- hinders	2	3	5	10
General performance				
(+ helps	0	6	9	15
- hinders)	0	6	7	13
Sing better	0	2	0	2
Time in job goes faster	0	0	4	4
Mirth	1	8	1	10
Passive audience	1	5	8	14
Anti-boredom	0	2	3	5
Everything rosier	2	11	14	27
Alcohol (+ better	1	3	9	13
- equal)	0	0	4	4
Behavioral compensation	0	4	4	8
Susto (fright)	2	0	1	3
Active participation	1	5	9	15
Fight	0	3	0	3
You act idiotic	1	1	0	2
You isolate socially	0	0	4	4
Socially more aggressive	0	1	3	4
Helps face the day	0	1	3	4
Floating sensation	1	1	1	3
Music better	2	7	4	13
Nothing	1	2	4	7
Perception altered	0	3	1	4
Conversation (+ better	0	6	12	18
- worse)	2	2	0	4
Thoughts more profound	2	7	20	29
One becomes creative	0	2	4	6
Hurts memory	1	4	2	7
Totals	26	206	284	516

TABLE 15

Significant Differences in Standardized Scores\*  
For User Type and Smoking Effects

Effects	Street mover- Pastoralist- Escapist	Stable Smoker	Total	p - score
Bad for eyes	4.7	6.1	10.8	p - .12
Good for asthma	0	4.0	4.0	p - .06
Nerves (+ calms)	6.3	9.1	15.4	p - .12
Muerta Blanca	33.1	16.1	49.2	p - .005
Marihuana hangover	9.5	0	9.5	p - .001
Sex (+ better)	31.6	19.2	50.8	p - .02
Work (+ helps)	20.5	32.3	52.8	p - .019
Time on job goes faster	0	4.0	4.0	p - .06
Mirth	14.2	1.0	15.2	p - .0004
Alcohol (= equal)	0	4.0	4.0	p - .06
Fight	4.7	0	4.7	p - .04
You isolate socially	0	4.0	4.0	p - .06
Music better	14.2	4.0	18.2	p - .01
Conversation (- worse)	6.3	0	6.3	p - .01
Hurts memory	7.9	2.0	9.9	p - .05

\*Standardization factor derived by dividing the other column total by 10  $n_i$ .

TABLE 16

Effects Types and User Types: A Comparison  
of Standardized Scores\*

Effects Types	Pastoralist- Escapist and Street Movers	Stable Smokers	p-scores
Physiological	17.4	21.7	p - .073
Bad Trip	21.3	9.1	p - .011
Appetite	43.4	27.7	p - .009
Work	25.2	28.7	p - .08
Behavior and Sensation	43.4	32.3	p - .03
Cognition and Perception	32.3	23.7	p - .03

\*Standardization factor derived by dividing other column total by 20  $n_i$ .

environments account for a high percentage of all physiological effects cited. It would seem, then, that stable smokers tend to experience more physiological effects, and they smoke in environments which are conducive to those kinds of effects. Although the smoking environment may not "cause" the onset of a specific effect, it would seem to heighten the likelihood of such an effect.

A characteristic scenario of the marihuana use pattern which results in the user's experiencing physical effects is as follows: Mario, a stable smoker who lives with his wife and two children takes the bus home from his job as a construction worker at about 5:00 p.m. Since yesterday was payday, on his way home from work he is able to buy a roll of 25 marihuana cigarettes with what was left over from household expenses and rent. After a light evening meal of rice and beans with a small salad, Mario excuses himself to go to the bathroom. He often chooses this place in which to smoke, because he does not like to smoke in front of the children. As he relieves himself, he lights a marihuana cigarette made of the contents of two that he has bought. Mario's own words describe how he manages to smoke his marihuana in his home without the knowledge of his children:

Interviewer: Now in the house, you smoke alone?

That is, is the wife there?

Subject: I actually catch them off-guard, my children and my wife, so that they don't realize. I send them off to watch television, to the living room. Then I go into the bathroom, and while I'm defecating I'm getting stoned.

He notices shortly after inhaling the first toques, or "touches"

of his marihuana cigarette that his heart is beating faster and that some of the physical aches caused by his strenuous work are beginning to disappear. His nerves, somewhat tense from the risky business of procuring his marihuana and transporting it to his house, now begin to calm. He finishes his cigarette and his hygienic functions, and returns to the front of the house. There he may watch television or listen to the radio for an hour or so before retiring for the night.

Since Mario averages only two or three marihuana cigarettes per day, this may be his only instance of use during the day. Typically his effect accounts of marihuana dwell on the physiological, including appetite, with very little emphasis on other effect kinds.

In contrast to such generally soothing effects, "bad trips" are frequently mentioned by street movers. Both marihuana hang-over and white death are cited in significantly higher frequencies by the street-mover-pastoralist-escapist group, with p values in Table 15 of .001 and .005 respectively. The statistical significance of the combined bad trip effects category is only slightly less impressive at the .011 level as seen in Table 16. Stable smokers, except for the "blahs" effect, which they mentioned only twice, tend not to cite bad trips. It would seem that the open street smoking environment, more heavily populated by the street movers than by stable smokers, and conducive to uneasiness and insecurity, is what triggers most bad trips. Unlike the situation with closed environments, the use of marihuana in the street

requires constant vigilance and preoccupation with police. This would seem to be a factor in explaining why nearly half of all white death, or bad trips reports are for the "street group" smoking environments. One suspects, in fact, that street movers may prefer the street precisely because it adds a touch of excitement to their marihuana consumption.

Street movers also mentioned "appetites" effects significantly ( $p = .009$ ) more frequently than did stable smokers. The only appetite effect that does not conform to this pattern is "sleep."

The difference in emphasis between street movers and stable smokers may be linked to a difference in the basic approach to use taken by these two types of users. Street movers see marihuana as a source of pleasure that takes them out of the ordinary routine, whereas the stable smokers, having established a way of life which includes the drug in their everyday regimen, see marihuana as an amenity which makes the routine itself somewhat more bearable.

We noted earlier that the appetites effects are mentioned in higher frequencies in the home alone and the pension-brothel smoking contexts, where opportunities to satisfy appetites are most abundant. Using the scenario descriptive approach again, let us examine a hypothetical case of street mover's use which emphasizes such effects: Filiberto, after a day of shining shoes in the downtown area, finds he has 50 colones in his pocket. He had arranged earlier in the day to smoke together with a friend that night, so he

hurries out to a place where he knows he can buy two rolls of marihuana cigarettes for 40 colones. Having made the purchase, he meets his friend at a soda near the center of town, and discovers that the friend has invited two women to smoke with them. The group's main problem now is finding a place in which to smoke. One of the women offers her boarding house room, and they agree to smoke there, also agreeing on a fee for the women's sexual services, since both are prostitutes. The fee will be low, because the men also share their marihuana. Filiberto opens one of the rolls, hands out single cigarettes to the women, and apportion three each to himself and his friend. He combines the contents of his three cigarettes and smokes the resulting puro as he jokes with his companions and listens to the cumbia music blaring from the transistor radio which belongs to one of the prostitutes. Once Filiberto has finished his puro, he begins to feel the marihuana in his head, and the jokes become so funny that he can barely stop laughing. He rolls another puro, and as he smokes he notices that the prostitutes are becoming more affectionate. During sexual contact with his female companion, Filiberto finds that ejaculation is delightfully delayed, and when it comes, it is excruciating. Filiberto now rolls another puro, this time with the contents of six street-size cigarettes, smoking without a word. One of the prostitutes says she is hungry, and so Filiberto dresses to go to a corner soda. He gets several gallos<sup>7</sup> and as many sweets as his remaining funds will

buy. All four eat hungrily, but silently, sometimes commenting on the deliciousness of their food. The gallos taste wonderful to Filiberto. He feels that he can describe each separate flavor in great detail. The food has caused the effects of the marihuana to wear off, so Filiberto and his friend each light up a puro of six. The prostitutes are now both asleep, so Filiberto and his friend divide up the remaining eight cigarettes of the 50 which they brought to the room. Five or six hours have elapsed since they met in the soda, and in that time the four have consumed 42 marihuana cigarettes. Filiberto saves his remaining four for the morning after and walks to his own boarding house, not very far from the center of San Jose.

The above account is based on a combination of various user's descriptions of the pension-brothel smoking environment, and the kinds of effects they feel during smoking sessions in such places. There are several features in the account which are common to the more hedonistic marihuana usage styles. First, a male smoking companion is present, and at times there may be as many as three or four. Second, the quantities of marihuana smoked are relatively high, as in this case, where each of the men smoked 18 cigarettes apiece. Third, the women involved are usually prostitutes. Fourth, the food is always in the form of snacks and treats, rather than a stable meal. These factors, in combination, give the overall impression of concentrated pleasure-seeking on the part of the users.

Positive or at the most neutral effects on "work and performance" appear in low frequencies in the interview materials of street movers and pastoralist-escapists, and in correspondingly high frequency in the interviews of stable smokers.

These differences may reflect the contrast between the pleasure-seeking and the daily regimen approaches to using the drug. The stable smoker uses marihuana to help him get through a workday or to help him recover from everyday stress, while the street mover and the pastoralist-escapist assigns recreational and pleasure-seeking values to his marihuana smoking. Detailed discussion of this point will be presented in Chapter VI.

"Behavior and sensation" effects do not show as clear-cut differences among user types. Perhaps this is because "behavior and sensation" emerged as a "catch-all" residual category and contains some diametrically opposed effects (cf. the left-hand column in Table 14). Many of these effects have few total citations, so chance skewedness could also be the cause of the variation observed. Stable smokers may be reflecting self-confidence about their marihuana-related social behavior in their high positive scores for social aggressiveness and social isolation.

The final group of effects, "cognitive and perceptive," contains two with fairly large number of citations: The first, "conversation," has both positive and negative components. Table 14 shows that both pastoralist-escapists

and street movers cite negative effects of marihuana smoking on conversation more than stable smokers. Most stable smokers indicate that their marihuana smoking increases their facility with words and spoken ideas. Yet when these scores are standardized, the differences are not statistically significant.

Emphasis on thought processes and verbal communication among the stable smokers clearly differentiates them from the street movers, who seek rather the sensual and grosser behavioral effects of the drug. The strongly positive emphasis of street mover and pastoralist-escapist on music appreciation, also a sensual matter, lends support to this interpretation. An analysis of the final two effects further reinforces this argument by yielding a positive score for stable smokers in the "creativity effect" and a negative score for that group in the "memory impairment" effect.

In Tables 15 and 16, the configurations of effect preference between the user type paradigm groups becomes discernible. The preference of stable smokers for physiological and work-related effects of the drug approaches statistical significance in Table 16 at the .07 and .08 levels of confidence. Their preference for work improvement effects is significant at the .019 level. Pastoralist-escapists and street movers significantly prefer appetite and the behavioral and cognitive effects, and they tend to talk about "bad trip" effects more than do the stable smokers.

In Table 17, we have encapsulated the marihuana use characteristic of each user type in terms of smoking environment

TABLE 17

## User Type, Effect and Smoking Environment

User Types	Smoking Environments	Smoking Effects
Pastoralist-Escapists	<p>Limited repertoire, choosing low-risk open environments. Favored environments are "countryside alone" "street alone" "countryside group" "dance-hall."</p>	<p>Few clear emphases, but appetites and behavioral effects seem to be favored. Share lack of confidence in performance while under marihuana effects.</p>
Street Movers	<p>All open environments and some close environments when available. Often seem to be flaunting the law. Favored environments include "street group" "pension-brothel" "bar."</p>	<p>Appetite effects clearly emphasized, with minor emphasis on behavioral effects. Striking preponderance of "bad trip" effects in general and "white death" in particular. Lack confidence in work performance while stoned.</p>
Stable Smokers	<p>Closed environments, heavily favoring the user's home, and shunning the risky and open environments. Favored environments are "home alone" "work alone" "work in group" "home in group."</p>	<p>Emphasis placed on practical and everyday nature of use, containing more accounts of purely physical effects and positive effects on work performance. Thought and conversation are also claimed to improve under the influence of marihuana.</p>

and frequent experienced effects. Pastoralist-escapists appear to be the most reclusive and self-conscious of the three types. They tend to avoid the open sorts of smoking environments frequented by the street movers, and to have little access to the secure closed environments which the stable smokers prefer. Effects reported by the pastoralist-escapists do not show strong tendencies for specific areas of emphasis.

Table 17 also reveals the basic contrast between stable smokers and street movers in terms of the perceived utility of the drug. Street movers see marihuana as a drug of enjoyment and recreation. Their conversation about the drug is heavily loaded with sexual exploits, feasts, scrapes with the law, and other adventures, all recounted with a savor which contrasts with the comparatively bland stable smoker's accounts. Compare the following stable smokers' account of sexual function under the influence of marihuana with Paco's vivid description cited earlier:

Interviewer: What effect does it have on sex?

Subject: Effect? Well, yes, that, yes.

Interviewer: Is it good?

Subject: Yes.

Interviewer: How?

Subject: Gee, well, normally . . . yes, it works as one wants, see. At times you feel, let's say . . . . How should I tell you? A lack of spirit see. Because at times you get nerves, see. But that (marihuana) gets rid of them. . . . It comes out well; you work well.

The everyday flavor of this subject's description of marihuana's effect on sex typifies the stable smoker's approach to marihuana itself. To the stable smoker, marihuana is an ordinary

part of everyday life which has several functions which he considers pleasant and useful. These include work efficiency and enthusiasm, physical well being, and skill in conversation and thought processes. Appetites and thrills receive some attention from the stable smoker, but they are not his most important topics in discussing marihuana.

Stable smokers use marihuana where they feel it is safe: in their own homes, at work, or in familiar closed environments. Street movers smoke the drug in much more risky and often dangerous environments, and they emphasize the sensual and adventuresome qualities of their smoking. As a result of constant vigilance, and in many cases real fear, they also more frequently suffer panic reactions. Pastoralist-escapists reject the street movers' choice of smoking environment, but they share a basically recreational approach to using marihuana.

To illustrate these points further, we shall now present three marihuana use scenarios, one for each type of user, in which each type will be participating in preferred environments. These scenarios have been constructed from combinations of various field experiences and personal accounts, and do not correspond to any single user in the sample.

Guille, a pastoralist-escapist, finds that it is now afternoon, and he still has not had the opportunity to smoke marihuana all day. With only five colones in his pocket, he has little chance of buying enough marihuana for what he considers to be an effective dose; prices of individual cigarettes are between 1.25 and 1.50 colones. He searches the

streets of his barrio, and eventually manages to find three other boys who all have roughly the same amount of money as he. Together they are able to make what they call a puesto, or "bank" of 25 colones, which is sufficient to buy a roll. Since Guille is the oldest and most experienced of the group, he is chosen to procure the marihuana. They all agree to meet in a deserted coffee grove nearby, where they can smoke in peace. Guille buys the marihuana and hurries through the streets of the barrio to the edge of the coffee grove where his smoking companions are waiting. They cross a stream and climb the wall of a ravine to where there is a small clearing, and there they sit down to smoke. Guille passes three cigarettes each to his companions, and keeps the rest of the roll, making for himself a puro of his three. The others, being less experienced with the drug and therefore more cautious, smoke single cigarettes. As they smoke, all comment on the quality of the material, coughing intermittently and cracking jokes. By the end of the first round of smoking, all are laughing and coughing. Guille rolls himself another puro of three as his companions begin smoking their second cigarette. All inhale deeply, and continue to keep the smoke in the lungs longer. About half-way through the second puro, Guille begins to feel that his head is floating, and he realizes that he has reached his effective dose level. The group has settled down to story-telling, and Guille gives an account of a film called "Joe" in which many of the actors use drugs. He describes in particular detail how the

protagonist smokes his first marihuana through a hookah, noting that the actor inhaled just like one of the younger of the present smoking companions, who is duly embarrassed and kidded about the comparison. Suddenly they hear a figure moving through the grove and all start and visibly tremble, but the figure moves on without stopping. Conversation now breaks off, and each user continues to smoke in silence. By now, Guille has finished eight cigarettes, more than his share. The others have had half that amount, but show no desire for any more after finishing their fourth each. After offering the remaining cigarettes around and being refused, Guille pockets them. At the beginning of the afternoon he had financial prospects for only three or four cigarettes, but he ends up through the "bank" arrangement consuming 13. The other boys, who all live at home, now are beginning to feel hungry, and they get up to leave. They separate at the edge of the coffee grove two hours after they met there, and walk silently to their individual homes.

Guille says that he prefers to smoke alone, but financial necessity forces him to smoke with a group. He seems to enjoy the company of these younger smokers, and participates actively in their joking and conversation. Later, as he achieves heavier dosage, Guille's chatter and joking break off, and he becomes more pensive. Finally, he goes home to eat, an action that often ends the effects of smoking. Given the resources at their disposal, the group hide themselves as well as possible when a stranger appears; the fear that passes through

all of them is apparent. When they return to their homes, their families may or may not notice that they have been smoking marihuana, or they may search for subtle clues such as eye redness and unusually hearty appetites.

Gilberto, a street mover, has been out of a job for about two weeks, but today he managed to find a half-day's hauling work in the market. His earnings were twelve colones, of which he gave half to his mother as a contribution to the household food budget, keeping the other half for his own use. By 7:00 p.m. it is dark; Gilberto leaves the house after his evening meal, ostensibly on a minor errand. He climbs the hill to a corner toward one extreme of the barrio where his friends are gathered. One of these is currently selling marihuana on a small scale, and he tends to sell individual cigarettes at low prices because Gilberto helps serve the customers who come by. There are about ten people on the corner tonight, including one woman and males ranging in age from 43 down to 13. As Gilberto approaches, he smells the aroma of burning marihuana in the air around the group. He exclaims in a manner of salutation that when he was four blocks away he said to himself, "Those mud-faces are smoking marihuana! I can smell the stuff from here!" He is greeted by the group not warmly, but with profuse jocular knowledgements of his presence. He approaches Yogui, the friend who is now selling marihuana and asks if he can buy five marihuana cigarettes with his five colones. Yogui begins to object, saying that they cost him more than that, but Gilberto

reminds him of earlier galeta, or "runner," services rendered and eventually obtains Yogui's consent to the low price. Because they are among long-time smoking companions, Yogui makes the sale right there on the street corner without any complicated exchange procedures. Gilberto immediately wraps three into a ball covered with cellophane and puts them into his pocket. He unrolls the other two and combines their contents into a single paper, first removing seeds, which he believes causes headaches. The extra paper is burned as it is discarded because the narcotics police believe the presence of yellow paper sufficient evidence to justify a 24-hour jail term for "suspicion." Gilberto lights up his puro of two and inhales very deeply. He does not exhale for a long time, periodically sipping small gulps of air to help him maintain the marihuana smoke in his lungs. He holds the cigarette inside his cupped hand, so that the glow from the ash may not be seen from a distance. Not many vehicles pass this corner in the barrio, but any pair of headlights that approaches elicits a readying of defenses. These include preparation to swallow or discard each individual's marihuana, depending on the tightness of the situation. Most headlamps are false alarms, and business goes on as usual.

As Gilberto finishes his puro, he begins to notice that he is feeling "toasted," warm and glowing. The dingy surroundings begin to look softer and more appealing. A group of three girls pass by the corner on the far side of the street, and the smoking group shouts minor flirtations across to them.

Gilberto shouts, "Turn around and look at me, so I can die happy." After the girls are gone, one of the older users in the group begins to describe in lurid detail what he would do if he were alone right now with one of those girls. Gilberto listens. He thinks to himself that none of them except Alberto would have the courage even to walk up and talk to those girls, and Alberto does that only with girls he already knows. Still, Gilberto feels very good; he removes another cigarette from his cellophane ball and prepares it for smoking. He had used his last tobacco cigarette, making a taco (see Chapter IV) to finish off his first marihuana cigarette; after re-rolling his marihuana cigarette, he steps into a nearby corner store to buy five more tobacco cigarettes with his last colon. Gilberto rounds the corner to rejoin the smoking group just as he hears a flat voice say, "Narcotic police, don't move!" The faces of his companions blanche and assume a look of abject terror. One of the boys swallows the cigarette he is smoking. Then, the voice laughs and says, "It's only Lefty, fellows." The whole group laughs weakly at the joke, but when one of them says that he swallowed a cigarette in reaction to Lefty's prank everyone explodes in gales of laughter. Gilberto returns to his marihuana, noting that this cigarette is barely getting him back to the feeling that he had achieved at the end of the first puro. He makes another taco to finish his marihuana butt; the transition from the harsh, acrid taste of the marihuana to the smoother qualities of the tobacco is always pleasurable. Since it is now 9:30,

and he has an appointment in the morning to talk to a foreman about working in construction, he decides that it is time to go home. He says goodbye to his companions and moves down the hill to his house. He has smoked three marihuana cigarettes during the past two-and-a-half hours.

Alejandro is a stable smoker who specializes in interior carpentry for house builders. He awakes at 5:00 a.m., just before sunup, and smokes two marihuana cigarettes he had prepared the night before for this purpose. He feels that smoking helps him to endure the cold of the shower he takes every morning, and prepares him for the day's work. After a breakfast of bread and coffee, he leaves the house by 6:00 to be at the construction site by 6:30. He carries five marihuana cigarettes with him to work. At 11:30 while his companions at work are eating, he finds a secluded spot at the site where he can quickly fashion a puro of two and smoke it. He begins working before the others are finished eating, because he says that marihuana makes him feel like working. He continues vigorously until mid-afternoon, when he finds himself slowing down. Saying that he wants to investigate something under the house, as he crawls beneath the floor boards to look at the location of some concrete supports, he re-rolls and smokes another marihuana cigarette. Since it is now 3:00 p.m., he estimates that this last dose will make the remaining hour-and-half of his workday pass more rapidly.

Alejandro leaves work at 4:30 and arrives home by 5:00. His wife has a large meal waiting for him. He eats what is

effectively his only meal of the day, and rests at home until his cousin comes by the house at 6:30. This cousin is Alejandro's most regular smoking companion. According to the cousin, the local marihuana dealer has just received a good batch of Limonese variety, so they decide to go and buy a small pouch. They must walk two miles to this dealer's house, where they are able to purchase a half-ounce with their 50 colones. The cousin has some rolling paper, so they go to his house to smoke. Alejandro decides to make a super puro from a whole sheet-width (8 1/2 inches) of paper. He rolls the puro into roughly the thickness of a soda straw, using for this purpose the amount of picadura normally used for eight street cigarettes. He smokes and smokes, always inhaling deeply and exhaling as little marihuana smoke as possible. His cousin rolls a puro of more modest size and smokes in the same way. The radio is tuned to a station which specializes in soft boleros, the music which Alejandro calls "classical." They both listen and experience a soothing and restful sensation. The two smokers talk quietly of the day's activities, and Alejandro speaks of the additions he plans to make on his house and several plans for future employment when his present contract expires. His cousin listens and nods. At 9:00, the cousin is almost asleep, and so Alejandro leaves for his own home to watch television for an hour before joining his wife in bed. He is finishing a day in which he smoked perhaps more marihuana than usual because of the large purchase. The rest of his share of the purchase, which was

divided evenly, will last him two or three days.

The above account emphasizes the kinds of effects and smoking environments found in the stable smokers' self-reports on marihuana use. The generally closed and secure atmosphere in which Alejandro smokes marihuana contrasts sharply with Gilberto's edgy and constantly vigilant street situation. While Gilberto risks arrest with every smoking session, the process of procuring marihuana and using it is routine and calm for Alejandro. Alejandro has specific uses for his marihuana both as a work enhancer and as a relaxer at the end of the day. Gilberto has the general purpose of getting stoned in a social recreational setting. Both know what they want their marihuana to do for them, and they seldom are disappointed. One stable smoker explains this approach to the use of marihuana.

Interviewer: Do you get more inspired when you smoke?

Subject: Yes

Interviewer: How?

Subject: Let's say you haven't smoked for a while and then you smoke. You feel different . . . . For me, marihuana, for whatever purpose you want it, if you set the tone and concentrate on what you're doing, it works for anything. . . . If I want not to sleep, with marihuana I don't sleep.

### Summary

The complex relationship between marihuana users and their drug becomes more manageable when a typology of users is employed for descriptive purposes. We identified three types of marihuana smokers among Costa Rican working class males, the stable smoker, the street mover and the pastoralist-

escapist. The three types were identified on the basis of continued observation of individual smoking styles over a period of more than a year. Life history and marihuana use interview materials were then analyzed quantitatively to check the validity of the types with special attention to the kinds of smoking environments described by each subject, and the kinds of effects experienced. These interview materials bear out the original typology, showing that stable smokers tend to smoke in closed, safe environments such as their own homes or places of work. Street movers tend to mention open environments where they often risk arrest for their marihuana smoking. Pastoralist-escapists tend not to smoke in open environments, as do the street movers, but, having no access to secure, closed environments, they choose countryside settings to minimize their smoking risks.

Smoking environment and subjective effects of smoking were found to be related so that certain commonly-cited effects occurred in one or two specific environments. The most striking example of this is the occurrence of the white death reaction in very open smoking environments, such as the streetcorner or a bar. Cross-tabulation of user type and citations of subjective effects also point out that the street-movers, those who most often frequent the open smoking environments, tend to experience white death with the greatest frequency.

Once the relationship between user and environment, environment and effect, and effect and user had been defined

through our method of cross-tabulation, it was possible not only to characterize each type of user by his qualitative style of use, but to name the specific kinds of environments in which he was most likely to smoke, and the kinds of effects he was most likely to experience. Stable smokers tend to concentrate on purely physical effects, work effects, and effects which improve cognitive function. Pastoralist-escapists and street movers seem to be most interested in, and therefore experience, sensuous and appetite-related effects.

The relation of amotivational syndrome to the Costa Rican patterns of marihuana use is simplified by the user typology described above. Among the Costa Rican marihuana smokers studied, there is a sub-group who associate marihuana with work and normal activity, and another subgroup who associate their use with more hedonistic experiences. This difference in value systems must be considered as a key variable in assessing the data presented in the following two chapters.

## NOTES

<sup>1</sup>As compared to a mean age of 28.1 and a range of 20 to 41 years for street movers.

<sup>2</sup>Cross-tabulations were made in a manner similar to that used for user type and smoking environment, running user type and smoking environment against effects mentioned. Field notes again provided a baseline for defining the range of effects to be listed. Then, the life history and marijuana use interview transcriptions were sifted one by one to extract the number of times each effect was mentioned by the subject, and to add any effect that had not yet been recorded. An internal check for accuracy in recording was provided by the fact that each effect was recorded twice, once in the effects-versus-user type tabulation and once in the effects-versus-smoking environment tabulation.

<sup>3</sup>"Nerves," or nervios refers to a whole spectrum of psychological or physiological nervous disorders recognized by the Costa Rican lower class.

<sup>4</sup>Goode (1970) and Grinspoon (1971) describe the North American patterns of Cannabis use which have become popular within the last ten years. Further reference to North American Cannabis use may be taken to mean the patterns described by these authors.

<sup>5</sup>This activity, because of what happens in the grandstand, requires such activeness on the part of the spectator that we felt that it should be included in active recreation.

<sup>6</sup>On the basis of many interviews and conversations, we find that, for most working-class Costa Ricans, "classical" music really means the traditional latin romantic ballads, or boleros.

<sup>7</sup>Gallos are tortillas topped with shredded cabbage and hard-boiled egg or a piece of meat or sausage or fried bologna. They cost about 75 centimos apiece (\$.09).

## CHAPTER VI MARIHUANA AND THE LIFE CYCLE

The relationship between marihuana and the user is best understood in terms of the interaction between crucial points in the user's life and the individual's adoption of Cannabis consumption. The Costa Rican data indicate that childhood socialization leads up to a critical period in adolescence when marihuana use is either adopted or rejected. The cultural variables surrounding this decision must be taken into account. Performance criteria (such as school records and adolescent and adult work histories) will then be evaluated to determine the presence or absence of the "loss of desire to work or maintain business, loss of productivity" attributes of amotivational syndrome among Costa Rican users.

### Initiation into Cannabis Use

Most chronic marihuana smokers in Costa Rican begin their use of the drug during either adolescence or late childhood. The mean age of initiation of "regular" marihuana use for our sample was 15.2 years, with a range of from nine to 26 years, with 12, 14, and 17 as the most often named ages for starting everyday consumption. The overall distribution of these ages is shown below. This

differs slightly from the age distributions for "first taste" of the drug, which shows a mean initiation age of 14.2 years, a full year less than the mean age for beginning regular use. The distribution of first taste shows a more unimodal tendency, with a cluster of high frequencies between ages 13 and 16 as seen below. For the user subsample as a whole, first exposure to marihuana tends to take place most often during the middle years of adolescence. Many users then delay their adoption of everyday marihuana smoking habits for a year, or sometimes longer.

TABLE 18

## Age of First Regular Marihuana Use

Age at first regular use	Number of individuals
9	2
11	2
12	6
13	3
14	6
15	4
16	4
17	6
18	3
20	2
21	1
25	1
26	1

The reasons for this delay are varied, including initial bad or neutral impressions of the drug during the first taste experience. The 41 users, when questioned on their impressions

TABLE 19

## Age of First Taste of Marihuana

Age of first taste	Number of Individuals
8	1
9	3
10	1
11	3
12	4
13	5
14	5
14	7
16	5
17	2
18	1
19	1
20	1
21	1
25	1

of the first taste experience, reported more disagreeable than agreeable experiences by 14 to 13. Twelve reported no effect at all, and two were indecisive. Many of the users were very definite in their negative descriptions of the first taste experience. One claims that he experienced white death the first nine times he tried marihuana:

Subject: Nine times I had the "white death." Nine.

Interviewer: And those were one after another?

Subject: All. One after another.

Interviewer: Over how long a period between the first time and the ninth?

Subject: Gee . . . Let's say two months . . . but then you see my head, how hard-headed about something I am, see . . . Any other person after three times says, "No more" but I kept on until I dominated it. And I dominated it so that now . . . gee . . . we smoke a roll between two of us and I have great capacity.

His perseverance in spite of repeated unpleasant effects must indicate something stronger than the allure of the drug itself brought him to continue until he could achieve an agreeable psychotropic effect.

We find that many cases are similar in their initial bad impression of the drug, although few have gone through such an exaggerated string of negative reactions. Other informants claim not to have felt anything upon first trying the drug. Still, all repeated marihuana smoking until they did achieve an acceptable "high," and all continued a pattern of everyday use thereafter.

Since marihuana is not presently considered to carry physical dependence, especially in dosages of first taste use, it seems important to explore other possible influences which lead potential users to continue trying the drug until they decide that they like it. One of these is the exposure to street culture. As explained in the earlier chapter on study setting, most working class children and young adolescents who end up chronically smoking marihuana seem to pass through a period in their lives where they are in intensive contact with the culture of San Jose's streets. There they are exposed to the influence of older and more experienced people who exert influence on them both by example and by active counselling and inclusion in street-type activity. Under such tutelage, young potential users constantly hear that marihuana smoking is an experience which can be excruciatingly pleasurable, and that it is not

at all harmful to the body. They also are offered marihuana repeatedly by these older, experienced people thus receiving ample opportunity for first taste experience and later continued use. We find that, among our final subsample of users, 72.5 per cent were introduced to marihuana by people older than they. Almost half were offered their first marihuana by a person older by five years or less, while nearly one quarter of the subsample had their first marihuana under the tutelage of a person more than five years older. This illustrates the pervasiveness of the influence of older acquaintances as young smokers begin to use marihuana.

Becker's (cf. Chapter I: 33) analysis of marihuana use adoption is useful in defining the influence of established physiological and subjective effects, such as increased heart rate, dry mouth and throat, and the impression of rapid mental activity which are more or less universal to marihuana smoking. Unless the experienced user helps the novice to interpret these and other possible effects as positive ones, the novice is not likely to continue marihuana smoking to the point of establishing chronic use (Ibid.: 239). This interpretative tutelage process apparently also happens among Costa Rican marihuana users.

Another important factor leading to marihuana use among young people seems to be the desire for new and/or defiant experiences. Besides referring to the influence of older people, many users' life histories tell of strong

motivation to achieve psychotropic states on the individual's own initiative. One user claims that he began marihuana use "for the luxury of calling myself a marihuana-user." Others go through periods of experimentation with heavy alcohol use at the same time that they begin marihuana use. One user claims to have forced a vendor of marihuana to sell him his earliest supplies by threatening to report him:

. . . I said to him, "what is that you're smoking?" "Ah, . . ." he said, "they're cigarettes but I'm not giving you any because that stuff can cause you harm." I said, "Give me some so I can try one." "Well, I'll give you one, but don't tell." I smoked some and I liked it. After that I often came by and said, "Don't you have one of those? Give it to me or sell it to me." And so I began. . . . Later I would say . . . "If you don't sell it to me, I'll tell the police you have some."

The point in early or middle adolescence at which use is initiated must have some common characteristics for users which also contribute to the adoption of some pattern of drug use.

Krauskopf and Doughty (1976a) in a detailed analysis of a small subsample of ten matched pairs of users and non-users, find that adolescence is the most crucial point in distinguishing between the life histories of users and non-users. The users cited in their discussion share basic insecurity and low self-esteem due to their lack of success in establishing their own independent adult status (Ibid.: VI-47). The two most striking corroborations of this finding for the user matched pair sample of 41 on which the special tests were made come from the computative analysis

of life history materials. Users in the matched pair sample experienced significantly more ( $p = .01$ ) social and economic decline of status during adolescence than did non-users. They also were significantly ( $p = .002$ ) less likely to have had full-time jobs during this period. We do not believe that the above two conditions were caused by the initiation of marihuana smoking. Rather the conditions and the initiation of marihuana smoking would seem both to derive from other important aspects of the users' adolescent situation, and would tend to reinforce one another. To illustrate, True (1976b) finds a striking difference between users and non-users in their respective familial socialization environments. Users tended to find themselves, either by force or by their own choice, out of the care of the household at an earlier age than did non-users. However, such movements toward independence at an early age were fraught with problems, given little support from family and possibly inadequate independence socialization during childhood. The young adolescent trying to make his own way without help and perhaps without even a proper idea of how to survive has more reason to be seeking a psychotropic state, simply as an escape from a very unpleasant existence. Significantly more ( $p = .01$ ) users than non-users left their families of orientation before marriage, even though in Costa Rica marriage is considered the natural time for a son to leave the house. Marihuana provided a respite for many of these who found their new environments hostile.

Coupled with the existence of a social environment where opportunities and encouragement to smoke marihuana were numerous, this susceptibility to, or need for, an "escape" of some kind made adolescence a particularly crucial time for the initiation of marihuana use.

Further insight regarding the combination of street social environment and psychotropic needs may be gained from the marihuana use interview materials. A cross-tabulation of the description of the first taste experience against the person who introduced marihuana shows that the majority of chronic smokers who had either a bad or indifferent impression of the drug were introduced to it by someone older than they. Despite an unsuccessful first experience with marihuana, these individuals all became chronic users, and this must be due at least in part to the influence of the older introducers of the drug. The cross-tabulation below shows the described differences:

TABLE 20

## Introducer's Age Relative to Ego\*

First Experience Impression	Older	Younger
Good	10	4
Bad, Indifferent	19	7

\*One individual does not remember clearly.

$\chi^2$  is .02; not significant.

As already inferred in the previous chapter on effects and environment in marihuana smoking, part of the above distribution of first taste impressions may be related to smoking environment. Again, Becker's analysis (1953) seems also to be confirmed by the users' own memories of their first use experiences coupled with the experienced users' role. This could explain the predominance of indifferent or negative reactions during the first taste experience. One user who had a negative first taste reaction describes the persistence of the introducer:

(After smoking) I was so crazy that well, you should have seen how crazy. . . . Now I was in another sense dizzy. Then the guy (introducer) brought me a soft drink and I drank that. . . . Well, from that day, I didn't do it again and well, after almost exactly a month, the guy invited me again. And the third time I had the "white death."

He goes on to say that, after that third experience, he never had white death again, and decided that he liked the effects of marihuana experiences.

Another indicator of the strength of the social environment and psychotropic need may be found in the time lapses between first taste use and the beginning of regular use. The mean time lapse for the whole sample was one year, but there were individuals who began regular smoking immediately after the first taste experience. All but three of 17 smokers who waited before initiating regular use delayed no more than three years. These remaining three delayed the beginning of everyday marihuana consumption four, five, and

seven years. Thus, the one-year average time lapse may be inflated due to a relatively small number of subjects with long time lapses. In fact, 33 of the entire subsample of 41 delayed the initiation of regular marihuana use by one year or less. The cross-tabulation below illustrates the relationship between time-lapse and first taste impression.

TABLE 21

## Time Between "First Taste" and Regular Use\*

First Taste Impression	Lapse	No Lapse
Good	5	9
Bad, Indifferent	12	15

\*The unsure individual was lumped with the "bad, indifferent" group in this table.

$\chi^2$  is .29; not significant

Here we see that the individuals who had bad or indifferent first taste experiences with marihuana actually were not any more likely to delay initiation of regular use than those who had good experiences. Surprisingly the 15 users who had bad or indifferent first taste experiences with marihuana did not delay at all in beginning regular use of the drug.

It would be totally unreasonable to say that the allure of marihuana's psychotropic effects alone was sufficient to lead to chronic use patterns among young potential users.

Initiation to chronic use has not been the result of the innate attraction of marihuana to its users, but rather stems from other social and psychological factors which impinge on the lives of these individuals at crucial points in the life cycle, especially adolescence.

During their life history interviews, all of the users in the matched pair subsample were asked if marihuana use made some sort of difference in their lives. Their replies were scored positively, negatively, or neutrally. Thirteen users indicated that marihuana use had somehow improved their quality of life, while none said that the net effect of marihuana on their lives had been harmful. Eighteen showed no effect, either positive or negative, on their lives, and one was so ambivalent that he could not be scored in any of the above categories.

An overall assessment of the effect of marihuana on a person's life is at best problematical, especially in light of the strong evidence that marihuana usually does what the user wants it to do for him. Nevertheless, these assessments, combined with the other information we have about the lives of the users at time of first use, give a perspective on the impact at time of entry into the individual user's lives. Most (over 70 per cent) note either a positive or neutral influence. Some of those who noted a negative influence reported a simultaneous general decline in social and economic status; others who reported such a decline did not see marihuana as affecting their lives

negatively, however. In a number of cases, although the subjects did not blame marihuana use as a direct cause of their lowering quality of life, they did think that marihuana use led to more intense contact with criminal elements, which in turn led to problems with the police, jail, and continued lowering of social status and self-esteem. The following passage typifies this view:

. . . Suspicion, nothing more. The only thing about suspicion is that they grab you. Now and then when I'm coming home from the movies, straight home, and I'm with some other companions, what do they do? They search everyone and send us to jail. . . . Then what they do is give us a bad night.

To become identified with the underworld, or chusma as it is called in the subjects' colloquial Spanish, is an important step toward developing a police record. A person who is known to the police as an underworld character always runs more risk of marihuana searches and 24-hour incarcerations for "suspicion," and vagrancy.

Still, there is no clear pattern that emerges from detailed analysis of the individual subject's interview materials. Of the users who said that marihuana had a deleterious effect on their general quality of life, only three actually had records of adolescent delinquency, a somewhat lower percentage than that of the matched subsample user group as a whole. Even though marihuana use often does lead to more arrests and incarceration, this does not necessarily determine that the user will perceive marihuana smoking to be the cause of his lower life quality. Some

individuals with the very worst records of arrest and incarceration perceive marihuana to be a positive influence on their lives.

. . . I think that marihuana hasn't affected me at all. . . because I believe that the only thing is that all the time I've been able to buy it, but I think that . . . sure, it may be that I don't notice, but other people who know me and now know what I am, well, it could be that they see that it has affected me, but I think not, at least as far as I know. Morally, it has never affected me and physically either. . . I've never gotten desperate to smoke.

Marihuana users' perceptions of the drug's general influence on their lives are apparently too idiosyncratic and subjective to connect them in any cause-effect relationship with either marihuana use itself or any other single factor. Of the 13 users who were experiencing descending social mobility during adolescence, only three thought that marihuana use contributed to that descent. Five of these people said that marihuana made no difference, and five claimed that marihuana smoking helped things change for the better.

At this point, it is appropriate to return to the user typology outlined in Chapter V. We alluded to a possibly cyclical pattern among the types related to individuals' life cycles. Generally, the users in the sample tended to gravitate toward stable smoker patterns, shifting use patterns more than once during their lifetimes. Practically all users went through an initial period of street mover-style smoking during their first few years of use. Some

never adopted the stable smoker style during their entire lives, and others went through only brief associations with stable smoker patterns before returning to their street mover pattern. Such young street movers would be very much like Gilberto, still living at home and smoking with a street gang. Others would be like Antonio, living alternately in reformatory, jail and pensiones when they have enough money, and smoking wherever they can get away with it.

The life histories of the older stable smokers show clearly that they all went through periods in their lives when their smoking styles were closer to street mover, or in some cases pastoralist-escapist style. For example, José began his smoking in a pastoralist-escapist style, because he met many of his first smoking companions at the swimming holes which he frequented as a young adolescent. many of his first smoking experiences were in these secluded pastoral environments, as he describes in the following passage:

I would go to the rivers and with a gang of four or five, kids too, but more "with it" street wise, you know . . . I had been submissive in the house, but after I made these friends I became libertine, street-oriented, only in the street, the pastures, the coffee groves, that is, I spent more time in the coffee groves.

He later married and adopted a pattern of seldom smoking around the house, confining his marihuana consumption to his workshop environment. Smoking marihuana serves now to help Jose get through the day's work, and very little else. He

has maintained his stable smoker consumption patterns for more than 15 years.

Martin is a stable smoker who began his smoking career very much in the street mover style. In fact, he still associates with street movers, even though he seldom smokes with them. His first experiences with marihuana occurred before he was married, and his life style was that of a young street mover without family. Martin at first lived in boarding houses (pensiones) and cheap hotel rooms when he could get them, and he smoked wherever he could, usually with street groups. As he grew older and experienced a few suspicion arrests, he came to decide that smoking alone in coffee groves (cafetales) was a safer policy:

I do it alone because as they say, "A solitary ox grazes better." I go alone, and if they (the police) should grab me in a coffee grove, well, I was defecating. But if there are two of us, they say we're either smoking marihuana or performing acts of sodomy. That's why I go alone.

Finally, when Martin married, he took to smoking in his own home, out of sight of his family. (His account of this smoking pattern appears earlier in the section on smoking environment and effects.) He has smoked primarily in a "home alone" environment for more than twelve years.

Some users never get out of the pattern set during their first years of smoking. Roberto, who is now 43, began to smoke marihuana comparatively late, at age 24. Before that, he had a history of heavy drinking which continues to a slightly lesser degree up to the present.

Roberto's immersion in the street ambience of San José began during late childhood and early adolescence, but instead of embracing marihuana use at that stage in life, he began to use alcohol. We may be certain that Roberto had opportunities to try marihuana before age 24, but for reasons known only to him, he did not pursue the drug. When he finally did taste marihuana for the first time, he continued despite repeated negative reactions until he achieved an acceptable psychotropic effect. Roberto had by then established a street oriented life style which has continued with only brief interruptions up to the present. He smokes marihuana just about anywhere, in street groups, coffee groves, pension-brothels, whenever marihuana is available. Roberto has remained a street mover during his entire smoking career, and at this point a change in that pattern cannot be foreseen. In his case, the initial drug of choice was alcohol; only later did he add marihuana to his drug use repertoire. The drug use pattern itself was set during the crucial adolescent period, and the adoption of marihuana was only a continuation of that pattern.

#### Marihuana and School Performance

True (1976b) establishes that many socialization factors contribute to eventual adoption of drug use. School records were collected for the members of our sample where possible to determine if the subjects showed any tendencies toward low achievement or unruly behavior in the structured

classroom environment before or during the adoption of marihuana use. Most of the sample attended some school, although few advanced to the secondary level. Due to destroyed records and various retrieval problems, we were able to obtain complete elementary school records on only a total of seven matched pairs of subjects. Partial records were available for some additional individuals.

The Costa Rican educational system has been a source of national pride for its people. The extravagant claims of 90 per cent literacy notwithstanding, this system has achieved a high level of success compared with other Central American countries, and it offers educational opportunities to all Costa Ricans who desire them. Children begin school usually at age seven and attendance up to age 12 is required for all. Enforcement of this law is rarely carried out, but the vast majority of Costa Rican children do attend at least part of the required six years. In many cases, children begin a primary school class with the teacher who will instruct them until they graduate to the secondary level. Because some teachers had been in charge of our subjects for several years, they could remember them accurately, providing added insight into that period of the subjects' lives.

The relationship between marihuana and the users' school records becomes clearer when we examine the school records in light of the ages at which the users began smoking marihuana. For the subsample studied, the average age of

initiation into marihuana smoking was exactly the same as the age of beginning regular use, 12.4 years. This is somewhat younger than the sample as a whole, and there was no time lapse between first taste experience and initiation of regular use. Of this group, three individuals began smoking marihuana regularly before terminating their schooling. The school records of the users and their matched controls show a difference in performance that is almost statistically significant when they are compared for number of years failed or lost before sixth grade. Cross-tabulation the users and non-user groups with one year or less lost and two or more years lost out of the first six grades, we find that the difference does not approach significance. Data were gathered for the sample as a whole on number of grades attended and number of grades actually passed, and no differences appeared between the two groups.

Close scrutiny of the school records for the users who began smoking marihuana while still in school shows that there is no difference in their performance before and after beginning to use the drug. Copa, for example, began using marihuana at age eleven, which is the year after he failed fourth grade, the only failure on his school record. His teacher for fourth and fifth grade reports that he was at times unruly and ill-spoken, but that he was not a bad student, and he produced work that was slightly above average for the grades in which she taught him. This teacher

knew Copa when he was initiating marihuana use, the year after his failure in fourth grade. Javier began to use marihuana at age nine, due to his very early immersion in street life selling empanadas (fried meat pastries) to earn money for his family. He managed to continue school through sixth grade, and his performance as evaluated by his teacher remained almost rigidly consistent for his entire school career. Javier describes the effect of smoking marihuana on his performance in the following passage:

I went to school well-stoned all the time. I would take along two or three joints. I'd smoke them in the bathrooms. All the time I was on top of the teacher, watching her and listening to what she was saying. I concentrated when I was stoned in class; I was interested. The proof is that I was one of the most efficient students, because I was always concentrating. My examinations almost always turned out well.

The opinion that marihuana actually helps in school work is not unusual among our sample of users. Another user whose school records were unfortunately unavailable gave similar testimony:

Interviewer: That thing about the mind, you said that marihuana gives you more activity.

Subject: Yes, more activity of the mind. That was at first. I saw that I was studying with enthusiasm and I remember that I studied enthusiastically and it got to be more and I'd get up in the morning to study and I would go to the dealer's . . . and I bought one for the morning and I would learn everything and my mind opened up. It gave me capacity.

The school records of the users who used marihuana while still in school do not really substantiate these claims,

but neither do they indicate appreciably decrease in performance after marihuana smoking began.

Arnoldo began smoking marihuana at age twelve, also after failing a grade. His performance evaluations show no before and after differences either positive or negative, and he continued school until he finished sixth grade. None of the three individuals who began smoking while still in school show records of change in performance levels after initiating marihuana use. All finished their first six years of school, and absence records are within normal limits, as may be seen in Table 22. In fact, when the absence records of users and non-users are compared, we find that the mean number of absences per year of school attended is generally higher among the non-users than among the users.

Four of the users in the group for which we have school records began smoking marihuana after leaving school. Tito, for example, failed third grade, and began smoking marihuana a year later. The factors in his life which led to poor performance and termination of school apparently had an effect before he began using marihuana. One of these factors may have been parental over-supervision. Tito claims that when he did his homework, his parents would stand over him and hit him every time he made a mistake.

Carlos began marihuana use two years after discontinuing his primary studies. He had successfully completed five grades with one failure at the third grade level. His

TABLE 22

## Mean Absences Per Year

Pairs of Subjects	Users		Non-Users	
	Excused	Nonexcused	Excused	Nonexcused
1	4	1	9	3.6
2	1.5	0	15.8	0
3	2.7	2	4.3	.5
4	4.3	1.5	8.2	0
5	7.7	.5	9.6	.6
6	1.5	1	0	0
7	10.6	2	7.2	7.7

$\bar{X}$  is 4.6, 1.1

$\bar{X}$  is 7.7, 1.7

performance records show that he maintained a barely passing average for those grades which he passed and dropped slightly below that level during his failing year. The principal of his school, after giving an accurate description of him and his early life history, said that Carlos was a discipline problem while attending school, and was considered by his teachers to be a bad boy. Carlos' problems in school clearly preceded his marihuana use.

Of all of the users for whom complete records were found, Heriberto had the fewest years of school. He attended and passed the first and second years, and then discontinued in the third year, never to return to school again. We were fortunate to be able to speak with Heriberto's teacher for those two years, and her familiarity with his home situation was notable. Heriberto's school work was never sufficiently good for him to have passed on the basis of merit. His work did not meet average criteria for grade promotion, and he was irregular in turning in assignments. The teacher says that she allowed Heriberto to advance because she knew about his difficulties in the home, which included many fights between parents and heavy drinking on the part of his father and his paternal uncle. She noticed often that he was listless in class and dozed from lack of sleep during the night. On the playground, Heriberto's manner of play was very rough and physical in comparison to that of the other children. Finally the teacher noted that Heriberto was not as affectionate as Costa Rican

school children at that age usually are towards their teachers. In sum, this teacher was reporting the symptoms of what she assessed to be an unfavorable childhood environment in the home. He did not begin to smoke marijuana until six years later, when he was 15 years old, and an established street-adolescent with a growing police record.

Betoel also began smoking marijuana during adolescence after leaving school. In a situation very similar to that of Heriberto, Betoel failed second and third grades and finally dropped out after passing to fourth. The principal of the school remembered him and his brother, noting that both were extremely unruly and difficult to control. She was familiar enough with Betoel's home situation to describe the severe alcohol problem which existed when Betoel was a child. In her own words, "Those boys slept as often in the streets or coffee-groves as they did in their own home." Betoel did not begin marijuana use until two years after he left school. By then, his experience in the street was considerable, and his independence fully established.

It is of no value to compare the seven users' school records with those of the non-users on a one-to-one basis, but we should include brief descriptions of the control group's school careers in order to obtain some idea of differences and similarities between the two groups. Generally, the non-user group experienced slightly more success in their primary school careers than did the user group. More of them progressed straight through their first six

grades without failures. Nevertheless, Roberto, a non-user, had the single most ignominious record of three consecutive failures of second grade. His first grade instructor noted that Roberto was sickly and introverted. The principal of the school said that the grading system at the time Roberto attended was harsh and often unjust, and that similar children do not receive that kind of treatment today. After failing third grade, Roberto stopped attending.

Roger, another non-user, went through all six grades of elementary school in an orphanage, where his attendance was naturally perfect, but his performance was consistently mediocre. His teacher describes him a docile and well-behaved, with no outstanding qualities, either bad or good. He and all of the other non-users except Roberto managed to finish elementary school, while only three of their seven user counterparts achieved this. Even so, marihuana use during the school years cannot be blamed for this discrepancy between the two groups, because the three users who completed elementary school were the only ones who began using marihuana before leaving school.

We hinted earlier that familial problems were probably the strongest factors which led to incomplete primary schooling in the cases of individual marihuana users. Similar problems existed in the families of some of the non-users who eventually finished sixth grade. Roger, for example, was very neglected during his first six years of life, and his mother decided to place him in an orphanage so that he could

receive more attention and socialization than she was able to give him. Being an illegitimate child, and left to his own resources most of the time, he had become an unruly child who roamed the streets and often did not come home at all. Roger's years in the orphanage were apparently sufficient to prevent his embracing the street way of life, and to force him to complete his basic schooling.

Trinidad and Enrique both lived in households where the father was an alcoholic with a problem serious enough to make everyone in the household suffer as a consequence. Even so, they both finished elementary school. Trinidad and Enrique might have had more opportunity to resort to a street education due to the unattractiveness of their home lives, but they were being raised in an environment which was nearly rural. As a result, they maintained a pattern of school attendance for lack of alternatives. For all non-users, the termination of required schooling was replaced by the alternative activity of working to earn a living. Even in the case of Roberto, he had been in school six years before he finally left to begin working.

The alternatives to school attendance for the marihuana smokers appeared at an earlier age, and especially in Heriberto's case, were closely associated with the street ambience of urban San Jose. Javier, whose exposure to street life and marihuana was very early, had other reasons for remaining in school. First, his mother exercised a very strong influence because Javier continued to live at home. Also, Javier

had established strong friendship ties with several of his street gang companions, and they all continued school together in the same class throughout the primary grades.

Of the seven marihuana users for whom we found complete school records, all abandoned their homes at least temporarily by age twelve. Non-users who served as the users' matched controls did not have this experience at all. The only non-user who did not spend his childhood with his nuclear family of orientation was Roger, who spent it in an orphanage, but that institution acted in loco parentis and cared for him perhaps more effectively than his own mother could have done under the circumstances. True's analysis of childhood socialization for the study sample (1976b) asserts that the family plays an important part in determining whether an individual will be exposed to the street ways of life. School attendance and eventual success in completing a basic education are also strongly influenced by home and family. In fact, those marihuana smokers in our small subsample of seven who managed to finish primary school seem to have done it in spite of deficiencies in familial influence.

Conduct in school among the matched sample also reflects an early established difference between users and non-users in perception of social behavior. Self-report for school conduct was significantly different between users and non-users for the overall matched pair sample of 82. To a significant degree ( $p = .03$ ), more users tended to say that

they were rowdy or mischievous in school than did non-users. This might lead to a suspicion that there was a difference in performance between the two groups, but this is not true. When the two groups are compared for number of years completed and number of years attempted, we find that there is no significant difference between users and non-users. In Table 23 we divided the number of years attended by the number of years completed and separated those individuals for whom that quotient was greater than one from those whose quotient was equal to, or in some cases of precocious advancement, less than one. No significant difference resulted from this comparison. This indicates that the subsample of seven matched pairs for whom we found school records is skewed to disfavor the users in that group, because their success in school is markedly lower than that of the non-users. Nevertheless, examination of individual cases shows that there is no relationship between marihuana use and this difference in performance even in these extreme instances.

TABLE 23

Quotients of Number of Years in School  
Divided by Number of Grades Completed

	$\leq 1$	$\geq 1$	No School
Users (N - 40)	16	19	5
Non-users (N - 40)	12	25	3

$\chi^2$  is 3.67; not significant.

The preceding discussion suggests that problems in the life cycle of the marihuana user often show up in a discernible pattern before initiation of marihuana use. Problems in school conduct and performance are often symptomatic of problems in the potential user's home and family life and general living environment. Exposure to the urban street culture is important both in presenting opportunities for marihuana use and providing encouragement for beginning and continuation of such use. In some cases, this street culture becomes an alternative to school attendance before the potential user completes his primary education. On the other hand, non-users do not have such alternatives during school years. Those users who began marihuana use before leaving school show that their performance was not hindered by such use, and some actually claim that it helped them to perform better. Thus, marihuana use at the point of entry into the life cycle of the user does not necessarily have a negative influence which can be separated from patterns of social adjustment and performance difficulties already set before initiation of that use.

"Loss of desire to work" and "loss of productivity" therefore cannot be confirmed as behaviors connected with the initiation of marihuana use, according to the information available on school work for the matched pair sample. Taking into account factors of adverse childhood socialization environment, we find that poor performance in school is much more easily explained by this kind of environment than

by initiation of marihuana use while in school. This finding conflicts with Robins, et al. (1970) analysis of black marihuana users in the United States. It was pointed out in Chapter I that more minute examination of adolescence is needed for proper study of the initiation of drug use. The evidence for Costa Rican patterns of Cannabis use adoption underline this need.

### Marihuana and Work

The ongoing habit of marihuana use in adult life seems at first glance to have an influence on certain areas of adult behavior. According to comparisons in the life history material scoresheet between users and non-users (N - 82), there are marked differences in the realm of work history and economic activity. During adolescence, the difference in type and frequency of work between users and non-users is highly significant ( $p - .002$ ), with non-users entering full-time employment more than the users, who tended to have part-time or sporadic work. This difference apparently extends into the work patterns of adult life, because users tend to have significantly more frequent job changes ( $p - .01$ ) than the non-users. Users also tend to have less than full-time employment as adults, and this differentiates their working records from those of the non-users to a highly significant degree ( $p - .001$ ). Periods of unemployment, both in frequency and in duration, differ for users and non-users at a level which approaches statistical significance.

Users are more frequently unemployed than non-users ( $p = .08$ ) and they tend to have longer periods of unemployment ( $p = .06$ ). These data are so close to statistical significance that they should not be ignored, especially when they are considered along with the comparative figures on job change frequency and full-time versus part-time work. On the basis of these user-non-user comparisons, it would be very easy to conclude that the user group tends to be more sporadic and unstable in its employment patterns.

The patterns of other economic activity also seem to point to a greater disorder and marginality among the users than among the non-users. In the category of income and expenditures, the users spend either as much as or more than they earn to a significantly higher degree ( $p = .005$ ) than the non-users. Users also tend to lack material goods whereas the non-users own houses and appliances and sometimes even motor vehicles. Non-users, probably due to their participation in installment buying, are more likely to be in debt than their user counterparts ( $p = .002$ ). In all, non-users appear to connect more strongly with working class economic activity than do the users with whom they are matched. They work full-time and buy material goods which accumulate, and they incur ongoing installment payment debts, which usually are payable within their income's means. Users, on the other hand, are more likely to work part-time or not at all, and some of them also resort to illegal means of obtaining income either from time to time

or on a regular basis, an economic activity which is completely absent from the non-user group.

The above comparison between marihuana users and non-users would appear to corroborate the amotivational syndrome effects attributed to chronic marihuana use by McGlothlin (1968), Smith (1970), and Kolansky and Moore (1972), but experience with the group of subjects for two years led the field researchers to suspect that this was not the whole story. First, in order to test whether marihuana use might be a cause of these differences between the two groups, a dosage comparison was conducted using mean daily dosage figures collected for all the users, and comparing those figures with the results of the interview materials score-sheet. Our reasoning was based on the assumption that if marihuana use were the cause of sporadic work histories and marginal economic activity for the users, then the heaviest users would have the most sporadic work histories and the most questionable economic backgrounds.

The dosage levels elicited by three separate investigative operations were used to provide a mean daily dose level per individual, and the results did not at all support the hypothesis that higher dose levels are correlated with the poorest work records or the shadiest financial dealings. In fact, the reverse was found to be true on several of the key variables which were found to differentiate significantly between users and non-users. Beginning with adolescence, we find that it is the heaviest users who had full-time work

during that period. Users whose present average daily dose of marihuana is 10.7 cigarettes per day worked full-time during adolescence. Those who worked part-time as adolescents now smoke an average of 7.8 cigarettes of marihuana a day. Those who worked only occasionally and according to necessity now smoke an average of 7.9 cigarettes per day. The difference between full-time and part-time workers during adolescence coincides with the difference between moderate and heavy smokers for the study group. Job changes for the various levels of marihuana use results in similar contrasts. The following table shows how the levels of usage compare with job change frequency.

TABLE 24

## Job Changes and Use Level

Job Changes	Use Level (in cigs. per day)
Does not work	6.2
Frequent (several times a year)	7.6
Occasional (yearly or less)	5.7
None	15.4

Those with steady jobs or who are self-employed smoke more than twice as many marihuana cigarettes per day as those with more frequent job changes or those who do not work for a living.

TABLE 25

## Nature of Work and Use Level

Nature of Work	Use Level	Number of Subjects
Full-time	10.0	24
Part-time	11.0	9
Seasonal	10.1	3
Does not work	5.4	5

The comparison between dosage level and nature of employment does not give a sharp contrast between dosage levels, but it does give the impression that marihuana use is not related to employment record in another way. Those who do work smoke nearly twice as many cigarettes per day as those who do not, and we can see by the numbers of subjects represented in each category that the full-time workers are in the majority. In frequency of unemployment, the heaviest users are still the most reliable workers, with a mean cigarettes per day figure of 12.4:

TABLE 26

## Periods of Unemployment and Use Level

Periods of Unemployment	Use Level	Number of Subjects
Frequent (several times a year)	8.2	16
Occasional (yearly or less)	8.6	12
None	12.4	13

The gradation between the Frequent and Occasional groups is not significant, but the difference between those who are unemployed and those who are never unemployed is very significant, since it coincides with the difference between moderate and heavy levels of marihuana use in the user sample.

Length of unemployment periods is based on the field worker's estimates of unemployment periods for each subject combined with the subject's own estimate of time spent without work. We find that the differences among the users closely parallels the differences for frequency of unemployment.

TABLE 27

## Duration of Unemployment and Level of Use

Duration of Unemployment Periods	Use Levels	Number of Subjects
Long (more than 1/4 of the time)	8.3	8
Short (less than 1/4 of the time)	8.5	19
None (absent, or interspersed with activity in pursuit of new employment)	12.0	14

Again, those who spend the least time unemployed are the users with the highest levels of marihuana consumption. Such figures lead us to suspect that differences in work history between users and non-users cannot be directly attributed to marihuana use, because the heaviest users

seem to be the steadiest workers. Perhaps cultural factors should be explored in greater detail to ferret out causes for these differences.

Economic activity among the various levels of users is on the whole less easy to interpret than the data for work history. The patterns of income and expenditures for the various levels of users shows that those who smoke the most tend to overextend their expenditures more than those who smoke less. The mean daily consumption for those who spend more than they earn is 11.0 cigarettes per day of marihuana, while those who spend the same amount than they earn smoke 9.7 cigarettes per day. The users who spend less than they earn smoke 7.5 cigarettes per day. These figures may in part be explained by the economic pressures which marihuana consumption places on those who smoke it heavily. Use of this drug is expensive by Costa Rican standards, and those who use it most are most likely to be overextended financially, especially if they are earning working-class wages. At an average cost of one colon per cigarette, those who smoke eleven per day spend nearly 80 colones a week on the drug. If they earn no more than 900 colones per month, then they are spending not less than 25 per cent of their incomes on marihuana. Such users may easily find themselves owing rent or some other payment at the end of each month.

The picture of users' economic activity seems to be confused further by the criterion of material goods and

property ownership. Those users who have accumulated some material wealth smoke an average of 14.3 marihuana cigarettes per day, contrasted with those who do not have material goods or property, who smoke 7.7 per day. This may be interpreted to parallel the income versus expenditures figures given above, because those who overextend their expenditures would also be most likely to maintain installment debts, while those who spend what they earn or less tend not to incur those kinds of debts, spending what extra money they have on marihuana. Passages from the interview materials support this view, as in the case of one individual who smokes relatively little:

What I earn each week is for the home. From that money I set apart, like something really personal, what's mine for the vice (marihuana smoking). That is, from my salary I take out money for food and other necessities of the kids, and what's left over I take for the vice. Let's say I earn 35 colones, then I take five and give 30 to the home.

Providing for his family is the primary financial objective, and what he reserves for himself is usually reserved for marihuana and tobacco. In the case of a very heavy user, who averages more than 20 marihuana cigarettes per day, the story is different:

The truth is that on marihuana I . . . I have a problem that's a little bit beneficial for me, because on marihuana I hardly spend anything. I get it through friends. But at times I've had a situation when I've had to spend in times of scarcity. I economize. I buy a roll.

He has access to large quantities of cheap marihuana, and so his overextension of expenditures known to the research team

is more due to consumer goods accumulation than to marihuana.

Economic activity outside the law probably indicates the access to supplies of marihuana enjoyed by the heaviest users. Among the users, those whose dominant economic activity is illegal or extra-legal in nature smoke an average of 14.5 marihuana cigarettes per day. Those users who participate in this kind of economic activity to supplement their incomes smoke 7.4 per day. Those who do not have any illegal or extra-legal economic activity smoke 8.2 cigarettes per day. Here, we see that the users who tend to have steady jobs from which they derive all of their income smoke slightly more than those who supplement their incomes with illegal or extra-legal activity. The marihuana smokers who have the most access to cheap and abundant sources of the drug are those who are most immersed in the ambience of illegal goings-on. They may be involved in retailing themselves, or they may simply be closer to sources by their association with the San Jose underworld, which is the supplier and distributor of the drug.

At best, comparisons of levels of marihuana use confuse the question as to whether that drug is directly correlated with poor work records and disordered finances. The users with the heaviest levels of marihuana consumption seem to change jobs less frequently than moderate or light smokers and to hold full-time rather than part-time jobs. They are more likely to own material goods and overextend their incomes.

Paradoxically, heavier smokers also are more involved in illegal or extra-legal economic activity than are those who smoke smaller amounts of marihuana. The problem of sorting out these phenomena into a more manageable form requires that we place quantity of marihuana use in question as a differentiating factor for analytical purposes. Individual consumption of marihuana is dictated by relative access to the drug, rather than individual preference in most cases. The user typology we described in Chapter V based on styles of marihuana consumption, may be a more effective way of dealing with the influence of marihuana on adult life.

For the sake of economy in our internal comparisons among the user sample, the pastoralist-escapist and the street mover groups have been combined into a single group because of their similar social positions and stages in life. We observed earlier that the pastoralist-escapist and street mover groups were difficult to study because of the mercurial and disordered lifestyles, and that the stable smokers were relatively easy to locate because they seemed more regular and sedentary. Statistical comparisons between these groups bear out these impressions.

The term street-mover implies that the individual so described is street-wise and very familiar with the street ambience of San Jose. We find that all but one of the street movers in the sample spent their childhoods in the urban atmosphere of that city. Of the stable smokers, 13 were raised in San Jose, while ten grew up either in the rural

areas or in provincial towns. This difference approaches statistical significance ( $p = .10$ ) and ties in with the concept that the street movers had opportunity for immersion in urban street culture at an early age. Significantly (ten to three, or  $p = .05$ ) more street movers were much more likely to have been left to their own devices in the urban environment during childhood.

The smokers' assessment of their childhood behavior provides an evocative comparison between street movers and stable smokers. Most subjects judged their behavior to be neither particularly bad nor particularly good during childhood. Using only the extremes, more stable smokers assessed their childhood conduct as good and more street movers assessed their childhood conduct as bad (four to one). This difference also approaches statistical significance ( $p = .10$ ). School comportment, when added to the general childhood assessment, makes a stronger case for the difference between stable smokers and street movers. Street movers claimed that they were rowdy in school more than the stable smokers to a highly significant (fifteen to seven, or  $p = .001$ ) degree.

A pattern is beginning to emerge here which clarifies a fundamental difference between the two user types. The degree to which users as children embraced the street culture, which provides alternatives to education and the polite behavior which accompanies good classroom manners, determines the extent to which they are able to embrace the

behavior patterns generally accepted by Costa Rican society as normal and correct. Street movers indicate that they had problems with societal standards of behavior very early on.

Childhood delinquency is a powerful differentiating factor between street movers and stable smokers, adding more weight to the argument that the street movers began very early to have difficulties with societal standards for behavior. Street movers tended to have early history of vandalism and thievery to a significantly (thirteen to five, or  $p = .01$ ) greater extent than did the stable smokers at the same age. Even while still in school, many of the street movers were beginning to attract the attention of police and other societal enforcers of proper conduct codes.

Work during adolescence indicates still another factor which sets stable smokers apart from street movers. Significantly (nineteen to seven, or  $p = .05$ ) more stable smokers than street movers held steady jobs during adolescence. The way of life in the streets does not require that one work for a living, but rather than one spend time jugándose, or "playing it out." This means that the true street mover avoids work, as long as he has an "angle" or a scheme to make something out of nothing and obtain life's necessities using unconventional methods which cannot be called work, even though they may be strenuous. For some, this may be shellgame gambling. For others, it may be "watching" parked cars or shining shoes or dealing in small amounts of marijuana. Street movers have usually embraced this way of life by the time they reach adolescence.

We described the street movers as having less stable eating habits than the stable smokers. The degree to which street movers tend to be dissatisfied with their food approaches statistical significance (eight to two, or  $p = .10$ ). This is yet another important reflection of the disordered and mercurial lifestyle which is the way of the street mover.

An important indicator of the order with which an individual manages his adult life is the presence or absence of economic ascent during work history. The difference between street movers and stable smokers in this indicator, based on a combination of life history materials and observation of the subjects at work during two years of the study, is statistically significant at the .05 level of confidence. Stable smokers tend to experience increasing levels of income during their adult work histories, while street movers tend either to remain at the same income level or to drop in earning power as adults. This statistic seems to be the logical consequence of the stable smokers' steadier work history dating from adolescence combined with adult employment patterns, because the worker who establishes a skill and continues to work in that skill will tend to increase his earning power. Stable smokers seem to apply themselves to that pattern of labor advancement, while street movers, who tended to work sporadically or part-time during adolescence, find themselves as adults without a skill and dependent on "playing it out" tactics to earn a living. Continuation of that style of life leads

to stagnation or fluctuation of income which sums out to absence of economic ascent during adult work history.

Full-time versus part-time and other forms of work as an adult also serves to differentiate strongly between street movers and stable smokers. Most stable smokers, 19 of 23, work full-time. Only five of 18 street movers work full-time. This difference is statistically significant at the .02 level of confidence. The pattern to which we alluded earlier now becomes clear. The street mover way of life, whose tendencies to disregard societal standards for behavior began during childhood and adolescence, becomes more marked during adult life, and in many cases is set. Some of the younger street movers may eventually become stable smokers, but others, like Roberto who was mentioned earlier, will remain in that pattern of life indefinitely.

Unemployment frequency and duration both show that the stable smokers are significantly different from the street movers in their approach to work responsibility. Thirteen of the 23 stable smokers have experienced no periods of unemployment during their adult work histories, while only one street mover can make that claim. Street movers tend to be frequently unemployed significantly more than the stable smokers ( $p = .01$ ) and periods of unemployment are significantly ( $p = .02$ ) longer for street movers than for stable smokers. This shows that street movers tend to be unemployed more often than stable smokers, and that they

spend longer periods of time without jobs than stable smokers.

Returning to the final parts of Chapter V, we described the street mover and pastoralist-escapist user types in terms of their recreational approach to using marihuana. This contrasts sharply with the comparatively mundane style of marihuana use which characterizes the stable smokers. This contrast was particularly evident in the users' descriptions of marihuana's effects on work. Stable smokers as a group believe that marihuana smoking has a positive effect on how they function at their jobs. One stable smoker's story of marihuana's effect on work evokes memories of Popeye and his spinach:

Sometimes I'm doing a job in construction and all the time the boss comes by and says to me, "Look, what's wrong with you today that you're so clumsy and you can't mix cement?"

I say "sonofabitch, here comes that billy-goat around to bug me." And one time as he's coming around again, I say "I'll be right back. I'm going to the bathroom." . . . And don't you see I was upset because I couldn't do the work. And I head for a little coffee grove nearby and I smoke three apparati and after a while I've done the work.

And the boss comes by and says "Man, now you did it. You spent a long time at lunch, but that's okay 'cause you got the work done."

This statement is unreserved, and it seems exaggerated, but such claims are not really unusual among the stable smokers.

Street movers and pastoralist-escapists also claim that marihuana has a positive effect on work performance, but not as consistently as do the stable smokers nor with as

great a frequency. They also describe negative effects of marihuana smoking on the job more often than do the stable smokers. One pastoralist-escapist is emphatic in his opinion that marihuana is no good for work:

Interviewer: Do you think that it (marihuana) screws up work or does it come out the same or what?

Subject: No, you draw into yourself. You get into this trip of drawing into yourself. Sure, don't you see that you're into your own trip and if you have to, well, you seem like a zombie. Really it's ugly to work like that. I don't like to work stoned. I like to work straight. After, I'm pooped, then yes. That stuff tastes better.

This individual had a total of six different jobs in the two years during which we maintained contact with him. Those two years also included extended periods of unemployment totalling at least six months. Since his level of marihuana use is somewhat lower than that of the stable smoker cited earlier, we must conclude that something other than the marihuana use is responsible for the contrast between these two individuals' work records.

#### Summary

In this chapter, we have presented a view of the impact of marihuana use on the lives of the users on the basis of various data collected during the study. First, we see that during the times at which marihuana use begins for the chronic user, he is likely to be at a point in life of particular transition and stress, usually adolescence. Pressures and encouragement from his social surroundings coupled

with a strong desire to achieve a psychotropic state with marihuana carry the potential user into a pattern of chronic use. The allure of the drug itself is not a significant factor in this process, as many of the first taste experiences with marihuana smoking are negative or neutral. School records taken for a limited number of subjects do not show a negative influence of marihuana on school performance, but rather point out that eventual chronic users had adjustment problems long before they began to use marihuana. Finally, work history data show that it is not possible to demonstrate a relationship between marihuana use and poor work history, because use level figures seem to show that heavy users are steadier workers than light users. There are social and cultural factors that are of greater importance in determining whether an individual will be a good, reliable worker. In contrasting street movers versus stable smokers, we see that the differences which appeared between user and non-user groups in the crucial work record and economic activity variables may be explained by the presence of the street movers in the user sample. For example, the comparison between stable smokers and non-users for economic trajectory during work history, a life history factor which yielded a significant ( $p = .005$ ) difference between users and non-users in the overall sample, shows that stable smokers and non-users are essentially alike in economic ascent or descent during their work histories ( $\chi^2$  is 1.311; not significant). Likewise, no significant difference shows up in a comparison of

stable smokers and non-users for full-time versus part-time work ( $\chi^2$  is 1.548; not significant). Further, the majority of the user sample is not at all different from the non-user control group in those crucial variables.

The common image of the marihuana smoker known to most Costa Ricans is very close to our description of the street mover. He is uncouth and street-wise. He is given to the vices in general, and will do many things that decent people will not do for money to satisfy those vices. Working is not usually part of his daily activity. This kind of marihuana smoker does exist, and because he is so noticeable, he dominates the average Costa Rican's conception of a marihuana smoker. Such a conception does not take users like Hector into account. Hector is a laborer in a bakery where he has worked for the last three and a half years. He has a wife and two children for whom he is the only means of support. Hector never smokes at home or in the street or in public places. He smokes in the restroom at the bakery, where he works from five in the afternoon until three in the morning. He makes periodic visits to the restroom to smoke marihuana because he claims that he works faster under its effects, and he feels that the night goes by more rapidly. Hector represents the majority of marihuana smokers in our matched pair sample, 23 to 18.

CHAPTER VII  
OTHER ATTRIBUTES OF AMOTIVATIONAL SYNDROME:  
AN OVERALL ASSESSMENT

The two preceding chapters present the relationship between subjective effects of marihuana smoking and the contexts in which the drug is used. The frame of mind of the user at the time he smokes, and the nature of his physical location can strongly influence the kinds of subjective effects obtained. We have seen that marihuana users who wish to control their reaction to the drug in such a way that they can work while under its influence do so, with the result that these workers feel that they are performing more effectively. Nevertheless, work is not the only behavior supposedly affected by chronic marihuana use, and the preceding chapter's argument cannot stand alone to deal with the notion of amotivational syndrome. In the following presentation, the other six attributes of amotivational syndrome will now be examined against the data gathered in Costa Rica to assess the applicability of these attributes to the Costa Rican case.

Psychological testing results for the matched pair sample yielded no essential differences between users and non-users in any of the measures used, including the Cattell 16 Personality Factors (Satz 1976). Some of the 16 factors indicate tendencies which are related to the attributes of

amotivational syndrome. The E factor results, which describe aggressiveness and competitiveness, versus qualities of being docile, easily led, and mild show that the user and non-user groups had average scores which were very close to each other. Average scores for both groups tended to be slightly on the "dominant" side of the E factor scale. This means that a specific measure of passivity versus dominance finds the matched pair sample of Costa Rican marihuana users and non-users to be essentially equal for this personality variable, and that both groups indicate a slight tendency toward aggressiveness, rather than passivity. The L factor of the 16 Personality Factors, which evaluates for trusting versus suspicious personality qualities, also shows no difference between average scores for the user and non-user groups. Both groups indicate a tendency to be more suspicious than the average adult taking the test.

If apathy and passivity were in fact qualities which necessarily accompanied chronic marihuana use, as part of an amotivational syndrome caused by that use, the above-described personality factors would be expected to yield markedly different scores for the user group as opposed to the non-user group. The evidence points to an entirely different conclusion. It may be argued that the difference between the two groups is not brought out by comparing group average scores for each individual factor, and that analysis of the whole group of 16 factors might reveal

differences. Satz performed a multivariate test for all 16 factors, and found no significant difference between user and control groups (Ibid.: XVI-44). The evidence that the group of marihuana smokers are in no way different from the non-users regarding qualities of dominance versus docility and trustingness versus suspiciousness casts serious doubt on the "passivity and apathy" attribute of amotivational syndrome. In fact, the absence of any difference between the two groups in the whole test questions the existence of any "subtle" qualitative personality changes as a result of chronic marihuana use.

Further study of the question of "passivity and apathy" among marihuana users was made during the socio-cultural research. Life history materials contain some material on attitudes which reflect passive versus active approaches to life. When subjects were asked what role destiny played in their lives, the difference between users and non-users in response was not statistically significant. Slightly more non-users (13 to 9) said that "everything is written," meaning that their destinies are already decided by some greater power. Slightly more non-users (19 to 16) said that a man forms his own destiny. Users preferred (12 to 6) to reserve some other opinion in response to this question. Such opinions included "Some things are controlled by fate; others are not" (two users and two controls) "you can't know" (Two users and one control) "God has all the power to decide" (two users) and "you ask for God's help" (two non-users).

The users and non-users demonstrate roughly the same kinds of ambivalences and qualifications toward statements of determinism. In sum, users and non-users do not have markedly different attitudes concerning the influence of fate or destiny in their lives. If this question is taken as an indicator of passivity, it may be concluded that users and non-users claim both to control their own destinies and to be controlled by a higher power at the same rates. There is no differential in determinism between the two groups, so it is not possible to discern different rates of passivity on this basis.

Another kind of information regarding "passivity and apathy" among marihuana users as opposed to non-users was collected by interviewing. Walter Serrano, the project hospital liaison administrator, who ushered the subjects through the medical and psychological segments of the screening and intensive study. Serrano was interviewed at the end of the study in order to obtain his impressions of all 82 subjects. These interviews were open-ended, and impressions in the area of intelligence, promptness and responsibility, business energy, appearance, and degree of pestering for money were elicited for each of the 82 subjects in the study. Serrano's impressions are important, because his contact with the subjects gave him the opportunity to form his own impressions of them based on his middle-class Costa Rican world view. He also had certain contact experiences with the subjects which were unique, because he had to pick these individuals up for hospital

testing at hours when the team anthropologists were not likely to have ever seen the subjects. Early morning and mid-evening testing appointments led Serrano to encounters with the subjects which sometimes brought out qualities or bits of information which might otherwise have been missed. Analysis of Serrano's testimony will be used several times as supplementary information for considering various attributes of amotivational syndrome.

Serrano's ratings for promptness and responsibility in meeting appointments yields an unfavorable comparison between users and non-users. Table 28 shows that significantly more users than non-users received "bad" ratings for

TABLE 28

Ratings for Promptness and Responsibility,  
Including the User Typology

	Good	Bad	Totals
Non-Users	38	3	41
Stable Smokers	20	3	23
Street movers and Pastoralist-escapists	7	11	18
Totals	65	17	82

For users versus non-users  $X^2$  is 8.979;  $p < .01$

For stable smokers versus street movers  $X^2$  is 10.359;  $p < .01$

For stable smokers versus non-users  $X^2$  is 0.563; not significant

For stable smokers versus street movers versus non-users

$X^2$  is 13.996;  $p < .005$

appointment keeping, a result that might lead to the conclusion that users are in some ways more apathetic than non-users. Still, there must be some control for factors other than marihuana use, and the user typology developed in Chapter V is helpful to that purpose. When users are compared with each other, we find that the difference between stable smokers and street mover-pastoralist escapists in Serrano's ratings is parallel to that between users and non-users. Table 28 shows a significant difference between stable smokers and street movers for the same rating variable. When stable smokers are compared with non-users, there is no significant difference, but when all three groups are compared together, the difference is highly significant. This result implies that the loose, sporadic lifestyle of the street movers is responsible for the apparent difference between users and non-users. Given the street movers' already described unattached way of life, it is reasonable to expect that they miss more appointments than the more stable non-users and stable smokers. Therefore, Serrano's ratings may point out a difference between the user and non-user groups, but this difference is not due to marihuana use.

Serrano noted passivity in an equal number of users and non-users (seven and seven) during the course of the interviews, but he pointed out that there were five users who all seemed to have a "far away" look. These individuals all impressed Serrano similarly, because of their "lowered

gaze, unclear thinking, and passiveness." He found this group, who all came from roughly the same part of the San Jose metropolitan area, puzzling in light of his marihuana smoking acquaintances in other parts of the city. Most of the other users known to Serrano were, in his words "alert" and "energetic," "People who answered when you talked to them." Many of the users were described as having chispa (literally, "a spark") and some of the most aggressive characters with whom Serrano worked were marihuana users.

It is difficult to account for Serrano's impression by means of the other data collected on the subjects in question. Four of the five have been termed stable smokers based on their smoking patterns, but only one has a steady work history. Serrano speculates that they "must be smoking a different brand of weed," but this is unlikely, because they depend on different dealers for their supply. No other similarities among these five can be found to explain the phenomenon noted by Serrano. Marihuana is not likely to be the cause of these users' "glassy-eyed" demeanor, because most users in the sample do not share this attribute. Levels of use are unlikely to be a factor in this phenomenon, because the levels of use for the five "far away" individuals cover a wide range (from 2.5 to 20 200 mg. cigarettes per day). Because these impressions are very much in contrast with the other findings of this study, they are worth mention. They appear to confirm one of the attributes of amotivational syndrome. Nevertheless, the overall analysis

of these individuals' behavior does not point out any glaring differences from the behavior of the rest of the users and non-users. The neurophysiological examinations and life history materials do not reveal any notable abnormalities among these five subjects. The "glassy-eyed" demeanor noted by Serrano therefore is not likely to be more than a superficial characteristic of these particular users.

The sentence completion attitudes test administered and analyzed by Krauskopf (1976) for the matched pair sample contains one section which is related to the question of apathy and passivity among Costa Rican marihuana users. In the area of personal image, attitudes toward frustration appear to be no different for the user and non-user groups (Ibid.: XVII-43). Both groups have predominantly passive responses to items that involve ongoing, or constant sources of frustration. In response to immediate sources of frustration, both users and non-users responded in more active and assertive ways. In no case was there a statistically significant difference between the two groups in their reactions to frustration (Ibid.: XVII-45). This result supports most of the other data presented regarding "passivity and apathy" among Costa Rican marihuana users, pointing toward the conclusion that these attributes do not apply to our sample of users.

The marihuana users in San José did not at all resemble the "semi-zombies" described elsewhere. Far from being "passive and apathetic," most users are alert and active,

even when they are not necessarily engaged in honest labor. One subject had a capacity for marihuana smoking which has become legendary among Josefino consumers of the drug, at the same time maintaining a wide range of business activities and a hectic sexual life. Another is a trucking entrepreneur whose business often has him working literally night and day. A heavy-smoking informant too crippled to qualify for the study decided to take a trip on foot in his wheelchair to Mexico. He and his companions managed to reach El Salvador before police problems caused them to turn back. These are not examples of passivity or apathy, yet all of these individuals are, compared to other Costa Rican marihuana smokers, relatively heavy consumers.

"Loss of energy and general state of tiredness" is often attributed to chronic Cannabis users. Chapter VI presents evidence that many Costa Rican users regard marihuana as a source of extra energy. Chapter V illustrated that marihuana's effects have a strong relationship to the values and expectations of the users and the setting in which the drug is used. Given a set of expectations whereby users anticipate an increase in energy upon using Cannabis, it is reasonable that the subjective effects of marihuana use should include increased vigor, rather than lethargy. This does not agree at all with the amotivational syndrome's attribute of lethargy.

Serrano's observations support this interpretation of the Costa Rican pattern of marihuana use. In rating the

users and non-users individually for business energy, Serrano indicates no difference between the two groups. He rated all subjects as either high or low in business energy, and the comparison of the two groups in Table 29 shows no significant difference.

TABLE 29

## Comparison of Users and Non-users for Business Energy

	High	Low	Total
Non-users	15	26	41
Users	16	25	41
Total	31	51	82

$\chi^2$  is 0.052; not significant

Only those subjects who in Serrano's opinion were "constantly busy" trying to "get ahead" either through honest work, or by illegal or extra-legal dealings received a high rating. Subjects whom Serrano judged to be "indifferent" or "lazy" in their approach to work and achievement were given a low rating. The failure of this subjective evaluation to differentiate between users and non-users underlines the conclusions in Chapter VI. The user group, even when it includes those with weak work histories, does not differ from the non-user group in terms of the "lack of energy" attribute.

Chronic tiredness and loss of energy may be related to sleep disorders, so some of Karacan's (1976) analyses of the sleep electroencephalogram data supplied by our subjects may have an application to the "tiredness" attribute of amotivational syndrome. All but four of the matched pairs of subjects slept in the Hospital Mexico for eight consecutive nights, during which their brain activity was monitored by means of an electroencephalographic recording device. Of these 37 pairs, 32 provided data of sufficient quality for analysis of sleep patterns. Karacan's analysis reveals no major disturbances of sleep patterns among users of marihuana (Ibid.: XII-49). The differences between users and non-users on the whole were not judged to have major influence on how well the users rested during nighttime sleep as compared with non-users. These results, coupled with the fact that actually more non-users report serious sleep disturbance than do non-users suggest that if marihuana users are characteristically tired, they do not become tired from lack of restful sleep. Many users, as we saw in Chapter V, believe that marihuana has a positive effect on sleep, and Karacan's results do not negate their subjective view.

During two years of observing Costa Rican chronic marihuana smokers in their natural habitats did not leave the field research team with the impression that these individuals chronically lack energy. Many users were observed playing soccer at full tilt while they were under

the influence of marihuana. Others were accompanied on frenetic, night-long stints of dancing, bar-hopping, and drinking while "stoned." Still other marihuana smokers took field anthropologists on strenuous hikes during which marihuana was smoked. Laborers in heavy construction were seen to work nonstop while under the influence of the drug. These observations were borne out further by the marihuana use interview materials, where users, when asked what they like to do most while "stoned," said that they preferred active, rather than passive activities 27 to seven (cf. Chapter V). The evidence found among Costa Rican long-term users clearly and emphatically negates the "loss of energy, general state of tiredness" attribute of amotivational syndrome.

We return to the 16 Personality Factors to investigate the presence or absence of "depressed, moody state of mind" among the group of Costa Rican chronic marihuana smokers. Factor C, "emotionally stable" versus "directed by feelings" is most applicable to the "depression" attribute. There is no significant difference between the two groups' average scores for this factor, and both groups have average scores which tend toward the "emotionally stable" end of the C factor continuum. According to the theory of amotivational syndrome, marihuana use brings on "personality changes," but the scores for closely-matched users and non-users lead to the conclusion that neither group is particularly governed by emotions. The "personality changes" due to

marihuana smoking are difficult indeed to discern in light of the evidence afforded by a personality defining instrument.

Krauskopf's work with a sentence completion attitude test (1976) administered to the 82 matched subjects in our study is also helpful in assessing the "depression" attribute. The personal identity area of Krauskopf's test elicited attitudes which are indirectly related to depression. Self concept is the most important of these attitudes, and Krauskopf found that a comparison of users and control group responses showed no significant difference between the two groups in how they think of themselves. Slightly more than half of the subjects gave neutral responses to self-image-related items, and users and controls were within five percentage points of each other. Nearly equal numbers of users and non-users gave negative responses for the self image items (about one-third of the sample), and users had positive answers for these items slightly more often than did non-users, 19.8 percent to 17.1 percent (Ibid.: XVII-47). If depression were a reliable characteristic of chronic users, we might reasonably expect that users would demonstrate more negative or neutral self-concept attitudes than their closely-matched controls. Krauskopf finds this not to be true for the Costa Rican test group, and in fact, the users show a slight tendency to look at themselves more in a positive light than the non-users.

Knowing many of the test group for up to two years has led to strong personal impressions about them on the part of the field investigative team. One of the differences noted between chronic users and their controls is sense of humor. Generally, the non-users seem more dour and sedate than the users. Far from being chronically "depressed and moody" the users are able to derive laughter from intrinsically dismal situations more readily than the non-users. Both groups, in an atmosphere of rising prices and low wages, share an economic situation which at times can only be described as desperate. Nevertheless, the user group approaches this and other problems with a verve and acute sense of satire which was generally lacking in the non-user group. One street mover, for example, had this to say about being arrested:

Interviewer: Do you ever pray?

Subject: The last time I prayed, I said, "Dear God, deliver me from this ugly policeman!"

It would be difficult to characterize this individual as chronically "depressed and moody," even though he and his fellow users have much justification for depression or moodiness.

Perhaps our observation of users in a natural environment is partly the reason for our failure to find "depression and moodiness" among the users studied. This attribute has been in other studies observed among users in institutionalized environments. At best, the "depressed" users were clinical outpatients, and at worst, they were mental institution

or prison inmates. Our subjects were approached as normal people, rather than people who were considered either socially or mentally deviant. As normal people, they did not demonstrate notable "depressed" or "moody" states of mind, as would be expected of individuals under the influence of amotivational syndrome.

According to the collected attributes of amotivational syndrome outlined in Chapter I, chronic marihuana users are supposed to suffer from "inability to concentrate, and a decrease in ability to master new material or organize multiple ideas, and an impairment of verbal facility." The work of Satz (1976) in the context of the Costa Rican study of chronic Cannabis use addresses this attribute with several specific testing procedures. Users and non-users were tested for several different varieties of memory, including digit span (series of numbers), story content, figure recognition, form recognition, and facial memory. An abbreviated form of the Wechsler Adult Intelligence Scales (WAIS) was also administered to the matched pair sample, accompanied by other tests designed to detect small decrements in motor function. None of these tests showed significant differences between users and non-users (Ibid.: XVI-33-35). If chronic use of marihuana caused impairment of concentration and the ability to learn new material, a Satz' battery of tests would be expected to pick up a significant difference or two between users of the drug and their closely-matched controls. Some of the sub-tests place

the subjects in learning situations where their performance is scored. The absence of significant differences between the two test groups is a particularly strong negation for the amotivational syndrome attribute of "inability to concentrate, and decrease in intellectual and verbal capacities."

Factor B of the 16 PF test is also related to the relative mental powers of the subject group, and the scores of users compared with those of non-users for factor B also show no difference between the two groups (Ibid.: XVI-44). Factor B places individuals' scores on a continuum between low intellectual ability or orientation and high intellectual ability or orientation. The Costa Rican matched pair sample have very nearly equal mean scores for both user and non-user groups. This result underlines other testing results, because not only are testable intellectual aptitudes and abilities equal for users and non-users, but orientations and personality tendencies are also equal.

Besides the various psychological tests for intelligence and other mental functions, observational data also are helpful in assessing how an individual users intelligence to cope with living situations in the real world. Serrano rated each subject either "intelligent," "average," or "not very bright" during his interview. When these ratings are compared, we find no significant difference between the user and non-user groups, shown in Table 30. Serrano's evaluations of the subjects are important, because, as a fellow Costa Rican he has a perspective on operating

TABLE 30

## Intelligence Ratings for Matched Pair Sample

	High	Average	Low	Totals
Users	16	20	5	41
Non-users	14	19	8	41
Totals	30	39	13	82

$\chi^2$  is 0.159; not significant

in society which is close to that of the subjects themselves. As the person in charge of ushering the subjects through the hospital testing, Serrano saw them in living situations to which the field anthropological team also had exposure. Although the above impressions did not vary appreciably from ours, they still provide another perspective to the problem of relative intelligence in the user and non-user groups.

Decreased verbal capacity has often been the foremost argument in support of the existence of amotivational syndrome among chronic users (cf. Kolansky and Moore 1971; McGlothlin and West 1968). Eliciting life history interview materials from 41 users in Costa Rican has led us to reject this argument altogether. Not only were the users more verbose than the non-users, they were more artful and creative in verbal presentation than their non-smoking counterparts. Included in the rich volumes of personal information

of the transcribed life histories, there is a fascinating contribution of idiomatic Spanish lexicon. Pachuco, the street argot used by street movers and others familiar with street life, is a colorful and inventive example of the marihuana users' verbal facility. A dictionary of pachuco expressions containing 1500 items has been compiled on the basis of the life history materials alone, but this collection only scratches the surface of the rich and varied patterns of Josefino street talk.

Street slang is not the only verbal medium used by marihuana smokers. Most are capable of expressing themselves in polite, literary standard Spanish, and they demonstrate no impairment of this facility. Very early in the study, users would "show off" their ability to mask the effects of marihuana by talking backwards, or in the Costa Rican varieties of "pig latin" (cf. Chapter V). Talking backwards involves reversing syllabic order for all words of more than two syllables, a process which some marihuana smokers employ when they wish to exclude an outsider from private conversation. For example, the utterance, "Los valuchas en el quepar tralcen se la maque," which means, "The boys in the Central Park smoke dope" is the pachuco equivalent of the regular Spanish utterance, "Los chavalos en el Parque Central se la quema." The bantering quality of conversation among Costa Rican marihuana users clearly contrasts with the sullen, taciturn impression of verbal communication often described for North American users.

The Costa Rican evidence emphatically rejects "impairment of verbal capacity" as an attribute of chronic marihuana use.

"Slovenliness and lack of concern for personal hygiene" have been attributed to chronic Cannabis use by researchers both in the United States and in more ancient use traditions. Walsh in India (1894) and Warnock in Egypt (1903) both describe slovenliness among chronic Cannabis users. Williams, et al. (1946) also note this behavior in the context of their hospital experiment. Costa Ricans generally are notably clean and fastidious and the matched pair sample is no exception to the national tendency. Many of these working class men take a bath, which consists of an icy cold shower in the morning, every day. Under such conditions, many of the North Americans who bathe daily might not be so regular in showering. A comparison of bathing habits as reported in the life history materials between users and non-users shows no significant difference between the two groups.

Personal appearance is important to Costa Ricans in general, and the crowds of San Jose, compared with those of Guatemala City or San Salvador, give strong visual testimony to that fact. There were few "fashion plates" among our matched pair sample, but practically all were clean, and most were neatly dressed. We asked Serrano, whose Costa Rican tastes would be useful in evaluating this topic, to rate each of the matched pair subjects for

personal appearance. Table 31 shows the results of this rating process. No significant difference between users and non-users can be discerned by this comparison.

TABLE 31

## Rating of Personal Appearance for Users and Non-Users

	Good	Average	Poor	Totals
Non-users	14	20	7	41
Users	16	17	8	41
Total	30	37	15	82

$\chi^2$  is 0.443; not significant

The data for evaluating the neatness of living-space for the matched pair sample are difficult to evaluate, as the matched pair sample differs substantially in the kinds of housing they occupy. Seventy-eight percent of the non-users live in single family houses, while 63 percent of the users occupy comparable facilities. On the other hand, more than seven percent of the non-users live in squatter shacks, compared with two-and-a-half percent of the users. The housing units, then, are not entirely comparable for the two groups, and the tidiness of a dwelling depends in part on its quality of construction and ease of upkeep.

No significant difference appears in a comparison of users and non-users for living-space neatness, but this

does not mean that users and non-users keep equally tidy houses. Some of the younger subjects who live at home really have no control over the state of neatness where they live, because that is their mothers' concern. Subjects who live with a woman may also be relatively ineffective in matters of housekeeping, and many complain that their women are not very neat housekeepers. The only subjects who have any control over the neatness of their living-space are those who live alone, and in this category user and non-user alike have unkempt rooms. Neatness of living space, therefore, is not good criterion for judging whether or not users of Cannabis in Costa Rica are more slovenly than non-users, as home upkeep is clearly out of the hands of males in Costa Rican society. In fact, only one subject in the entire group of 82 reported that he cooked or cleaned the house.

Finally, the seventh attribute of amotivational syndrome as described in the existing literature is "dedication of all available resources to procuring more Cannabis." Serrano's interview materials contain reports on the degree to which each subject pestered him for extra money during the course of the various medical and psychological tests, for which each subject was paid in compensation for lost working time. Serrano was in charge of many of the minor payments, and he also had some other financial dealings with the subjects. He rated each subject either as "bothersome in money matters" or "not bothersome in money matters."

The former rating was given to those subjects who constantly pestered Serrano for small loans or extra compensation for their participation in the project. Those who required extra compensation in order for their earnings to approach what they would normally make at their work were not given a "bothersome" rating. The results are shown in Table 32.

TABLE 32

Rating of Subjects in Money Matters, Including User Typology

	Bothersome	Not bothersome	Total
Non-users	11	30	41
Stable smokers	9	14	23
Street movers- Pastoralist-escapists	13	5	18
Totals	33	49	82

For users versus non-users  $X^2$  is 6.136;  $p < .02$ .

For stable smokers versus street movers-pastoralist-escapists  $X^2$  is 4.443;  $p < .05$ .

For stable smokers versus non-users  $X^2$  is 1.035; not significant.

For stable smokers versus street-movers-pastoralist-escapists versus non-users  $X^2$  is 13.146;  $p < .01$ .

This represents a significant difference between users and non-users which may imply that users do in fact dedicate more available resources to marijuana; twice as many as the non-users were bothersome in money matters.

Before concluding that the seventh attribute of amotivational syndrome applies to the Costa Rican case, we shall compare the user types to investigate the role of life style in the unfavorable comparison of users and controls. The two pastoralist-escapists will be "lumped" with the street movers for the purpose of comparison. Table 32 also shows that Serrano's ratings for the stable smokers differ significantly from those given for street mover-pastoralist-escapists in money matters. This outcome mirrors other comparisons between user types presented in the preceding chapter. Stable smokers are steadier workers than the street movers, and they are less likely to pester outside sources for extra money. Returning to the comparison between users and non-users for Serrano's ratings, we cannot attribute the financial difficulties of the users as a group to their marihuana use, because other cultural factors influence the economic behavior of a recognizable subgroup among the users more strongly than the marihuana use itself. Street movers pester for money because they learned while still children to exploit every possible resource in order to survive. During the course of the marihuana study, Serrano became one of the exploitable resources.

In order to solidify the conclusion that life style factors are more important than marihuana use in determining differences in money matters ratings, Table 33 was devised to compare marihuana dosage levels with those ratings. The dosage levels among matched-pair users were broken into

three categories: low (2.5 to 4.4 cigarettes per day), medium (4.4 to 9.2 cigarettes per day) and high (10.0 to 40.0 cigarettes per day). We find that there is no significant difference among the three levels of marihuana intake in money matters ratings. Therefore, marihuana consumption probably was not the factor which caused Serrano to arrive at his impressions regarding financial "peskiness" and the user group.

TABLE 33

## Marihuana Dosage Levels Versus Money Matters Ratings

	High	Medium	Low	Totals
Bothersome	6	6	6	18
Not bothersome	7	7	9	23
Totals	13	13	15	41

$\chi^2$  is .144; not significant

Long observation of users in the field demonstrated repeatedly to the anthropological team that lack of marihuana, even to the heaviest smokers, did not cause undue distress or desperation among the users. Many times, users who had unsuccessfully canvassed the neighborhood suppliers of marihuana were seen to shrug and say, "Well, there doesn't seem to be any around. I guess I'll go home to bed." Only three of the 41 users in the final sample reported any adverse

reactions to not having marihuana. One relatively light user reported leg cramps. The heaviest user in the sample reported "chills." A moderate smoker claimed to have nightmares when no marihuana was available. Overall, the user group does not give the impression of crazed "addicts" who think constantly about where they will obtain their next moto ("joint").

On the basis of the Costa Rican evidence, we must reject "dedication of all available resources to procuring more Cannabis" as an attribute of users in that country. Costa Rican users do not necessarily deplete their economic resources in order to obtain marihuana, and they do not react notably when marihuana is not available.

The seven attributes of "amotivational syndrome" with the minor exception of five smokers with a "far away" look in their eyes as described by Serrano, are rejected by data on the Costa Rican chronic users in our study sample. The reasons for this rejection are apparent in the research design. The collection of a large and varied body of medical and psychological data on each subject allows for many possible influencing factors, such as general state of health and presence or absence of sleep disorders, to be taken into consideration in comparing user and non-user groups. The influence of cultural factors, such as socioeconomic status, family environment, and educational level is minimized by the matching process used to select the final sample. Other drug use by the subjects was also taken

into account, either by control in the matching process, as with alcohol and tobacco, or by elicitation of other drug use data. The sample was not an institutionalized one, and they were treated as normal people throughout the study, thereby eliminating the prejudices that can occur in studying stigmatized groups. Finally, the use of anthropological field researchers led to achieving sufficient grasp of the cultural patterns of Costa Rican marihuana use to detect important nuances and variations which are likely to escape other kinds of research designs. When all of the possible influencing factors are taken into account, and the data are analyzed, marihuana use itself cannot be seen as directly responsible for any of the problems in social and psychological adjustment found among Costa Rican users. Combined with the absence of measurable differences between users and non-users as shown by other phases of the overall Cannabis use study, this fact provides very strong evidence refuting the existence of amotivational syndrome among Costa Rican marihuana users.

The cultural values attached to any pattern of psychotropic drug use are extremely important in determining the consequences of that use for the society in which it is found. Wilbert (1973) reports that tobacco use among South American Indians is largely ritual in nature, and regarded as unpleasant, but necessary. For these Indians, the convulsions and comatose state brought on by powerful infusions of concentrated tobacco syrup are a step toward achieving

a ritual psychotropic state of sufficient intensity for divination and spirit communication. Similarly, Castaneda (1968) describes a Yaqui shaman's use of datura, mescaline, and psilocibin mushrooms for the purpose of achieving ritual psychotropic states. Both the South American and the Yaqui patterns of drug use employ drugs far stronger than marihuana, yet their users, instead of being considered as social deviants, are honored as especially wise and useful to their society.

The above examples of drug use describe patterns that are not accessible to the population at large, because shamans are specialists in ritual. Burchard (1973) describes a pattern of coca use which is practiced by a large segment of the Andes population. Coca, a relatively mild psychotropic chewed throughout the Andes, is part of a cultural system in which food and coca interact as complementary media of exchange. In addition to its function in social and economic contexts, coca may also serve to aid in the digestion of complex carbohydrates (Ibid.). Coca leaf chewing is an example of a generalized societal practice which has positive values attached to it, such as the leaf's exchange worth when it accompanies food exchange, and its reputed effects of helping to withstand Andean cold and giving work stamina. When positive cultural values are attributed to use of a mild drug by society at large, then the negative consequences become difficult to find, and this is particularly true of Andean coca chewing.

Tobacco in the United States is an example of generalized drug use to which mixed positive and negative values are attached. It has been found conclusively to be physiologically harmful to the user, and this is a definite negative value. Even so, values of sexual attraction, social interchange, and narcissism, connected to tobacco by its promoters, manage to maintain a broad segment of the American population as regular customers. Easy access to this mild psychotropic has made the social consequences of tobacco use negligible, even though health consequences are increasingly noticeable.

Costa Rican marihuana use also has mixed cultural values attached to it, but unlike North American (or for that matter, Costa Rican) tobacco use, social difficulties plague the Costa Rican marihuana smoker. He is forced by societal sanctions either to hide his use or to be identified as a deviant and assumed criminal if he smokes openly. Until March of 1974 when the health statute governing marihuana was changed, the Costa Rican smoker maintained his habit at the risk of arrest and a six-month jail sentence. He is still largely at the mercy of the poorly-trained and sometimes brutal squad of narcotics police. The Costa Rican users pay high prices for their drug of preference, because its sale and distribution are in the hands of dishonest traffickers. All of these problems are consequences of negative values imposed on a pattern of drug use by the greater, non-marihuana-using society.

Positive values assigned to marihuana consumption by the users themselves help to maintain the pattern of marihuana smoking in Costa Rican society. These values vary somewhat among the various kinds of users who comprise the majority of the illegal drug using population. Street movers, as we saw in Chapter V, approach marihuana use as a pleasure-giving respite from an existence full of frustration in which they are set apart from the rest of society. Marihuana is also a shared experience which contributes to the cohesiveness of informal social contacts and gives individuals who otherwise lack familial social connections needed group membership. Stable smokers attach positive values to marihuana use which allow them to practice some of the responsibility expected of non-deviant Costa Ricans. Marihuana helps work performance, according to the stable smokers, and otherwise makes daily work routines more bearable. The fact that the heaviest smokers are also the steadiest workers attests to the validity of this positive value for those who believe it.

Researchers studying other cultural patterns of marihuana use which may be related historically to that of Costa Rica arrive at similar conclusions about the connection between marihuana use and work. Partridge (1974) found the smoking of marihuana to be an integral part of work party cohesion among rural Colombian workers. Schaeffer's (1973) elaborate videotape analysis of Jamaican fieldworkers' behavior led to the same conclusions about Jamaican ganja

use and work. In both the Jamaican and Colombian settings, societal imposition of negative values on Cannabis use is beginning to create problems similar to those found in Costa Rica.

Marihuana effects, as demonstrated in Chapter V, are particularly susceptible to the contexts, both mental and physical, in which the drug is smoked. The expectations of marihuana users often mold the subjective effects derived from the smoking experience. Costa Rican, Jamaican, Colombian, Indian, and Moroccan Cannabis users have expectations of their drug which are very different from those of the new wave of North American users. The latter also smoke marihuana in a distinct cultural context, but in their case, the expectations of intensified sensation, expanded mental powers, and ritualistic social interaction replace those of respite from a dreary existence or increased working capacity or complete oblivion. The values attached by young North American Cannabis users to their drug consumption are closely tied to the value system of the subculture which led them to adopt marihuana use. This subcultural value system includes a negation of achievement and industry values held by the society at large.

Researchers have often mistaken the subcultural negation of achievement values as an amotivational syndrome caused by marihuana use. Analysis of Costa Rican patterns of marihuana use, taking into account subcultural variations in work values and life styles, fails to find apathy and

passivity, loss of productivity, chronic tiredness, depression and moodiness, impairment of intellectual function, sloth and slovenliness, or dedication of all available resources to Cannabis procurement, among the user sample studied. This evidence points out that marihuana is not the cause of failures to adjust to the values of the society. Rather, its use is a symptom of more profound difficulties in the process of becoming a part of that society.

## GLOSSARY

- ANDAR CON PINTA (go around with paint) To be identified as an "antisocial" person.
- BARRA (bar) Gang.
- BARRIO City neighborhood.
- BOLEROS Soft, rhythmic Latin songs, usually with romantic themes.
- CABLE (wire) Message delivered to the outside on behalf of a prison inmate.
- CACHIMBA Pipe used to smoke marihuana.
- CAFETAL Coffee plantation.
- CAJA DE FÓSFOROS (matchbox) Device used to smoke marihuana cigarettes.
- CAMARONEAR (to "shrimp") To find part-time work on an ad hoc basis.
- CANCHAC Corruption of the Indian-Jamaican word ganja meaning Cannabis. (See also: ganja.)
- CAREBARRO (actually "cara de barro," meaning literally "mud-face") Scoundrel, rascal, shameless person.
- CHAPAS (bottle caps) Pachuco term for a gambling fraud akin to the shell game, using a small wad of paper and three bottle caps. Two confederates work together to convince a stranger to bet on the outcome of cap-shifting maneuvers.
- CHISPA (spark) Verve, personality, vivacity.
- CHUSMA Underworld, the unsavory element of society, a gang.

- COCO SECO (dry coconut) Implement used to test marihuana.
- CUMBIA A variety of dancing music originating in Colombia which usually has an emphatic four-beat metre.
- DATURA A strong variety of psychotropic plant found in abundance in Costa Rica, but seldom used by Costa Rican drug consumers. (Called locally "Queen of the night.")
- DESCUIDO (unguarded object) Euphemism for stolen goods.
- EMPANADAS Small, fried turnover-style pies filled with meat or cheese, often sold on the streets by ambulatory vendors.
- EN LA CALLE (in the street) Hopeless, without a chance of success.
- GALETA Runner who serves a drug vendor.
- GALLO (rooster) Snack food consisting of a tortilla topped with cabbage, tomato, and either a hard-boiled egg or some kind of sausage.
- GANJA Indian term for a Cannabis preparation consisting of compressed resin and plant material. In Jamaica, ganja is the generic term for Cannabis. (See also: canchac.)
- HACHÍS (hashish) Term for stronger preparations of Cannabis.
- HONDA (wave) Term for the marihuana-derived state of intoxication.
- JOSEFINO Resident of San Jose, Costa Rica.
- JUGARSELA (to play it out) To make a living by one's wife, or to maximize one's resources by astute business practices.
- LA LLEVO EN LA JUPA (I carry her in my head.) Rather than carrying marihuana on their person, many users prefer to smoke in a safe place and carry only the effects of the drug around in their heads.

- LA NEGRA (the black) Name of a dark variety of marihuana reportedly grown in the province of Limon.
- LA RUBIA (the blonde) Name of a light-colored variety of marihuana reportedly grown in the province of Limon.
- MATAR LA TOCOLA (to kill the touch) To finish a marihuana cigarette butt.
- MOTA Mexican term for marihuana material.
- MOTO Marihuana cigarette.
- MUERTE BLANCA (white death) Stereotyped adverse reaction to marihuana smoking, involving dizziness, nausea, cold chills, and a sense of panic.
- MULETA (crutch) Matchstick, or piece of wood used to hold the last remnants of a marihuana cigarette. (See Figure B.)
- NERVIOS (nerves) Generic term used in Costa Rica for a wide range of nervous or emotional disorders.
- PAMBELE Name of the current world light welterweight boxing champion given by Costa Rican smokers to a strong variety of marihuana reputed to come from Colombia.
- PICADURA Chopped, dried material of the marihuana plant.
- PINTA (paint) Identification as an unsavory element of society.
- PIPA DE AGUA Water pipe used to smoke marihuana. (See Figure B.)
- PIPA DE PAZ (peace pipe) Wooden marihuana cigarette-holder. (See Figure 2.)
- PUESTO (booth) A "bank" formed by a group of young marihuana smokers in order to buy greater quantity at a lower price.
- PURA VIDA (pure life) "Great," "groovy."

PURO (cigar) Large marihuana cigarette made from the contents of several street-sized cigarettes.

ROLLO (roll) Unit of 25 marihuana cigarettes commonly sold on the street in a tightly-packed roll.

SAMOLEÓN Peeping tom.

SAN MIGUELITO A strong, brown variety of marihuana reputed to come from the Panamanian island of San Miguel.

SON UN MONTÓN DE CAREBARROS QUE NO RESPETAN NI A SUS DOÑAS NI A SUS CACHORROS They are a bunch of mud-faces who don't respect either their ladies or their pups.

SUSTO A strong state of fright, akin to shock.

TACO Use of a tobacco cigarette to finish the end of a marihuana cigarette. (See Figure B.)

TOQUE (touch) A "drag" from a cigarette (either marihuana or tobacco).

TUANIS Groovy.

VARA (bar) Unit of measurement used in Costa Rica to give directions, measuring 33 inches, or 1/100 of a city block.

VICIO Vice, bad habit.

VINO Voyeur, "nosey" person.

## APPENDIX

Two different tests of significance are used in Chapters V and VI. For simple four- and six-cell cross tabulations, Chi-squares were calculated using the formula:

$$\chi^2 = \frac{(f_o - f_e)^2}{f_e}.$$

Scores for p were then found on a standard chi-square table. Chapters VI and VII contain p-scores obtained in this manner.

Tables 9 and 15 in Chapter V contain p-scores that are exactly computed using the formula:

$$P[rN] = \frac{N!}{r! [N-rN]!} \times p^r q^{N-r}.$$

The p-scores, in this case, do not assume a normal distribution of outcomes, but rather express the actual probability of the occurrence of the distributions found in Table 9 and 15. Only very low probabilities are selected for comment in the text.

Because of a general absence of low p-scores in the comparison of Cannabis users and non-users, all of the p-scores which approached the .05 tolerance level are also mentioned in the text. None of the other 300 items in the sociocultural cross-tabulations came anywhere near the .05 level.

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## BIOGRAPHICAL SKETCH

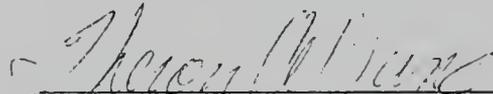
Born on October 10, 1947, Bryan Page has spent much of his life travelling. His father's work as a special agent of the Federal Bureau of Investigation necessitated frequent moves during Page's first six years. After living in Charlotte, Baltimore, Chicago, San Juan, and Miami, the Page family settled in St. Augustine, Florida, where Bryan graduated from high school. He then attended the University of Florida from 1965 to 1969, majoring in anthropology. During that time, travel to Latin America was made possible by Page's participation in choral groups and his family's residence in Mexico City.

Page graduated from the University with high honors, also being elected to Phi Beta Kappa and Omicron Delta Kappa. After a six-week pleasure tour of Europe, he entered graduate school at the University of North Carolina with the help of a Woodrow Wilson Foundation fellowship. He earned his Master's degree in anthropology by early 1971. A teaching assistantship helped to finance Page's last months at the University of North Carolina. The decision to become a Latinamericanist led him to re-apply to the University of Florida for doctoral work in anthropology. Before returning to the University, he spent three months in

Europe on a concert tour with the North Carolina Chamber Singers.

In 1972, Page was hired by the Urban and Regional Development Center at the University to work as the assistant to Carl Feiss. At the end of the summer of 1973, he became part of the University's study on chronic Cannabis use, in San Jose, Costa Rica. His experience in the field yielded the data which is the basis for his doctoral dissertation.

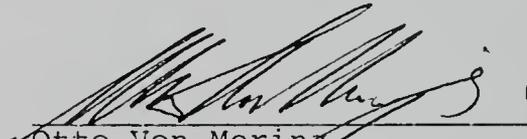
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Theron A. Nunez  
Associate Professor of  
Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality as a dissertation for the degree of Doctor of Philosophy.



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Otto Von Mering  
Professor of Anthropology

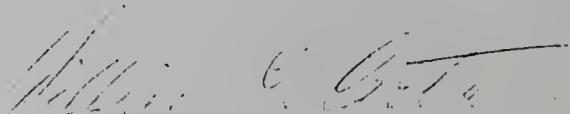
This dissertation was submitted to the Graduate Faculty of the Department of Anthropology in the College of Arts and Sciences and to the Graduate Council, and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June, 1976

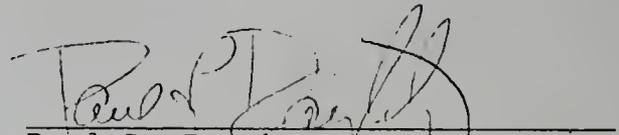
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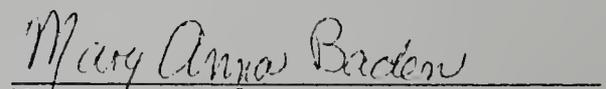
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William E. Carter, Chairman  
Professor of Anthropology

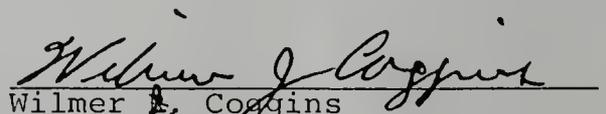
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\_\_\_\_\_  
Paul L. Doughty  
Professor of Anthropology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality as a dissertation for the degree of Doctor of Philosophy.

  
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Maryanna Baden  
Assistant Professor Sociology

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality as a dissertation for the degree of Doctor of Philosophy.

  
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Wilmer E. Coggins  
Professor of Community Health