A COMPARISON OF MARIJUANA USERS AND NONUSERS WITH RESPECT TO CONFORMITY PRESSURE

by Dorothy Thornton

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CURRICULUM STUDIORUM

Dorothy Thornton was born in Clear Lake, South Dakota, on April 26, 1925. She received her Bachelor of Music degree from the University of Toronto, in 1950. She received the Master of Arts degree in Psychology from the University of Toronto, in 1964. The title of her thesis was Direction of Social Comparison as a Function of Goal Valence and Assumed Similarity.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

REVIEW OF THE LITERATURE

The following chapter includes, first, a review of the literature relevant to the problem that is being considered. Following the review of the literature and the development of the argument on which the hypotheses are based, the statement of the problem is presented. The research hypotheses suggested by the problem are then outlined. Last, a statement of the purpose of the research appears.

1. Conformity

In the study of social behaviour, much attention has been paid to the existence of group norms and the pressures that the group exerts on its members to conform to such norms. There are many situations in which the individual may find himself confronted with a choice between the conflicting norms of two groups in which he has, or desires membership. One such conflict occurs frequently in young people: the conflict between peer and authority norms. The direction in which such conflicts are resolved depends on a variety of historical and situational factors which, together, make the individual more susceptible to one source of conformity pressure than to the other.

A number of investigators have paid attention to the peer pressures that impinge on individuals. Beginning with

the well-known investigations of Asch[1] and Crutchfield[2], the conformity-inducing effect of peers has been well established, both in face-to-face situations and in situations where less direct conformity pressures are operating.

Asch[3] used experimental accomplices to produce a face-to-face group in which a naive subject was exposed to a disagreeing and clearly incorrect majority on certain critical trials. A discrimination task was used, in which participants were required to match the length of a standard line with one of three unequal lines. Judgments were made publicly and the naive subject always responded last. Under conditions in which the naive subject was faced with a unanimously disagreeing majority of at least three individuals, convincing evidence was obtained of the effect of peer pressure on perceptual judgment.

Crutchfield[4], on the other hand, devised a technique for simulating an incorrect and disagreeing majority by means of experimenter-controlled light signals. In such a simulated group, conformity takes the form of norm acceptance, rather than of yielding

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1 Solomon E. Asch, "Studies of Independence and Conformity: I. A Minority of One Against a Unanimous Majority", in Psychological Monographs, Vol. 70, No. 416, 1956, 70 p.

2 R. S. Crutchfield, "Conformity and Character", in American Psychologist, Vol. 10, 1955, p. 191 - 198.

3 Solomon E. Asch, op. cit., p. 3.

4 R. S. Crutchfield, op. cit., p. 191 - 198.

to direct interpersonal pressures. Crutchfield noted that, under such circumstances, peer conformity, or norm acceptance, did not occur on all tasks. Subjects were independent of conformity pressures on items of personal preference. In a later investigation, however, Allen & Levine[5] did obtain peer conformity on such items. It would appear, therefore, that norm acceptance, as opposed to yielding to direct interpersonal influence, occurs on a broad range of tasks. Where conformity takes such a form, it would also appear that the influence of the group, rather than the particular task, may provide for the stability of reaction that makes such compliance more than a transitory phenomenon.

The above researches involved conformity as observed in the laboratory. Peer conformity influences, as Ausubel[6] has observed, are also prevalent outside the laboratory, particularly in preadolescence and adolescence. The influence of peers on the attitudes and values of children is well established. Bjerstedt[7] observed reduced ethnocentrism in eleven-year-olds following a summer of living in international camps. Campbell & Yarrow, in their well-documented field study,

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5 Vernon L. Allen and John M. Levine, "Social Pressure and Personal Preference", in Journal of Experimental Social Psychology, Vol. 7, 1971, p. 122 - 124.

6 David P. Ausubel, Theories and Problems of Child Development, Grune and Stratton, New York, 1957, XVII - 580 p.

7 A. Bjerstedt, "Informational and Noninformational Determinants of Nationality Stereotypes", in Acta Psychologica, Vol. 18, 1961, p. 11 - 16.

8 J. D. Campbell and M. R. Yarrow, "Personal and Situational Variables in Adaptation to Change", in Sociometry, Vol. 14, No. 1, 1958, p. 29 - 46.

reported that two weeks of equalitarian contact in a racially integrated summer camp produced a significant reduction in feelings of social distance between black and white pre-adolescents, as measured by friendship preferences. Carey[9] has noted that children's peers influence their religious behaviour in terms of church attendance. Coleman[10, 11, 12] observed that in schools where academic achievement is valued by the peer group, academic excellence is more closely related to capacity than in schools where academic performance is less valued. Hill[13] has reported that the peer group conformity motive can be instrumental in changing

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9 Raymond G. Carey, "Influence of Peers in Shaping Religious Behaviour", in Journal for Scientific Study of Religion, Vol. 10, No. 2, 1971, p. 157 - 159.

10 J. S. Coleman, "The Adolescent Subculture and Academic Achievement", in American Journal of Sociology, Vol. 65, 1960, p. 337 - 347.

11 --------, "Social Climates in High Schools", U. S. Officer of Education Cooperative Research Monograph No. 4, 1961, OE - 33016, quoted by John D. Campbell, "Peer Relations in Childhood", in Martin L. Hoffman and Lois Wladis Hoffman, (Eds.), Review of Child Development Research, Russell-Sage Foundation, New York, 1964, p. 289 - 322.

12 --------, The Adolescent Society, Free Press of Glencoe, Glencoe, Ill., 1961, XVI - 368 p.

13 David Hill, "Peer Group Conformity in Adolescent Smoking and its Relationship to Affiliation and Autonomy Needs", in Australian Journal of Psychology, Vol. 23, No. 2, 1971, p. 189 - 199.

adolescents' attitudes toward smoking. Wilson[14] studied the influence of the predominant values of membership groups on the educational, occupational and political values of high school students. While parental status characteristics did influence values, it was clear that when these variables were controlled the bulk of the students in a school influenced the values of individual students, even when their parents came from different social strata than the majority. Zellner[15] noted that conformity pressures among high school students influence attitudes towards various health issues. Rosenberg[16] has reported on a negative aspect of peer influence. His data reveal that high school students, if they are reared in a neighborhood in which the predominant religious affiliation differs from that of their own family, are likely to have low self-esteem, report psychosomatic symptoms, and have feelings of depression.

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14 A. B. Wilson, "Residential Segregation of Social Classes and Aspirations of High School Boys", in American Sociological Review, , Vol. 24, 1959, p. 836 - 845.

15 Miriam Zellner, "Self-Esteem, Reception, and Influenceability", in Journal of Personality and Social Psychology, Vol. 15, No. 1, 1970, p. 87 - 93.

16 M. Rosenberg, "The Dissonant Religious Context and Emotional Disturbance", in American Journal of Sociology, Vol. 68, 1962, p. 1 - 10.

Forman[17] has presented interesting evidence that peer conformity pressures influence a wider variety of responses among adolescents than those related to value systems. In a report on social behaviour in an institution for adolescent retardates he observed that peer group influence can enhance the learning of social skills in such institutions.

Although Ausubel[18] seems to suggest that peer group influences become less pronounced with increasing maturity, a number of investigators have noted the operation of peer group pressures among university students. Their results indicate that the tendency to conform to peer group standards in a wide variety of behaviours can persist through late adolescence and young adulthood. Allen & Braggs[19] reported peer group influence on the formation of concepts. Gardner & Taylor[20] found that simulated peer group pressures

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17 Mark Forman, "Social Intelligence and the Institutionalized Adolescent Retardate: the Influence of the Informal Social System", in Mental Retardation, Vol. 8, No. 2, 1970, p. 12 - 16.

18 David P. Ausubel, op. cit., p. 302 and p. 304.

19 V. L. Allen and B. W. Braggs, "Effect of Social Pressure on Concept Identification", in Journal of Educational Psychology, Vol. 59, No. 4, 1968, p. 302 - 308.

20 R. C. Gardner and Donald M. Taylor, "Ethnic Stereotypes: Their Effects on Person Perception", in Canadian Journal of Psychology, Vol. 22, No. 4, 1968, p. 267 - 276.

influence ethnic attitudes. Gruen[21] noted a tendency to respond to conformist pressures in the evaluation of consumer products. Three investigators, Hollander & Willis[22], Madden[23], and Mausner[24], have found that the aesthetic judgments of university students are subject to peer influence. Scioli[25] noted a change in attitude toward political candidates in response to peer group pressure. Weiner & McGinnies[26] obtained conforming responses in group judgments

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21 Walter Gruen, "Internal and External Conformity and Some Common American Attitudes", in Psychological Reports, Vol. 8, 1961, p. 368.

22 E. P. Hollander and R. H. Willis, "Conformity, Independence and Anticonformity as Determiners of Perceived Influence and Attraction", paper read at Eastern Psychological Association, Philadelphia, Pa., April, 1964, quoted by E. P. Hollander, Leaders, Groups and Influence, Oxford University Press, New York, 1964, p. 161 - 178.

23 Joseph M. Madden, "Personal Preferences and Conformity", in Journal of Social Psychology, Vol. 52, 1960, p. 269 - 277.

24 B. Mausner, "Studies in Social Interaction: III. The Effect of Variation in One Partner's Prestige on Interaction of Observer Pairs", in Journal of Applied Psychology, Vol. 37, 1953, p. 391 - 393.

25 Frank P. Scioli, "Conformity in Small Groups: the Relationship Between Political Attitude and Overt Behaviour", in Comparative Group Studies, Vol. 2, No. 1, 1971, p. 53 - 64.

26 Harold Weiner and Elliott McGinnies, "Authoritarianism, Conformity, and Confidence in a Perceptual Judgment Situation", in Journal of Social Psychology, Vol. 55, 1961, p. 77 - 84.

of facial expression. Hollander[27], in a study of the relationship between leadership and conformity, observed group tendency to conform to procedural norms in a problem-solving task. He reported that only highly competent members with a record of strong support for existing group norms can afford to introduce new norms. These results suggest not only that peer pressures operate among university students, but also that peer norms in student groups are very powerful.

While the evidence cited above indicates the significance of peer conformity pressures, there is also some evidence that preadolescents, adolescents, and even young adults can be highly subject to pressures from authority figures. Flanders & Havumaki[28] tested the extent to which an adult can influence sociometric status of specific children. When seventeen groups of tenth-grade students met for a single discussion with an unfamiliar teacher-trainer, the teacher gave praise for participation to those seated in odd-numbered seats. The praised students subsequently received

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27 E. P. Hollander, "Competence and Conformity in the Acceptance of Influence", in Journal of Abnormal and Social Psychology, Vol. 61, 1960, p. 365 - 369.

28 N. A. Flanders and S. Havumaki, "The Effects of Teacher-Pupil Contacts Involving Praise on the Sociometric Choice of Students", in Journal of Educational Psychology, Vol. 51, 1960, p. 65 - 68.

more sociometric choices than others in the groups.

Authority influence also occurs at the university level, although it is sometimes modified by individual differences or situational variables. Blake & Heslin[29] and Bruehl & Solar[30] have noted the well-known "Rosenthal Effect"[31] among university students. Both investigators obtained evidence that, in an experimental situation, students would conform to what they believed to be the experimenter's expectations. Centers & Horowitz[32], in a comparison of other-directed and inner-directed students, administered a short form of the California F Scale[33], together with the supposed responses of "well-known and important people". Conformity responses were reported in

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29 B. F. Blake and R. Heslin, "Evaluation Apprehension and Subject Bias in Experiments", in Journal of Experimental Research in Personality, Vol. 5, 1971, p. 57 - 63.

30 Dieter Bruehl and Diana Solar, "Systematic Variation in the Clarity of Demand Characteristics in an Experiment Employing a Confederate", in Psychological Reports, Vol. 27, No. 1, 1970, p. 55 - 60.

31 R. Rosenthal, Experimenter Effects in Behaviour Research, Appleton-Century-Crofts, New York, 1966, XIII - 464 p.

32 Richard Centers and Miriam Horowitz, "Social Character and Conformity: a Differential in Susceptibility to Social Influence", in Journal of Social Psychology, Vol. 60, 1963, p. 343 - 349.

33 T. W. Adorno, Else Frenkel-Brunswik, D. J. Levinson, and R. N. Sanford, The Authoritarian Personality, Harper and Brothers, New York, 1958, Vol. 1, XXXI - 600 p., Vol. 2, XV - 989 p.

both groups, although other-directed subjects conformed more than inner-directed. Marlow & Crowne[34] tested the extent to which subjects, at experimenter's request, would express favourable attitudes regarding a dull experiment in which they had participated. The investigators noted varying degrees of conformity, relative to subjects' need for social approval.

French, Morrison & Levinger[35], Zipf[36], and Sampson[37] utilized two measures of conformity to supervisor's expectations in performance of an experimental task. The first measure was the extent to which subjects increased production at the supervisor's insistence. They also measured changes in self-evaluation as a result of being exposed to a supervisor's low evaluation. French, et al[38] found conformity

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34 David Marlow and Douglas P. Crowne, "Social Desirability and Response to Perceived Situational Demands", in Journal of Consulting Psychology, Vol. 25, 1961, p. 109 - 115.

35 J. R. P. French, W. Morrison, and G. Levinger, "Coercive Power and Forces Affecting Conformity", in Journal of Abnormal and Social Psychology, Vol. 61, 1960, p. 93 - 101.

36 Sheila G. Zipf, "Resistance and Conformity Under Reward and Punishment", in Journal of Abnormal and Social Psychology, Vol. 61, 1960, p. 102 - 109.

37 E. E. Sampson, "Birth Order, Need Achievement, and Conformity", in Journal of Abnormal and Social Psychology, Vol. 64, 1962, p. 155 - 159.

38 J. R. P. French, W. Morrison, and G. Levinger, op. cit., p. 101.

positively related to the degree of threat posed by the supervisor, while resistance to conformity pressures was inversely related to supervisor attractiveness. Zipf[39] observed that the conformity force was related to goal valence and the probability of goal achievement through conformity. Sampson[40] varied birth order and sex, and noted that degree of conformity varied as a function of the interaction of both variables.

Corfield[41], Hamilton[42], and Johnson & Steiner[43] evaluated conformity to authority figures in terms of only one measure: self-evaluation after receiving a discrepant evaluation from a supposedly prestigious or knowledgeable source. Corfield[44] reported that susceptibility to social influence was related to subject's level of cognitive

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39 Sheila G. Zipf, op. cit., p. 108.

40 E. E. Sampson, op. cit., p. 158.

41 Vera K. Corfield, "Role of Arousal and Cognitive Complexity in Susceptibility to Social Influence", in Journal of Personality, Vol. 37, No. 4, 1969, p. 554 - 566.

42 David L. Hamilton, "Responses to Cognitive Inconsistencies: Personality, Discrepancy Level, and Response Stability", in Journal of Personality and Social Psychology, Vol. 11, No. 4, p. 351 - 362.

43 Homer H. Johnson and Ivan D. Steiner, "Some Effects of Discrepancy Level on Relationships Between Authoritarianism and Conformity", in Journal of Social Psychology, Vol. 73, 1967, p. 199 - 204.

44 Vera K. Corfield, op. cit., p. 564.

complexity. Hamilton[45] and Johnson & Steiner[46] related conformity to the degree of discrepancy between self-and-other evaluation, Hamilton[47] noting a positive monotonic relationship, Johnson & Steiner[48], an inverted U-shaped relationship.

Probably the most dramatic demonstration of authority pressure is provided by Milgram[49], who manipulated a highly believable situational test within the laboratory. Each subject was led to believe that he was administering negative reinforcement for errors to another subject who was apparently involved in a learning task. As the other subject, who was actually an experimental accomplice, continued to make errors, the experimenter insisted that the naive subject gradually increase the shock level. The accomplice reacted convincingly to the supposed increase in shock level and the experimenter observed the point at which the naive subject refused to administer any further shock. Compliance with the experimenter's instructions was high and consistent, often in

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45 David L. Hamilton, op. cit., p. 352 - 353.

46 Homer H. Johnson and Ivan D. Steiner, op. cit., p. 199 - 200.

47 David L. Hamilton, op. cit., p. 360.

48 Homer H. Johnson and Ivan D. Steiner, op. cit., p. 200.

49 Stanley Milgram, "Some Conditions of Obedience and Disobedience to Authority", in Human Relations, Vol. 18, 1965, p. 57 - 76.

spite of the naive subject's distress. An interesting feature of this work was the introduction of cross pressures to conformity in some of the experimental conditions. That is, a second experimental confederate was introduced into some sessions, in the guise of a second subject who refused to comply with the experimenter's instructions. Under these conditions compliance was reduced, although some conflict was observed.

There are numerous investigations of situations in which peer and authority conformity pressures are opposed. Some of the research seems to indicate that cross pressures are resolved in favour of the peer group. Berenda[50] has observed that children's judgments yield much more to the pressure of a majority of their classmates than to the pressure of their teacher. Coleman[51] in an aforementioned survey, noted that students urged by parents and teachers to do well in school, but faced with opposing norms on the part of the peer group, frequently do less well in school than

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50 Ruth W. Berenda, The Influence of the Group on the Judgments of Children, King's Crown Press, New York, 1950, (out of print), quoted by John D. Campbell, "Peer Relations in Childhood", in Martin L. Hoffman and Lois Wladis Hoffman, (Eds.), Review of Child Development Research, Vol. 1, Russell Sage Foundation, New York, 1964, p. 289 - 322.

51 J. S. Coleman, op. cit., p. 265.

their ability warrants. Davis, Gardner & Gardner[52] have suggested that the clique has more influence than parents. Rosen[53] has reported that among Jewish high school students, when attitudes of family and peer group conflicted regarding the use of kosher meat, the peer group tended to be more influential. In a study involving university students, Keasey, Walsh & Moran[54] obtained results that imply the possibility of resolution of cross pressures in favour of the peer group. The authors varied expertise of one influence source, similarity to subjects of another and found that similarity influenced response shift, whereas expertise did not. If it can be assumed that similarity to the responding individual is a peer group characteristic and that authority figures are perceived as possessing expertise, these results seem to suggest greater influence from the peer group than from authority figures.

There is evidence, on the other hand, that authority figures sometimes exert more influence than the peer group in situations where both sources of influence are operating.

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52 A. Davis, B. B. Gardner, and M. R. Gardner, Deep South, University of Chicago Press, Chicago, 1941, XV - 558 p.

53 B. C. Rosen, "Conflicting Group Membership: a Study of Parent-Peer Group Cross Pressures", in American Sociological Review, Vol. 20, 1955, p. 155 - 161.

54 Charles B. Keasey, James A. Walsh, and Gary P. Moran, "Effect of Labelling as an Informational Social Influence Upon Colour Perception", in Journal of Social Psychology, Vol. 79, No. 2, 1969, p. 195 - 202.

Coleman[55] has reported that a large majority of teenagers in his study would not join a particular school club if their parents disapproved of the group, even though their own preference might dictate otherwise. Westley & Elkin[56] noted that, to a considerable extent, children select friends on the basis of values acquired from their parents. Luchins & Luchins[57] tested university students for conformity on a perceptual task. They report that the experimenter, posing as an expert, could obtain compliance with a false norm even when it was opposed by peers. Vandenput[58] found adults in a natural setting more subject to authority influence than to peer influence. Blast furnace workers, though susceptible to safety practice pressures from both supervisors and co-workers, were more susceptible to such pressures from supervisors than from coworkers.

It is apparent from the above research that neither source of influence, peer or authority, is invariably predominant. One factor that seems to be a determinant of

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55 J. S. Coleman, op. cit., p. 138.

56 W. A. Westley and F. Elkin, "The Protective Environment and Adolescent Socialization", in Social Forces, Vol. 35, 1956, p. 243 - 249.

57 A. H. Luchins and Edith H. Luchins, "On Conformity with Judgments of a Majority or an Authority", in Journal of Social Psychology, Vol. 53, 1961, p. 303 - 316.

58 Michael A. Vandenput, "Unsafe Habits and Social Pressures", in Psychologica Belgica, Vol. 10, No. 1, 1970, p. 99 - 107.

direction of conformity behaviour is the issue involved. Brittain[59, 60, 61, 62], in a series of investigations of cross pressures to conformity, has consistently obtained evidence of the modifying effect of issue. In general, his results indicate that adolescents turn to parents for guidance in difficult, important choices, to the peer group for decisions more related to everyday behaviour. Remmers & Radler[63] also report on the influence of parents relative to peer influence, as a function of issue. According to their survey, only attitudes toward other racial groups are equally subject to peer and parent influence. Riley, Riley & Moore[64] have

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59 C. V. Brittain, "An Exploration of the Bases of Peer-Compliance and Parent-Compliance in Adolescence", in Adolescence, Vol. 2, No. 8, 1967 - 1968, p. 445 - 458.

60 --------, "A Comparison of Rural and Urban Adolescents with Respect to Peer vs. Parent Compliance", in Adolescence, Vol. 4, No. 13, 1969, p. 59 - 68.

61 --------, "Adolescent Choices and Parent-Peer Cross-Pressures", in American Sociological Review, Vol. 28, 1963, p. 385 - 391.

62 --------, "Age and Sex of Siblings and Conformity Toward Parents vs. Peers in Adolescence", in Child Development, Vol. 37, No. 3, 1966, p. 709 - 714.

63 R. H. Remmers and D. H. Radler, The American Teenager, Bobbs-Merrill, Indianapolis, 1957, 267 p.

64 M. W. Riley, J. W. Riley, and M. E. Moore, "Adolescent Values and the Riesman Typology: an Empirical Analysis", in S. M. Lipset and L. Lowenthal (Eds.), Culture and Social Character: the Work of David Riesman Reviewed, Free Press of Glencoe, Glencoe, Ill., 1961, p. 370 - 385.

observed that the adolescent's values, in some respects, represent a compromise between the values of his parents and those of his peers as he sees them. Furthermore, his expectations regarding his future adult values clearly approach those of his parents as he perceives them.

Another factor that may affect direction of conformity in a situation of cross pressures to conformity is anti-conformity, or opposition to one of the two sources of influence. It is possible that any tendency to resist influence from one source would increase the tendency to accept the influence of an opposing source.

The concept of anticonformity was introduced by Willis[65], in the context of a model of conformity behaviour which has been described by Willis & Hollander[66]. The model postulates three basic modes of responding to social pressure: conformity, independence, and anticonformity. Conformity is defined as "a completely consistent attempt on the part of the individual to behave in accordance with the normative expectations of a specified group, as he sees them"[67]. Whereas independence, in the model, occurs "whenever the individual

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65 R. H. Willis, "Two Dimensions of Conformity-non-conformity", in Sociometry, Vol. 26, 1963, p. 499 - 513.

66 R. H. Willis and E. P. Hollander, "An Experimental Study of Three Response Modes in Social Influence Situations", in Journal of Abnormal and Social Psychology, Vol. 69, 1964, p. 150 - 156.

67 Idem, ibid, p. 151.

perceives relevant normative expectations, but gives zero weight to them as guides to his behaviour"[68], anticonformity is described as "directly antithetical to the norm prescription"[69]. That is to say, normative pressures would have positive valence for the conformist, zero valence for an independent individual, negative for the anticonformist. It might be expected that, in a situation where the individual with anticonformist tendencies is faced with two opposing normative expectations, the negative valence of one normative influence might contribute to a tendency to endorse the opposite, regardless of the positive valence of the opposite. In this sense, anticonformity could influence direction of conformity in a situation of cross pressures to conformity.

In summary, the evidence cited above suggests some general conclusions regarding peer groups and authority figures as competing sources of pressure to conformity. First, two such distinct pressures do exist. As Thomas & Weigert[70] conclude in their study of socialization and

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68 R. H. Willis and E. P. Hollander, op. cit., p. 151.

69 --------, op. cit., p. 151.

70 Darwin L. Thomas and Andrew J. Weigert, "Socialization and Adolescent Conformity to Significant Others: a Cross-National Analysis", in American Sociological Review, Vol. 36, No. 5, 1971, p. 835 - 847.

adolescent conformity, conformity to authoritative others must be separated from conformity to peers. Second, the relative importance of the two sources of pressure depends at least partly on the issue involved. Third, since conformity behaviour per se is related to a number of factors, the tendency to respond to one source of conformity pressure rather than another is probably related to a complex of factors, including the issue involved, and anticonformist tendencies. Probably some of these factors are related to level of social development, others to the specific situation. Finally, it is suggested that the concept of cross pressures to conformity may be useful in providing insight into certain types of antisocial behaviour; for example, the illegal use of drugs on the part of university students.

2. Illegal Drug Use

The literature on illegal use of drugs suggests two general reasons for viewing such behaviour within a conformity framework. First, there is evidence that such behaviour takes place within a context of attitudes, and attitudes, as Kendler[70] has noted, are particularly susceptible to social pressure. Second, drug-using

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70 Howard H. Kendler, Basic Psychology. Appleton-Century-Crofts, Santa Barbara, Cal., 1963, XII - 749 p.

behaviour is often marked by an interaction between individual needs to identify with a group and group pressures on individuals to conform to group behaviour and thought. Such an interaction suggests a conformity frame of reference.

The attitudinal correlates of drug use have a relatively brief history but a powerful effect. It appears that the young middle class user of illicit drugs in North America, particularly the marijuana user, endorses a value system as well as a specific behaviour when he begins to use drugs. This general and diversely-reported observation is explicitly summarized in The Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs[71]: "The smoking of cannabis becomes a rite of initiation to a new society and value system". Brill[72] has traced the history of the value system in which the behaviour is

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71. Department of National Health and Welfare, Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs, Queen's Printer for Canada, Ottawa, 1970, text, 625 p., appendices, 127 p.

72 Henry Brill, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles A. Thomas, Springfield, Ill., 1970, p. 25 - 42.

embedded. It had its genesis in William James'[73] observation that transcendental experiences can be achieved through the use of drugs without the privation and arduous efforts endured by ascetics toward the same goal. It was Aldous Huxley[74], however, who specified and gave credibility to some of the major prodrug themes, including the notion of consciousness-expansion. On the North American continent, these ideas were expounded by Timothy Leary and his associates,

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73 William James, The Varieties of Religious Experience, The Modern Library, New York, 1929, XVIII - 526 p., quoted by Henry Brill, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1970, p. 25 - 42.

74 Aldous Huxley, The Doors of Perception, Penguin Books, Hamondsworth, Eng., 1959, 144 p., quoted by Henry Brill, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1970, p. 25 - 42.

one of whom, David Solomon[75, 76], has published the major polemics of the prodrug movement. Although the movement was first oriented toward LSD, it shifted focus to marijuana when a study by Cohen, Marinello & Back[77] indicated the possibility of chromosome damage as a result of using LSD.

The complex of attitudes surrounding the use of marijuana is described by Suchman[78] as the "hang-loose ethic". It consists of a melange of attitudes with social and political correlates, a generally permissive theme, particularly with respect to drugs, and quasi-religious overtones of the prodrug mystique described above.

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75 David Solomon, (Ed.), LSD: the Consciousness-Expanding Drug, G. P. Putnam, New York, 1964, XII - 273 p., quoted by Henry Brill, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1970, p. 25 - 42.

76 --------, The Marijuana Papers, Bobbs-Merrill Company, New York, 1966, XXVIII - 509 p., quoted by Henry Brill, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1970, p. 25 - 42.

77 M. M. Cohen, M. J. Marinello, and N. Back, "Chromosome Damage in Human Leukocytes Induced by Lysergic Acid Diethylamide", in Science, Vol. 155, 1967, p. 1417 - 1419.

78 Edward A. Suchman, "The Hang-Loose Ethic and the Spirit of Drug Use", in Journal of Health and Social Behaviour, Vol. 9, 1968, p. 146 - 155.

With regard to the social and political correlates of drug behaviour on the American campus, Blum[79], in an extremely thorough investigation, found users inclined to be politically left-wing and more politically active than non-users. Grinspoon[80] has reported that social users of marijuana share certain views, being remarkably sensitive to the Vietnam war, the arms race, overpopulation, poverty, racial injustice, and pollution. Kohn & Mercer[81] assessed subjects' sociopolitical ideology. They observed that the more rebellious students, in terms of sociopolitical ideology, were more permissive regarding drugs and more likely to use them than students with more authoritarian sociopolitical views.

It has been mentioned above that permissiveness, particularly with regard to drug use, is one of the dominant themes of the "hang-loose ethic". This tendency toward permissiveness has been specifically tested

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79 R. H. Blum, Students and Drugs, Jossey-Bass, San Francisco, 1969, XIX - 399 p.

80 Lester Grinspoon, Marijuana Reconsidered, Harvard University Press, Cambridge, Mass., 1971, XI - 433 p.

81 Paul M. Kohn and G. W. Mercer, "Drug-Use, Drug-Use Attitudes, and the Authoritarianism-Rebellion Dimension", in Journal of Health and Social Behaviour, Vol. 12, No. 2, 1971, p. 125 - 131.

by some investigators, who have found that more favourable attitudes toward drugs generally coexist with more extensive knowledge of drugs. Solursh and his associates[82] compared American and Canadian medical students on attitude toward drugs. They found American students more likely to have used drugs, to recognize them, to have permissive attitudes regarding their use by patients, and liberal attitudes concerning drug laws. De Fleur & Garrett[83], reporting on the population of a land-grant university in the American midwest, and Wiener[84], investigating adolescents in East End London, developed questionnaires composed of a variety of questions on attitudes and knowledge concerning drugs. Both investigators found significant differences between independently assessed users and nonusers in response to many of these questions. In comparison to nonusers, users knew more about drugs, had more favourable attitudes toward drugs, and advocated greater leniency in the laws regarding drug use.

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82 Lionel P. Solursh, S. Joseph Weinstock, C. Scott Saunders, and J. Thomas Ungerleider, "Attitudes of Medical Students Towards Cannabis", in Journal of the American Medical Association, Vol. 217, No. 10, 1971, p. 1371 - 1372.

83 Lois B. De Fleur and Gerald R. Garrett, "Dimensions of Marijuana Usage in a Land-Grant University", in Journal of Counselling Psychology, Vol. 17, No. 5, 1970, p. 468 - 476.

84 R. S. P. Wiener, Drugs and School Children, Longman, London, 1970, VII - 238 p.

A third theme of the "hang-loose ethic" is the prodrug mystique described by Brill[85]. Essentially, the tone of this mystique is positive; that is, it places more stress on the virtues of drug use than on the evils of the establishment. It has some antiestablishment aspects, however, and these have been stressed in some of the attempts to understand illegal drug-using behaviour. Blum[86] noted that many users are in opposition to their parents. Whitaker[87] has mentioned rebellion, chiefly against adult society, as a major motive for non-medical drug use among the young. White, Schoolar & Cohen[88] utilized a number of well-validated techniques of measurement to explore the multidimensional aspects of drug abuse. Their results indicated that users see the establishment as dangerous and allied with rationality, which

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85 Henry Brill, op. cit., p. 26 - 28.

86 R. H. Blum, op. cit., p. 74.

87 R. Whitaker, Drugs and the Law: the Canadian Scene, Methuen Publications, Toronto, 1969, IX - 240 p.

88 Elna H. White, Joseph C. Schoolar, and Charles P. Cohen, "Psychological Barriers to Communication in Drug Abusers", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1970, p. 253 - 263.

presumably is bad. Farnsworth & Scott[89] interviewed college students concerning their reasons for using marijuana. The three most frequently stated reasons were group identification, pressure from friends, and the search for a symbol of defiance toward adult authority. At a descriptive level, the anti-establishment aspect of illegal drug-using behaviour is probably best summarized by The Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs[90]. Regarding the use of marijuana the Report says:

> Because it is illicit and the object of strong disapproval from those who are, by and large, opposed to societal change, it is a symbol of protest and a means of strengthening the sense of identity among those who are strongly critical of certain aspects of our society and value structure today.

The data cited above support the assumption that illegal drug use, to some extent, represents a rejection of establishment values. Implicit in the summary taken from The Interim Report[91], however, and in the results of Farnsworth &

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89 D. L. Farnsworth and T. W. Scott, "Marijuana: the Conditions and Consequences of Use and the Treatment of Users", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Drugs and Youth: Proceedings of the Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1969, p. 168 - 177, quoted by L. Grinspoon, Marijuana Reconsidered, Harvard University Press, Cambridge, 1971, p. 181.

90 Department of National Health and Welfare, op. cit., p. 334.

91 Idem, ibid, p. 334.

Scott[92], is the opposite aspect of non-medical drug-using behaviour: the search for a positive identity. The students tested by Farnsworth & Scott[93] specified that they were in search of a group identity. They also specified that they felt under pressure to share in the behaviour of the group with which they sought to identify. Both phenomena suggest a strong conformity aspect to drug-using behaviour. There is considerable evidence to support the supposition that although the drug user, to some extent, is rejecting society's values, primarily he is conforming to the norms of the drug-using peer group.

Writing at a purely descriptive level, Grinspoon[94] has noted that the use of marijuana is more than an act of defiance against the older generation. Primarily, it represents an identification with or modelling after, the generation that has legitimized drug use. The "modelling" aspect of such behaviour is well documented. Blumer[95] has emphasized that much drug use is learned from peers or older

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92 D. L. Farnsworth and T. W. Scott, op. cit., p. 181.

93 Idem, ibid, p. 181.

94 Lester Grinspoon, op. cit., p. 181.

95 H. Blumer, "The World of Youthful Drug Use", in Addiction Center Project Final Report, School of Criminology, University of California, Berkely, 1967, quoted by R. H. Blum, Students and Drugs, Jossey-Bass, San Francisco, 1969, p. 20.

associates. Becker[96, 97] has stressed the learned aspect of marijuana use, and the significant role of the group in such learning. Whitaker[98] states that "becoming a pot smoker is almost always a learning process carried out within a group". Goldstein[99], Keeler[100], Surface[101], and Unwin[102] have all reported that students cite the desire to gain prestige through conformity to group behaviour as a major reason for drug use. Bey & Zuchinelli[103], in an investigation of marijuana use in Vietnam, have reported the need to bolster self-esteem through identification with the group as an

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96 H. S. Becker, "Becoming a Marijuana User", in American Journal of Sociology, Vol. 59, 1953, p. 235 - 242.

97 --------, Outsiders: Studies in the Psychology of Deviance, Free Press of Glencoe, New York, 1963, 170 p.

98 R. Whitaker, op. cit., p. 86.

99 R. Goldstein, One in Seven: Drugs on Campus, Walker, New York, 1966, quoted by R. H. Blum, Students and Drugs, Jossey-Bass, San Francisco, 1969, p. 10.

100 Martin H. Keeler, "Motivation for Marijuana Use: a Correlate of Adverse Reaction", in American Journal of Psychiatry, Vol. 125, No. 3, 1968, p. 386 - 390.

101 William Surface, The Poisoned Ivy, Coward-McCann, Incorporated, New York, 1968, VI - 223 p.

102 J. R. Unwin, "Non-Medical Use of Drugs with Particular Reference to Youth", in Canadian Medical Association Journal, Vol. 101, 1969, p. 804 - 820.

103 Douglas R. Bey and Vincent A. Zuchinelli, "Marijuana as a Coping Device in Viet Nam", in Military Medicine, Vol. 136, No. 5, 1971, p. 445 - 450.

important factor in the use of marijuana by servicemen. Weil, Zinberg & Nelsen[104], reporting on the behaviour of non-using student volunteers whom the authors had to exclude from a research project requiring only users, note that excluded students were apologetic about their nonuse.

The above literature indicates a strong internal pressure on the part of students to belong to the drug-using peer group. There is evidence that the peer group, in turn, exerts its own conformity pressures, which interact with the internal pressures of individuals. Sadava[105], in a study relating drug-using behaviour to social learning theory, obtained evidence that an environment supportive of drug use is a significant factor in drug-using behaviour. Users in his study experienced significantly more such social support than nonusers. Suchman[106] observes that an individual who reports pressure to use marijuana is twice as likely to be a frequent user as one who reports no such pressure. Some investigators have indicated that the pressure exerted by the

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104 Andrew T. Weil, Norman E. Zinberg, and Judith M. Nelsen, "Clinical and Psychological Effects of Marijuana in Man", in Science, Vol. 162, 1968, p. 1234 - 1242.

105 Stanley W. Sadava, "A Field-Theoretical Study of College-Student Drug Use", in Canadian Journal of Behavioural Science, Vol. 3, No. 4, 1971, p. 337 - 346.

106 Edward A. Suchman, op. cit., p. 152.

drug-using group has a more positive aspect than the simple threat of peer rejection. Blum[107] quotes university students as stressing the "togetherness" aspect of marijuana use as an important component of the pleasurable experience. Bueno[108], reporting on drug addicts in Mexico, notes that it is difficult to find lone marijuana smokers since one of the reinforcing aspects of the drug is the feeling of togetherness enjoyed by users. Goode[109], in his descriptive sociological study of drug users, makes a strong case that acceptance into the group involves accepting more than the behaviour of smoking marijuana. The group also provides a value system with which to identify. The author points out that marijuana-using groups are often distinguished by long-term and highly intimate social relationships and a certain degree of value consensus, particularly with regard to the use of marijuana. Smoking, in fact, maintains the group's cohesion and gives it its basis for identity. These factors conspire, according to Goode[110], to "link marijuana smoking powerfully to group

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107 R. H. Blum, op. cit., p. 178.

108 Dario Urdapilleta Bueno, "The Problem of Drug Addiction in Mexico", in R. T. Harris, W. M. McIsaac, and C. R. Schuster, (Eds.), Drug Dependence, University of Texas Press, Austin, Tex., 1970, p. 305 - 313.

109 E. Goode, "Multiple Drug Use Among Marijuana Smokers", in Social Problems, Vol. 17, 1969, p. 48 - 64.

110 Idem, ibid, p. 56.

influences; to make those who participate in it highly susceptible to the group's definitions of reality, of right and wrong, of good and bad, of true and false". The Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs[111] further underlines the significance to the drug-using community of its own value system. According to the Commission, not only do marijuana users feel that their value system links them and sets them apart from nonusers; they actively proselytize new believers.

Viewed in the above context, the behaviour of users, while it may involve some rejection of the nonuser's values, is at least as much influenced by the desire to conform to the values of the drug-using community. It represents a positive choice of direction of conformity. This seems to be particularly the case with marijuana smokers. While studies of drug-using behaviour have tended to concentrate more on users than on nonusers, there is at least some evidence that the nonuser is behaving in a similar manner, though his direction of conformity differs. That is, his behaviour represents a tendency to conform to the norms of "straight" society.

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111 National Department of Health and Welfare, op. cit., p. 335.

Blum[112] has reported that neither nonuser nor user in his study regarded the illegality or immorality of drug use as a paramount issue. However, nonusers, in comparison with users, were more conservative, more religious, and better socialized, all of which seem to suggest more conformity to parental values. McGlothlin, Cohen & McGlothlin[113] noted that graduate students who refused to use drugs for research purposes were more conventional than those who were willing to use drugs in this particular setting. Smart, Fejer & White[114] observed that grade-and high-school students holding beliefs consistent with the norms of their parents were less likely to use drugs than were students who experienced a lack of norms or who were acutely aware of conflicting norms.

To summarize the above discussion, it has been noted that, in many situations, university students are subject to cross-pressures to conformity. One such situation may occur when the student comes in contact with marijuana use on the campus. In this situation, societal or "establishment"

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112 R. H. Blum, op. cit., p. 230 and p. 59 - 61.

113 W. S. McGlothlin, S. Cohen, and M. S. McGlothlin, "Personality and Attitude Changes in Volunteer Subjects Following Repeated Administration of LSD", paper presented before the Fifth International Congress, Collegium Neuro-psychopharmacologicum, March, 1967, quoted by R. H. Blum, Students and Drugs, Jossey-Bass, San Francisco, 1969, p. 25 - 26.

114 Reginald G. Smart, Dianne Fejer, and Jim White, The Extent of Drug Use in Metropolitan Toronto Schools: a Study of Changes from 1968 to 1970, The Addiction Research Foundation, Toronto, 1970, text, 49 p; appendices, 82 p.

pressures would influence the student not to use marijuana while certain peer pressures would influence him to adopt not only the behaviour of using marijuana but also the valuative norms associated with such behaviour. The literature on conformity suggests that the student may resolve the situation in any of three different ways. He may remain independent, using only himself as a reference point in determining his conduct. He may conform to the establishment, or he may conform to the peer group. If, for a variety of historical and situational reasons, he tends to be more susceptible to authority pressure than to peer pressure, he will opt for the establishment. If, for equally various reasons, he is more susceptible to peer pressure than to authority pressure, he will opt for the peer group. One choice cannot be said to demonstrate more independence than the other. While, in either case, conformity to one group may imply some rejection of the opposing group, there is evidence that the motivation for conformity may be at least as positive as it is negative, possibly more so. Thus, a student's choice of behaviour when confronted with a decision regarding the use of marijuana may reflect to some extent a general tendency to be more positively influenced by one source of conformity pressure than by another.

3. Statement of the Problem

The above analysis gives rise to two questions. First, do users and nonusers of marijuana on the university campus differ in direction, but not degree of tendency to conform to social pressure? Second, in a situation where the university student is subject to conformity pressure from two opposing groups, to what extent is conformity to one group enhanced by anticonformity to the other? These questions can be expressed in the form of four hypotheses.

4. The Research Hypotheses

On the basis of the literature reviewed, the following hypotheses are proposed:

1. Marijuana users on the university campus are more susceptible than nonusers to peer conformity pressures.

2. Nonusers of marijuana on the university campus are more susceptible than marijuana users to conformity pressures from the establishment.

3. Users and nonusers of marijuana on the university campus do not differ in degree of independence of conformity pressures when direction of conformity pressure is not taken into account.

4. Regardless of direction, conformity on the part of both users and nonusers reflects attraction to one group at least as much as rejection of the other.

5. Purpose of the Research

The purpose of this research was to compare nonusers and users of marijuana on the University of Ottawa campus with respect to differences in the source of conformity pressure to which each group may be more responsive, and with respect to independence of conformity pressure. In the succeeding chapters, the research design and the methodology are described, following which the results of the investigation are presented and discussed.

CHAPTER II

RESEARCH METHOD

The purpose of this research was to compare marijuana users and nonusers on the University of Ottawa campus with respect to the source of conformity pressure to which each group was predominantly responsive, and with respect to independence of conformity pressure.

In this chapter, the research method is outlined. First, the methods of subject selection are presented, followed by a description of the sample of subjects. The tasks and materials used in the research are then described; first, the instrument for testing conformity, and then, the drug questionnaire. In the following two sections the design is outlined and the testing and group classification procedures are described. The statistical analysis of the data is presented next, with three subsections. The first subsection describes the statistical tests employed in defining the research groups, while the second and third outline the methods employed in analysis of the conformity data. In the last section, the experimental predictions are presented in the form of null hypotheses.

1. Selection of Subjects

The first step in obtaining subjects was to contact Department Heads in each Faculty. Where a Faculty consisted of

only one Department, the Dean of the Faculty was approached.

Using a faculty list obtained from the Scheduling Office, Department Heads were contacted by telephone in alphabetical order of Faculty and of Departments within each Faculty. Contacts continued until permission was obtained from at least one Department Head in each Faculty to approach professors regarding the use of English-speaking undergraduate classes for testing. In two Faculties, Law and Engineering, permission was given to approach students directly. In the Faculty of Psychology, students were considered by some staff members to have been over-tested. However, in order that the Faculty might be represented in the sample at least to some extent, arrangements were made directly with one staff member to test his class.

Within each Department, professors whose classes were conducted in English[1] were then approached by telephone, again in alphabetical order. Because of timetable clashes, and because not all professors were able to spare class time, it was impossible to obtain a strictly stratified sample. However, all Faculties were represented in the final sample.

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1 Test materials were in English. Since undergraduate students were known to have widely varying levels of acquaintance with English it was decided that the criterion for inclusion in the sample should be the ability to cope with classroom instruction in English.

2. Subjects

Initially, 334 English-speaking male undergraduates from the University of Ottawa were tested. Of these, 128 were eliminated, ten because they were overtly suspicious of the conformity manipulation, five because they misunderstood the instructions, 113 because they did not complete both testing sessions. The final sample of 206 included 22 subjects from each of Engineering, Physical Education, and Social Science, 34 from Arts, 11 from Psychology, 48 from Management Sciences, 20 from Medicine, and 27 from Law. Eight of these subjects were contacted through Father Hilton, the University Chaplain, when it seemed that the regular classroom contact might not provide a sufficient sample of users.

3. Tasks and Test Materials

a) Conformity - On two separate occasions, subjects were required to rate Jews, Negroes, and Foreigners on a semantic differential[2]. The first occasion preceded the second by an interval of at least one week. On the second presentation, false normative responses of supposed Peer and Establishment groups were presented with the semantic differential. Conformity was measured in terms of response

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2 C. E. Osgood, "The Nature and Measurement of Meaning", in Psychological Bulletin, Vol. 49, 1952, p. 197 - 237.

shifts following presentation of the false norms. That is, conformity was defined as norm acceptance, rather than as yielding to direct social pressure.

Since the semantic differential was used to test susceptibility to conformity pressures rather than meaning per se, the scales were selected without consideration of the various dimensions of the concepts in question. Of the 48 scales, 34 were taken from Lambert & Hodgson[3], while another 14 were arbitrarily selected. All scales are shown in Appendix 1.

The semantic differential was considered an appropriate instrument for an investigation concerning opposing pressures to attitude change because it permits change in either of two directions. Also, Norman[4] reports test-retest correlations of .97 and .92 with group data, indicating very high stability over time in the absence of intervening treatment. When group data are being considered, therefore, it can be assumed that response changes on the semantic differential are attributable to experimental intervention.

b) Drug Questionnaire - All subjects filled out a questionnaire consisting of 93 questions regarding attitudes, knowledge, and use of drugs. Of the 93 questions, 21 regarding attitude and fact had previously

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3 W. E. Lambert and R. C. Hodgson, "Evaluational Reactions to Spoken Languages", in Journal of Abnormal and Social Psychology, Vol. 60, 1960, p. 44 - 51.

4 Warren T. Norman, "Stability Characteristics of the Semantic Differential", in James E. Snider and Charles E. Osgood, (Eds.), Semantic Differential Technique: A Sourcebook, Aldino Publishing Company, Chicago, 1969, p. 168 - 171.

been reported by De Fleur & Garrett[5] to distinguish between independently assessed users and nonusers on an American university campus at a .05 level of significance, or better. Wiener[6] had previously used 59 of the remaining questions to distinguish between users and nonusers in a London school population at a .05 level of significance, or better. The remaining questions, which concerned type and frequency of drug use, were taken from Smart, Fejer & White[7], and on the basis of these questions 136 subjects in the present research were assigned to the Nonusers Group, 70 to the Users Group. As a check on the validity of the assignment criterion, the two groups were then compared on their responses to the balance of the questionnaire. These comparisons are shown in the Results section. The drug questionnaire is shown in Appendix 2..

De Fleur & Garrett[8] and Smart, Fejer & White[9] do not report validity and reliability data. Wiener[10] used a group of

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5 Lois B. De Fleur and Gerald R. Garrett, "Dimensions of Marijuana Usage in a Land-Grant University", in Journal of Counselling Psychology, Vol. 17, No. 5, 1970, p. 468 - 476.

6 R. S. P. Wiener, Drugs and School Children, Longman, London, 1970, VII - 238 p.

7 Reginald G. Smart, Dianne Fejer, and Jim White, The Extent of Drug Use in Metropolitan Toronto Schools: A Study of Changes from 1968 to 1970, text, 49 p; appendices, 82 p.

8 De Fleur and Garrett, op. cit., p. 468 - 476.

9 Smart, Fejer & White, op. cit., text, 49 p; appendices, 82 p.

10 Wiener, op. cit., p. 180.

heroin addicts to establish the validity of that part of his questionnaire that concerned knowledge of drugs. His expectation was that the criterion group would score significantly higher on knowledge of drugs than subjects in a pilot group to whom the questions were administered. This expectation was supported by the Mann Whitney U Test, applied to the scores of the two groups. Regarding reliability of the same portion of the questionnaire, a check on internal consistency was provided by two items which phrased the same question in different ways. Differences in the number of subjects answering each of these two questions correctly were not significant. Although this reliability test appears somewhat inadequate, it should be remembered that the validity of the questionnaire, rather than its reliability, is the major concern in the present research. Its validity has been well established, both in Wiener's[11] investigation and the present research project.

Wiener[12] does not report on the validity of that portion of his questionnaire involving attitudes towards drugs, since he had no readily available criterion group. Regarding reliability of this section, however, a split-half comparison of odd- and even-numbered questions provided a significant r of .565.

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11 Wiener, op. cit., VII - 238 p.

12 Idem, ibid, p. 181.

In the present research, two measures were employed to check on the validity of the questionnaire compiled from the above authors. First, only those questions that had previously provided significant distinctions between users and nonusers were integrated into the present research. Second, the questionnaire based on these questions was subjected to a pilot study, employing a group of known users and a group of known nonusers. A comparison of the responses of the two groups revealed significant differences on a number of questions, which were treated as critical items for comparison of the groups in the research proper. In general, users in the pilot study had more favourable attitudes toward drugs than nonusers, advocated more leniency in the laws regarding drugs, and knew more about drugs. These results are completely consistent with those obtained by the investigators who originally formulated the questionnaires.

For purposes of scoring the drug questionnaire, questions of attitude and questions of knowledge were treated differently. Self-report questions concerning drug-using behaviour were not scored, being used simply for the initial assignment to the Nonusers or Users Group.

Responses to questions of attitude were divided into two categories, yes and no, and the number of responses in each category totalled. An item-by-item comparison was then made of the proportion of subjects in each group responding like users in the studies from which the questions were drawn. A two-

tailed t-test for the significance of differences between proportions in independent samples was used for this purpose. The results of this comparison are shown in Table III of the Results section.

To score questions of factual knowledge, one point was awarded for each item correctly answered and the points totalled within each group. A comparison was then made of the mean number of correct responses within each group, using a two-tailed t-test for independent samples. Results of this comparison are shown in Table IV of the Results section.

4. Design

To test the research hypotheses, a completely randomized design was used, employing repeated measures, and fixed treatments. Each subject acted as his own control.

a) Independent Variables - The single independent variable was conformity pressure. Following assignment to one of the two classification groups by self-report and scores on the drug questionnaire, all subjects were exposed to three levels of the independent variable: Peer Pressure, Establishment Pressure, and Peer-plus-Establishment Pressure.

Peer and Establishment Pressure were manipulated by introducing on 48 items of the second semantic differential false and opposing normative responses supposedly made by two

previous groups, one described as "students who have so far been tested", the other as "older people who have so far been tested" Peer-plus-Establishment Pressure was manipulated by introducing on twelve critical items of the second semantic differential false and agreeing normative responses supposedly made by the two previous groups described above.

The false norms were arrived at in the following way. Conformity data were obtained from three classes prior to the mid-term break, after which the bulk of the testing was completed. Data from these three classes, rather than being included in the study proper, were used to arrive at a mean response for each item on the semantic differential. In an adaptation of the work of Eagly[13], the 48 items on which responses to the first[14] semantic differential showed the greatest central tendency were then selected as critical items for Peer Pressure and Establishment Pressure. On each of the 48 critical items, Peer and Establishment responses were then assigned to the extreme ends of the scale. If Peers were shown as responding at position one or position two, Establishment figures were shown as responding at

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13 Alice H. Eagly, "Sex Differences in Relation Between Self-Esteem and Susceptibility to Social Influence", in Journal of Personality, Vol. 37, No. 4, 1969, p. 581 - 591.

14 The author was not interested, at this point, in response shift, but only in subjects' initial, uninfluenced responses to the semantic differential.

position six or seven. A table of random numbers was employed to determine which end of the scale each group would occupy on each item, and to determine, for each group, whether the most extreme or the second-most extreme position would be occupied on each item.

Peer-plus-Establishment norms were derived from the same pilot data as Peer and Establishment norms. Following determination of mean response made by the pilot groups to each item, the twelve items eliciting the most extreme responses were selected. On each of these, Peer and Establishment responses were shown to concur at the central, or fourth position on the scale.

Peer responses on all noncritical items were shown as they appeared in the pilot data. Establishment responses on noncritical items were randomly determined, with the restriction that none of the response combinations shown on critical items could be duplicated on noncritical items.

b) Dependent Variables - Three dependent variables, Peer Conformity, Establishment Conformity, and Independence, were employed in between-groups comparisons. All three were related to the independent variables, Peer Pressure and Establishment Pressure. Peer Conformity was measured in terms of total number of positions that responses on the second semantic differential shifted toward Peer norms on critical items.

Establishment Conformity was determined in the same way, using shifts toward Establishment norms as the measure. Independence was measured in terms of total number of critical items on which there was no response shift following presentation of the false norms.

Four other dependent variables were employed in two within-group comparisons, to determine the relative influences of conformity and anticonformity on attitude change. Two of them, the indices of net change toward Peer norms and toward Establishment norms, were based on the independent variables, Peer Pressure and Establishment Pressure, while the indices of net change toward and away from Peer-plus-Establishment norms were based on the independent variable, Peer-plus-Establishment Pressure.

Net change in relation to the various norms was measured in terms of total observed attitude change in relation to a particular norm, divided by total possible attitude change in relation to that norm. The details of these measures, the comparisons involved, and the rationale behind them are described at greater length in the subsection of this chapter entitled Statistical Analysis.

5. Procedure

a) Testing - Except for the eight subjects obtained through the Chaplain, who were tested at the Chaplaincy, subjects were tested in groups in their classrooms on a volunteer basis. At the first session, only the semantic differential was administered. It was introduced with the following instructions:

> Good morning. My name's Miss Thornton. I'm a research assistant in the Department of Psychology. I'm here to ask for your help in a research project the Psychology Department is undertaking. We're doing an attitude survey and we'd like to compare your feelings and ideas about certain social issues with those of...let's call them "establishment" people, for lack of a better word. So we're going to administer some attitude scales to as many university students as possible and as many "establishment" people as possible. We think it's important research, in the sense that it helps us keep in touch with the way some very important segments of our society - namely, you - feel about the social structure.
>
> Right now I'd appreciate it if the fellows in the class would volunteer to fill out an attitude scale on minority groups. The girls aren't invited but there's no chauvinism intended, as I'm sure you know. It's just that men and women tend to differ a lot on some of these issues and that could complicate this particular experimental design. So if the men will volunteer it won't take long and I think you'll find it interesting. The instructions are included in the scale. They're quite straightforward and I'll be on hand, in any case, to answer any questions. Incidentally, when the research is finished we'll be glad to tell you about the results. Could I have volunteers?

When all the scales had been completed and collected, the session was closed with the following comments:

> I should mention now that we'll be asking you to fill out this scale again, as well as a different one, on _____ _____. I'm telling you this now

> because it's important that if you fill in this scale once, you fill it in the second time. This is an important check on our experimental procedures. So I hope that those who volunteer today will volunteer on _____ _____ too. It will take about the same length of time. Incidentally, if I can give you any feedback at that time on the results so far, I certainly will. Thanks a lot for your help. I'll see you again on _____, _____ at _____. At That time I hope to be able to tell you something about the results of the research so far. Goodby. Thanks again.

The second testing session followed the first by an interval of at least a week. At this session the semantic differential was presented for the second time and the drug questionnaire was administered. Presentation of the semantic differential was preceded by the following comments:

> As you remember, when you filled out the attitude scale on minority groups ___ week(s) ago, I told you I'd be back to ask you to fill it out again and to fill out another questionnaire. I also told you I'd give you feedback on the attitudes people have expressed toward minority groups so far. I'm here today to keep both promises. I'm going to ask you to fill out the same scale again, as a check on our experimental procedures. I'm also going to ask you to fill out a questionnaire concerning drugs and I'm going to let you see how people to date have responded to the attitude scale you filled out last time. You probably remember that we're comparing university students with another, older group of people that we call the Establishment Group. Well, on the attitude scale that I'm giving you today, the one you're filling out for the second time, you'll see the letters "S" and "E" in various places. At the top of the first page there's an explanation of the meaning of these letters, which are there just for your information. We'll go over the explanation together after I've handed out the questionnaires.
>
> The other questionnaire you're going to fill out today concerns drugs, as I told you. It's pretty well self-explanatory but just raise your hands if you have any questions while you're filling it out.

> If there are no questions at the moment I'll hand out the questionnaires. Remember, you're to fill out both of them.

When the questionnaires had been distributed, the instructions at the head of the semantic differential were read aloud with the subjects. Subjects were also reminded of the space for "Comments" at the end of the semantic differential, which was intended as a check for suspicion regarding the purpose of the experiment, the conformity manipulation, or both:

> By the way, at the end of the attitude scale on minority groups, there's a space marked "Comments". The researchers would welcome your comments and criticisms, provided they're serious. If you have any, this is the place for them.

Following this, subjects were asked if they had any further questions, and testing began. When the session ended, professors and students were thanked. As a followup to collection of data, all Deans, Department Heads, and professors who had cooperated in the research were sent letters of thanks.

b) Group Classification - Questions 73 - 82 of the drug questionnaire were self-report questions, on which the subject reported frequency of use of a number of different drugs, including alcohol and tobacco (see Appendix 2).
Initial assignment to experimental groups was made on the basis of type and frequency of drug use. Subjects reporting the use of only alcohol and/or tobacco oftener than once a month were classified as nonusers. Those who reported that they had used

marijuana more than once a month for the past six months, but had used no other drug except alcohol and/or tobacco as frequently, were classified as marijuana users. Multiple drug users were classified on the basis of having used, at least once a month for the past six months, any combination of the following drugs: marijuana, barbiturates, opiates, speed, tranquillizers, LSD or any other hallucinogen. These criteria are based on the work of Tart[15].

6. Statistical Analysis

a) Definition of Groups - In the investigations from which the drug questionnaire was derived, two t-tests were employed to compare the responses of nonusers and users to the questionnaire. In the present investigation, two t-tests were employed for the same purpose. Responses to questions of attitude were compared by means of a two-tailed t-test to determine the significance of differences in the proportion of subjects in each group answering each such question in the same manner as users in the original study. The significance test for questions of knowledge was a two-tailed t-test to determine the significance of the difference between the means of independent samples.

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15 Charles T. Tart, On Being Stoned, Science and Behaviour Books, Palo Alto, Cal., 1971, XVII - 333 p.

b) Conformity Data - Using three one-factor fixed effect analyses of variance, nonusers and users were compared on each of Peer Conformity, Establishment Conformity, and Independence.

c) Conformity versus Anticonformity in Attitude Change - The following procedures were employed to determine whether attitude change reflected conformity to one set of norms or anti-conformity with regard to the other. First, within each group, each of the following was computed: average observed change toward Peer norms, toward Establishment norms, toward Peer-plus-Establishment norms, and away from Peer-plus-Establishment norms. Then, the following were computed, also within each group: average possible change toward Peer norms, toward Establishment norms, toward Peer-plus-Establishment norms, and away from Peer-plus-Establishment norms.

Average possible change was computed by totalling and averaging differences between subjects' positions on the first semantic differential and the positions of the false normative responses which were presented on the second semantic differential. This step was taken because the determination of the relative influence of conformity versus anticonformity involved comparisons of change toward Peer-plus-Establishment norms with change toward the other norms. Since the Peer-plus-Establishment norms were based on only twelve items, whereas the Peer and Establishment norms were each based on forty-eight, it was necessary to express net change in direction of norms in

terms of total observed change as a proportion of total possible change. Otherwise, meaningful comparisons could not have been made.

The various comparisons and their underlying assumptions are described in detail in the Results section. The basic rationale, however, is that both sources of influence, Peer and Establishment, may have a negative, a positive, or a neutral valence. Whatever the direction of attitude change, it is probably a function of the valences of both sources of influence.

When attitude change occurs in the direction of one of two opposing groups, it can probably be inferred that that group has some positive valence, but the valence of the opposing group cannot be inferred from such evidence alone. It can be inferred, however, if attitude change in relation to opposing groups is compared with attitude change in relation to a consensus of the normally opposed groups, if it is assumed that attitude change in relation to such a consensus is a reaction to the summated valences of the two normally opposed groups. The Peer-plus-Establishment norms represent a consensus of two normally opposed groups. Hence it is assumed that a comparison of attitude change in relation to Peer-plus-Establishment norms and attitude change in relation to either Peer or Establishment norms will provide information concerning the valence of both Peer and Establishment norms.

7. Statistical Hypotheses

In the above section, the tests of the research hypotheses have been described. Below, cast in null form, are the hypotheses.

1. On the University of Ottawa campus, marijuana users are not more susceptible than nonusers to peer conformity pressures.

2. On the University of Ottawa campus, nonusers of drugs are not more susceptible than marijuana users to conformity pressures from the establishment.

3. Users and nonusers of marijuana on the University of Ottawa campus do not differ in degree of independence with respect to conformity pressures when direction of conformity pressure is not taken into account.

4. On the University of Ottawa campus, susceptibility to conformity pressure, regardless of direction of conformity, is equally likely to be a function of conformity to one source of conformity pressure or of anticonformity to another source.

The methodology and statistical methods outlined above were employed to gather and test data relevant to the hypotheses expressed above in null form. In the following chapter, the results of a statistical analysis of the data are presented.

CHAPTER III

RESULTS

In the following chapter, the results of the statistical analyses of the data are presented. The chapter has three main divisions. The first concerns the comparison of nonusers' and users' responses to the drug questionnaire. This section has two subsections, the first of which presents the results of the pilot study establishing the validity of the drug questionnaire. The second subsection shows the t-test comparisons of nonusers' and users' responses to questions of attitude and knowledge on the drug questionnaire, on the basis of which subjects were assigned to either the Nonusers Group or the Users Group.

The second division of the chapter presents the group means and the analyses of the conformity data. There are five subsections. The first two concern the means of the Users Group and the Nonusers Group. Each of the remaining three subsections shows the results of a one-factor analysis of variance. The first such analysis concerns Peer Conformity, the second, Establishment Conformity, and the third, Independence.

In the third division of the chapter, attitude change is considered as a function of conformity to one group and anti-conformity to another. The indices of net change toward Peer norms and Establishment norms are compared with the index of net change toward Peer-plus-Establishment norms. The index of net change away from Peer-plus-Establishment norms is also compared with the index of net change toward Peer-plus-Establishment norms.

1. Definition of Groups

a) Validity Study - Prior to testing of subjects, one copy of the drug questionnaire was forwarded to each of twenty known nonusers, and twenty known users. Nonusers were seminarians at St. Paul's University, while users were recruited from volunteers who had taken part in a previous research project on the University of Ottawa campus, in which their drug-using habits had been ascertained. Included with each questionnaire was a stamped, self-addressed envelope and a letter requesting the recipient to complete the questionnaire anonymously and return to the sender. All of the nonusers and eleven of the users returned the questionnaires as requested.

Responses of the two groups to questions of opinion and attitude were compared first, using a two-tailed t-test to determine the significance of the difference between proportions. Results of the t-tests are shown on page 56, in Table I. Table I indicates that Questions 2 - 7, 9 - 11, 16, 18 - 20, and 86 discriminate significantly between the two groups in the expected direction; i.e., in the direction observed by De Fleur & Garrett[1] and Wiener[2] in the studies from which the questions were taken.

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1 Lois B. De Fleur and Gerald R. Garrett, "Dimensions of Marijuana Usage in a Land-Grant University", in Journal of Counselling Psychology, Vol. 17, No. 5, 1970, p. 468 - 476.

2 R. S. P. Wiener, Drugs and School Children, Longman, London, 1970, VII - 238 p.

TABLE I

VALIDITY STUDY:
TWO-TAILED t-TEST COMPARISON OF PROPORTIONS OF NONUSERS AND USERS RESPONDING IN SAME DIRECTION AS USERS IN PREVIOUS STUDIES TO QUESTIONS OF ATTITUDE ON DRUG QUESTIONNAIRE

QUESTION	PROPORTION		Z	P
	Nonusers	Users		
1	.75	.64	.92	n.s.
2	.80	1.00	2.86**	.001
3	.10	.82	8.00	.001
4	.30	.73	3.91**	.001
5	.40	.64	2.00*	. 05
6	.05	.73	7.56**	.001
7	.25	.82	4.38**	.001
8	.05	0.00	1.25	n.s.
9	.05	.45	4.00**	.001
10	0.00	.36	4.00**	.001
11	.05	.82	9.63**	.001
12	.15	.09	.75	n.s.
13	0.00	0.00	0.00	n.s.
14	0.00	.09	1.80	n.s.
15	.50	.73	1.91	n.s.
16	.60	1.00	4.44**	.001
17	.55	.73	1.50	n.s.
18	.45	1.00	6.11**	.001
19	.10	.55	4.50**	.001
20	.30	.73	3.64**	.001
86	.45	1.00	6.11**	.001
87	.95	1.00	0.00	n.s.

To compare the two groups on knowledge of drugs, one point was assigned for each correctly-answered factual question, and scores were totalled. Group means were then determined and compared, using a two-tailed t-test. Results of the t-test are shown in Table II, on page 58. From Table II it can be seen that, as expected, the users scored significantly higher than the nonusers on knowledge of drugs ($t = 2.68$, $p < .01$).

b) Discrimination of Experimental Groups - On the basis of the validity study and the previous studies reported above, it was assumed that the drug questionnaire should discriminate between those claiming to be users and those claiming to be nonusers. Therefore, as a check on accuracy of self-report, the Nonusers Group and the Users Group were compared on the questions of attitude and opinion that had discriminated between nonusers and users in the validity study, and on all the factual questions in the questionnaire. Table III, on page 59, shows proportions of subjects in each group responding to each question of attitude or opinion in the same direction as in the validity study. All differences are in the expected direction.

Table IV, on page 60, shows the two-tailed t-test comparison of the two groups on factual questions. As in the validity study, users obtained a significantly higher mean score ($t = 4.26$, $p < .001$).

TABLE II

VALIDITY STUDY:
TWO-TAILED t-TEST COMPARISON OF NONUSERS AND USERS ON MEAN NUMBER OF CORRECT RESPONSES TO FACTUAL QUESTIONS ON DRUG QUESTIONNAIRE

MEAN		t	p
Nonusers	Users		
34.2	44.5	2.68	.01

TABLE III

TWO-TAILED t-TEST COMPARISON OF PROPORTIONS OF NONUSERS AND USERS RESPONDING TO QUESTIONS OF ATTITUDE ON DRUG QUESTIONNAIRE IN SAME DIRECTION AS USERS IN VALIDITY STUDY

QUESTION	PROPORTION		Z	P
	Nonusers	Users		
2	.51	.89	10.00**	.001
3	.39	.89	12.50**	.001
4	.26	.61	8.75**	.001
5	.44	.70	6.50**	.001
6	.09	.54	11.25**	.001
7	.31	.73	10.50**	.001
9	.15	.50	8.75**	.001
10	.10	.21	2.75*	. 01
11	.29	.80	12.75**	.001
16	.71	.99	9.33**	.001
18	.49	.96	15.67**	.001
19	.23	.44	4.20**	.001
20	.29	.73	11.00**	.001
86	.58	.97	9.75**	.001

TABLE IV

TWO-TAILED t-TEST COMPARISON OF NONUSERS AND USERS ON MEAN NUMBER OF CORRECT RESPONSES TO FACTUAL QUESTIONS ON DRUG QUESTIONNAIRE

MEAN		t	p
Nonusers	Users		
30.95	46.21	4.26	.001

The above data indicate that the Nonusers and Users Groups were clearly discriminable in terms of attitudes and knowledge regarding drugs, as well as in self-reported drug behaviour[3].

2. Conformity

In the following division, within-group means are presented first, in two subsections dealing with the Users Group and the Nonusers Group, in that order. Then the results of the between-group comparisons on Peer Conformity, Establishment Conformity, and Independence are presented.

a) Users Group - The means for Peer Conformity, Establishment Conformity, and Independence in the Users Group are shown in Table V. The table shows a mean of 23 for both Peer Conformity and Independence. Establishment Conformity, on the other hand, has a mean of 12, approximately half the mean for either Peer Conformity or Independence. Apparently, given a choice of conforming to peers, remaining independent, or conform-

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3 One subject who had been included in the Users Group on the basis of self-report was observed to respond in a manner strikingly dissimilar to other members of the Users Group both on knowledge and attitude concerning drugs. A check of his conformity data indicated that his conformity behaviour was more consistent with the Nonusers Group than with the Users Group; i.e., he was predominantly Establishment-conforming. His data were not excluded, however, because the groups were sufficiently large that exclusion of his data would not significantly alter the results. Even if they did, it would be in a direction consistent with the already significant difference.

TABLE V

USERS GROUP: MEAN PEER CONFORMITY, ESTABLISHMENT CONFORMITY, AND INDEPENDENCE

MEAN PEER Conformity	MEAN ESTABLISHMENT Conformity	MEAN Independence
23	12	23

ing to the Establishment, marijuana users are twice as likely to adopt one of the first two alternatives as to adopt the third.

b) Nonusers Group - Table VI shows the means for Peer Conformity, Establishment Conformity, and Independence in the Nonusers Group. From Table VI it can be seen that Peer Conformity and Establishment Conformity means, respectively, were 17 and 16. The mean for Independence was 27, indicating that this group displayed considerably more independence than conformity in either direction. When nonusers did conform, they conformed equally to peers and establishment.

c) In the above two sections, within-group means have been presented. The results of the three between-groups comparisons are shown in the following three subsections.

c.1) Peer Conformity - Shifts in the direction of false Peer norms on forty-eight critical items provided the measure of Peer Conformity. According to the null hypothesis, it was predicted that users would not display significantly more Peer Conformity than nonusers. Results of a one-factor analysis of variance are shown in Table VII, on page 65. Table VII indicates that the Users Group did in fact display significantly more Peer Conformity than the Nonusers Group ($F = 10.31$, $df = 1, 204$, $p < .01$). The null hypothesis is not supported.

TABLE VI

NONUSERS GROUP: MEAN PEER CONFORMITY, ESTABLISHMENT CONFORMITY, AND INDEPENDENCE

MEAN PEER Conformity	MEAN ESTABLISHMENT Conformity	MEAN Independence
17	16	27

TABLE VII

ONE-FACTOR, FIXED LEVELS ANOVA:
COMPARISON OF PEER CONFORMITY IN NONUSERS AND USERS
AS MEASURED BY RESPONSE SHIFT IN DIRECTION
OF PEER NORMS ON SEMANTIC DIFFERENTIAL

Source	df	SS	MS	F	P
Between	1	1,711	1,711		
				10.31	.01
Within	204	33,870	166		

c.2) Establishment Conformity - The measure of Establishment Conformity was provided by total shifts in the direction of false Establishment norms on forty-eight critical items of the semantic differential. On the basis of the null hypothesis, it was predicted that nonusers would not display significantly more Establishment Conformity than users. Results of a one-factor analysis of variance are shown in Table VIII, on page 67. According to Table VIII, the Nonusers Group were significantly more Establishment-conforming than the Users Group ($F = 7.09$, $df = 1, 204$, $p < .01$). The null hypothesis is not supported.

c.3) Independence - It was hypothesized that nonusers and users would not differ in Independence, which was measured in terms of consistent responses on both presentations of the semantic differential. A comparison of the two groups in terms of Independence is shown in Table IX, on page 68. Table IX indicates that nonusers showed significantly more Independence than users ($F = 4.67$, $df = 1, 204$, $p < .05$). Thus, the null hypothesis is not supported.

3. Conformity versus Anticonformity in Attitude Change

To determine the relative influence on attitude change of conformity to one set of norms and anticonformity to another, four indices of net change were computed within each of the two

TABLE VIII

ONE-FACTOR, FIXED LEVELS ANOVA:
COMPARISON OF ESTABLISHMENT CONFORMITY IN NONUSERS AND USERS AS MEASURED BY RESPONSE SHIFT IN DIRECTION OF ESTABLISHMENT NORMS ON SEMANTIC DIFFERENTIAL

Source	df	SS	MS	F	p
Between	1	610	610	7.09	.01
Within	204	17,621	86		

TABLE IX

ONE-FACTOR, FIXED LEVELS ANOVA:
COMPARISON OF INDEPENDENCE IN NONUSERS AND USERS
AS MEASURED BY RESPONSE CONSISTENCY ON SEMANTIC
DIFFERENTIAL FOLLOWING FALSE INTERPOLATED NORMS

Source	df	SS	MS	F	p
Between	1	505	505	4.67	.05
Within	204	22,123	108		

groups. These were: net change toward Establishment norms, net change toward Peer norms, net change toward Peer-plus-Establishment norms, and net change away from Peer-plus-Establishment norms. The indices were derived by dividing mean observed change toward a particular norm by mean possible change toward that norm. Mean possible change was defined as the average of the total differences within a group between subjects' positions on the first attitude scale and the positions of the normative responses in question, which appeared on the second attitude scale.

Within each of the two groups separately, the index of net change toward Peer-plus-Establishment norms was compared with each of the other three indices. It was assumed that, if both Peer and Establishment groups had some positive valence, although one valence might be stronger than the other, then the interaction of the two positive valences should produce more change toward Peer-plus-Establishment norms than toward either Peer or Establishment norms. To the extent that either the Peer or the Establishment group had a negative valence, change toward the Peer-plus-Establishment norms would be reduced relative to change toward the other norms.

On the assumption of an additive model, two further predictions might be made. If attitude change occurred solely in response to the positive valence of one group, the other group having a neutral valence, net change toward the Peer-plus-

Establishment norms should equal net change toward the preferred norm. If, on the other hand, attitude change occurred solely in response to the negative valence of one group, the other group having a neutral valence, net change away from the Peer-plus-Establishment norms should equal net change toward the preferred norms. In this last event, attitude change would be seen as a pure anticonformity response. The reason for the apparent contradiction in the last prediction is that, whereas anticonformity to one of the opposed norms could only be expressed by conformity to the other, anticonformity would be expressed directly in relation to the Peer-plus-Establishment norms, since they represented a consensus at the centre of the scale, with the possibility of change toward either extreme.

The comparisons of the four indices of net change within the Users Group are shown in Table X. Comparisons within the Nonusers Group are shown in Table XI.

Table X indicates that, in the Users Group, the index of net change toward Peer-plus-Establishment norms was .44, more than twice as large as the index of change toward Peer norms (.20), and four times as large as the index of net change toward Establishment norms (.10). The index of net change away from Peer-plus-Establishment norms was .03, much smaller than any of the other indices. It appears that, although Peers had more positive valence than Establishment for marijuana users, both had some positive valence.

TABLE X

USERS GROUP: INDICES
OF NET ATTITUDE CHANGE

	Toward Peers	Toward Establishment	Toward P-Plus-E	Away From P-Plus-E
Mean Observed Change	23	12	8	1
Mean Possible Change	114	121	18	36
Index of Net Change	.20	.10	.44	.03

TABLE XI

NONUSERS GROUP: INDICES
OF NET ATTITUDE CHANGE

	Toward Peers	Toward Establishment	Toward P-Plus-E	Away From P-Plus-E
Mean Observed Change	17	16	8	2
Mean Possible Change	112	122	9	36
Index of Net Change	.15	.13	.89	.05

From Table XI it can be seen that, in the Nonusers Group, the index of net change toward Peer-plus-Establishment norms was .89, approximately five times as large as the indices of net change toward the Peer and Establishment norms, which were .15 and .13 respectively. As in the Users Group, the index of net change away from Peer-plus-Establishment norms was a negligible .05. Seemingly, Peers and Establishment had almost equally positive valence for the nonusers, but Peers and Establishment together had an infinitely greater positive valence.

From the results of the data, it can be concluded that anticonformity was probably not a factor in the responses of either users or nonusers. From the great discrepancy in size between the index of net change toward Peer-plus-Establishment norms and the other indices, however, it appears that either Peer-plus-Establishment norms may have a positive valence over and above the summated valences of Peers and Establishment, or that the valences of Peers and Establishment interact in a nonadditive manner in the Peer-plus-Establishment norms. This would seem to be particularly true in the case of nonusers.

4. Summary

It was hypothesized that nonusers and users would differ in respect to direction of conformity behaviour, but not degree. The results of the analyses reported above have supported the first of these predictions but not the second. Users appear

to be more subject than nonusers to Peer conformity pressures, while nonusers appear to be more susceptible than users to conformity pressures stemming from the Establishment. Contrary to prediction, nonusers also seem to be somewhat more independent than users.

It was also hypothesized that, regardless of direction, conformity on the part of both users and nonusers would reflect attraction to one group at least as much as rejection of the other. This prediction was supported. Anticonformity among University of Ottawa students appears to be minimal.

The implications of these results are discussed in the succeeding chapter.

CHAPTER IV

DISCUSSION OF RESULTS

The purpose of this research has been to examine drug-using behaviour on the part of university students within a social conformity framework. To this end, 206 male undergraduate students on the University of Ottawa campus have been classified as nonusers or users of drugs on the basis of behaviour, attitudes and knowledge concerning drugs. These two groups have been compared with respect to sources of conformity pressure to which each is more susceptible, and with respect to independence of conformity pressure.

Four specific predictions have been tested. These are listed below:

1. Marijuana users on the university campus are more susceptible than nonusers to peer conformity pressures.

2. Nonusers of drugs on the university campus are more susceptible than marijuana users to conformity pressures from the establishment.

3. Users and nonusers of marijuana on the university campus do not differ in degree of independence of conformity pressures, when direction of conformity pressure is not taken into account.

4. Regardless of direction, conformity on the part of both users and nonusers reflects attraction to one group at

least as much as rejection of the other.

The results of statistical analysis have supported the first two of the above predictions and the fourth, but not the third. In this chapter, the implications of the research results are discussed, according to the following outline. First, the distinctions between nonusers and users in terms of attitude and knowledge regarding drugs are considered. Then the hypotheses regarding conformity behaviour are discussed in light of the research results, and further research possibilities are considered. Next, conformity and anticonformity are considered in relation to attitude change. In the final sub-section of the chapter, the predictions, results, and implications of the research are briefly discussed.

1. Nonusers versus Users: Knowledge and Attitudes Regarding Drugs.

As in the previous investigations of De Fleur & Garrett[1] and Wiener[2], users and nonusers in the present research are clearly discriminable in terms of knowledge and attitudes concerning drugs. In general, users know more

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1 Lois B. De Fleur and Gerald R. Garrett, "Dimensions of Marijuana Usage in a Land-Grant University", in Journal of Counselling Psychology, Vol. 17, No. 5, 1970, p. 468 - 476.

2 R. S. P. Wiener, Drugs and School Children, Longman, London, 1970, VII - 258 p.

about drugs, have more favourable attitudes toward them, and advocate greater leniency in the laws regarding drugs. These observations may have certain implications relevant to the understanding and control of drug-using behaviour. The first such implication concerns drug education.

Education concerning drugs is sometimes seen as a means of reducing drug-using behaviour. This belief, however, seems inconsistent with the observation that drug users know more about drugs than nonusers. It is possible, on the other hand, that education could have an indirect effect by changing attitudes toward drug use. Research in the area of drug use, including the research presently under discussion, suggests that attitude change may be one focal point of efforts directed at changing behaviour.

The present research seems to support the notion that both behaviour and value system separate the young drug user from nonusers, whether the nonusers are members of the peer group or members of the establishment. Brill[3] and

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3 Henry Brill, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles A. Thomas, Springfield, Ill., 1970, p. 25 - 42.

Suchman[4], among others, have commented on the intimate linkage between the behaviour of using marijuana and the value system accompanying the behaviour. Brill[5], in particular, has discussed the quasi-religious overtones of what he describes as the "pro-drug mystique". Grinspoon[6] has reported that the social and political correlates of the marijuana user's value system have a dominant theme of social concern. In the Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs[7], the proselytizing tendencies of young drug users are noted. All of this seems to suggest that any efforts directed toward changing drug-using behaviour should probably take the associated value system very much into account, recognizing both its importance and its positive value to its adherents as an alternative to current cultural mores. It seems reasonable to suggest that, when

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4 Edward A. Suchman, "The Hang-Loose Ethic and the Spirit of Drug Use", in Journal of Health and Social Behaviour, Vol. 9, 1968, p. 146 - 155.

5 Henry Brill, op. cit., p. 27.

6 Lester Grinspoon, Marijuana Reconsidered, Harvard University Press, Cambridge, Mass., 1971, XI - 433 p.

7 Department of National Health and Welfare, Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs, Queen's Printer for Canada, Ottawa, 1970, text, 623 p., appendices, 127 p.

behaviour and belief are so closely linked, if either is to change, both must change. How such a change might come about is considered at a later point in this discussion.

2. Conformity and Drug-Using Behaviour

As noted earlier in this report, the relationship between drug-using behaviour and certain attitudinal factors constitutes one reason for viewing drug-using behaviour within a conformity framework. The second reason for employing such a framework is the frequently observed interaction, in drug-using behaviour, between social influences and individual needs for group identification[8, 9]. In the present investigation, susceptibility of attitude to change through social influence was studied in relation to drug-using behaviour. The four predictions which were tested are discussed below, in order of their occurrence earlier in the report.

a) Peer Conformity - It was hypothesized that users would display more Peer Conformity than nonusers. This hypothesis was supported ($F = 10.30$, $df = 1, 204$,

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8 E. Goode, "Multiple Drug Use Among Marijuana Smokers", in Social Problems, Vol. 17, 1969, p. 48 - 64.

9 Department of National Health and Welfare, op. cit., p. 334.

$p < .01$), an observation which may be relevant to the discussion earlier in this chapter, regarding the understanding and control of drug-using behaviour.

For some writers, the major explanatory emphasis with respect to drug-using behaviour has been on its non-conforming aspects, particularly with regard to establishment values[10]. Other writers, however, have implied a group identification factor in the illegal use of drugs, without specifically linking the two tendencies[11, 12]. The most obvious implication of a relationship between conformity and drug-using behaviour is inherent in the

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10 Elna H. White, Joseph C. Schoolar, and Charles P. Cohen, "Psychological Barriers to Communication in Drug Abusers", in J. R. Wittenborn, J. P. Smith and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1970, p. 253 - 263.

11 D. L. Farnsworth and T. W. Scott, "Marijuana: The Conditions and Consequences of Use and the Treatment of Users", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Drugs and Youth: Proceedings of the Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1969, p. 168 - 177, quoted by Lester Grinspoon, Marijuana Reconsidered, Harvard University Press, Cambridge, Ill., 1971, p. 181.

12 Department of National Health and Welfare, op. cit., p. 334.

comments of Smart, et al[13]:

> Drug use appears to be more consistently related to Normlessness than to Powerlessness or Social Isolation. Apparently students who experience a lack of norms or who are acutely aware of conflicting norms tend to use drugs. (...) The use of drugs probably is part of the search for identity and the establishment of meaningful norms.

To paraphrase the above authors, students who are unwilling or unable to conform to parental norms may be searching for or attempting to establish norms to which they can conform. In this very important sense, the illicit use of drugs is not antisocial behaviour. If this conclusion is valid, and the evidence of this research concerning anticonformity suggests that it is, then, far from being an apology for drug-using behaviour or an implicit permission, it provides a possible guide to the control of such behaviour.

As McKeachie & Doyle[14] have pointed out, the norms and value systems of any social group are inherently related, values helping to integrate the norms into a consistent system. The close relationship between the

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13 Reginald G. Smart, Dianne Fejer, and Jim White, The Extent of Drug Use in Metropolitan Toronto Schools: A Study of Changes from 1968 to 1970, The Addiction Research Foundation, Toronto, 1970, text, 49 p; appendices, 82 p.

14 Wilbert James McKeachie and Charlotte Lackner Doyle, Psychology, Second Edition, Addison-Wesley Publishing Company, Reading, Mass., 1970, XV - 749 p.

norms and values of marijuana users has been noted earlier in this chapter. At the same time, it was hypothesized that, if either norms or values change, both will probably change. The question of effecting a change in either remains.

From the above, it would seem that communication directed toward the marijuana user's value system may be a highly effective factor in changing his behaviour. Since students who tend to use drugs non-medically also appear to be relatively susceptible to peer pressure, it may be that the most effective presentation of alternative norms and values will be made by members of the peer group.

The research reviewed in the first chapter of this report provides some support for the above suggestion. A number of authors were cited as reporting peer group influence on attitudes and values in university students, including ethnic attitudes[15], evaluation of consumer

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15 R. C. Gardner and Donald M. Taylor, "Ethnic Stereotypes: Their Effects on Person Perception", in Canadian Journal of Psychology, Vol. 22, No. 4, 1968, p. 267 - 276.

products[16], aesthetic judgments[17, 18, 19], and judgments of political candidates[20]. Hollander[21], in his earlier-quoted study of the relationship between leadership and conformity, noted that an individual's ability to introduce new norms in a group is positively related to his proven competence on some group-salient task and to his past conformity to existing group norms. In other words, the most influential members of the group, by definition those who have most consistently and vigorously adhered to the group's existing

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16 Walter Gruen, "Internal and External Conformity and Some Common American Attitudes", in Psychological Reports, Vol. 8, 1961, p. 368.

17 E. P. Hollander and R. H. Willis, "Conformity, Independence and Anticonformity as Determiners of Perceived Influence and Attraction", paper read at Eastern Psychological Association, Philadelphia, Pa., April, 1964, quoted by E. P. Hollander, Leaders, Groups and Influence, Oxford University Press, New York, 1964, p. 161 - 178.

18 Joseph M. Madden, "Personal Preferences and Conformity", in Journal of Social Psychology, Vol. 52, 1960, p. 269 - 277.

19 B. Mausner, "Studies in Social Interaction: III. The Effect of Variation in One Partner's Prestige on Interaction of Observer Pairs", in Journal of Applied Psychology, Vol. 37, 1953, p. 391 - 393.

20 Frank P. Scioli, "Conformity in Small Groups: the Relationship Between Political Attitude and Overt Behaviour", in Comparative Group Studies, Vol. 2, No. 1, 1971, p. 53 - 64.

21 E. P. Hollander, "Competence and Conformity in the Acceptance of Influence", in Journal of Abnormal and Social Psychology, Vol. 61, 1960, p. 365 - 369.

norms and values, can most effectively introduce new norms. Because of the close relationship between norms and values, it would seem to follow that the same individuals might be highly effective in introducing new values. The current social scene in the United States provides a striking example of both possibilities in the case of the Black Panther leader, Bobby Seale[22, 23]. Seale's adoption of new norms and/or values has coincided with a marked movement away from the militant stance formerly adopted by the Black Panthers.

In summary, it is argued that, because of the close relationship between value system and norms within groups, communication directed toward changes in one will probably contribute significantly to changes in the other.
The literature on conformity suggests that changes are sometimes most effectively initiated from within the peer group. An example from the current social scene indicates that this may be the case even when the original value system was anti-establishment and the change is in the direction of the

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22 Facts on File, Incorporated, news item in Facts on File of New York, Vol. 32, No. 1644, issue of Apr. 30 - May 6, 1972, p. 326, col. C-3.

23 Facts on File, Incorporated, news item in Facts on File of New York, Vol. 32, No. 1646, issue of May 14 - May 20, 1972, p. 369, col. A-1.

establishment. Because of the apparent significance of their value system to marijuana users and because the present research indicates that marijuana users may be relatively susceptible to peer group pressures, these observations seem highly relevant to efforts aimed at altering their behaviour.

b) Establishment Conformity - The second prediction regarding source of social pressure concerned the Nonusers Group. It was predicted that nonusers would display significantly more Establishment Conformity than users. This hypothesis was supported ($F = 7.09$, $df = 1, 204$, $p < .01$). It should be noted, however, that this difference does not indicate a preference on the part of nonusers for establishment values as opposed to peer values. It will be recalled that, according to Table VI, which showed the means for different response categories on the part of nonusers, the mean for Establishment Conformity in the Nonusers Group was sixteen, actually one point less than the mean of seventeen for Peer Conformity. Apparently, although nonusers are more establishment-conforming and less peer-conforming than the users, they do not, as the users do, differentiate between the two sources of influence.

At first glance, the above observations seem inconsistent with the literature in which characteristics of nonusers have been noted, but the inconsistency may be more apparent than real.

While Blum[24], McGlothlin & McGlothlin[25], and Smart, Fejer & White[26] have reported nonusers to be more conservative, or conventional than users, they have not observed any specific tendency to assert or reject the validity of a particular set of values, peer or establishment. It may be that the conservatism of nonusers, relative to users, represents a different level of social development rather than a belief system. In this respect, the behaviour of nonusers suggests some interesting possibilities when considered in conjunction with other aspects of their conformity behaviour. These are considered in the sub-section that immediately follows.

c) Independence - It was hypothesized that nonusers and users would not differ significantly in Independence. Contrary to prediction, however, nonusers displayed significantly more Independence than users ($F = 4.67$, $df = 1, 204$, $p < .05$). Thus, the hypothesis was not

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24 R. H. Blum, op. cit., p. 59 - 61.

25 W. S. McGlothlin, S. Cohen and M. S. McGlothlin, "Personality and Attitude Changes in Volunteer Subjects Following Repeated Administration of LSD", paper presented before the Fifth International Congress, Collegium Neuropsychopharmacologicum, March, 1967, quoted by R. H. Blum, Students and Drugs, Jossey-Bass, San Francisco, 1969, p. 25 - 26.

26 Reginald G. Smart, Dianne Fejer, and Jim White, op. cit., p. 43.

supported. This observation will be considered together with the observation relative to hypothesis 2.

To recapitulate and paraphrase hypotheses 2 and 3, it was predicted that nonusers and users, when they conformed, would conform in different directions; they would not, however, differ in total tendency to conform. Unexpectedly, they differed in both respects. These data lend themselves to two possible interpretations. The first places explanatory emphasis on the users rather than the non-users.

It may be that the difference in independence between the two groups is related to a sampling bias in the Users Group rather than to any behavioural tendency on the part of nonusers. Assignment to the Users or the Nonusers Group was made largely on the basis of self-report. While participation in the study was on a voluntary basis it has been observed that implicit social pressures exist in some research situations[27]. It is possible that only those users who were particularly susceptible to such implied social pressures identified themselves as users on the drug questionnaire. Those less susceptible to such pressures may

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27 .R. Rosenthal, Experimenter Effects in Behaviour Research, Appleton-Century-Crofts, New York, 1966, XIII - 464 p.

have been reluctant to do so because of the antisocial aspects of the behaviour they were being asked to report. If so, it seems pertinent to consider how such relatively independent individuals might have avoided identifying themselves as users.

One possibility is that there may be a relationship between independence and nonattendance in class, and that the more independent users were not in class at all. Even if there were such a relationship, however, it might be expected to operate equally among users and nonusers, simply on the basis of chance. Thus, the evidence for such a source of sampling bias seems somewhat tenuous. It is possible, however, that, even if they were in class, the more independent users refused to participate in the research. Participation, as noted above, was on a voluntary basis and the more independent users may have been over-represented among those refusing to take part. The number of such students, however, was very small, probably less than fifteen in all. Even if all fifteen were highly independent users, which seems unlikely, it appears equally unlikely that they were sufficient in number to constitute a source of sampling bias.

Finally, even if they were in class and participated in the research, the more independent nonusers may have misrepresented themselves on the drug questionnaire. It is

true that the drug questionnaire discriminated between users and nonusers at a greater than chance level of significance, both in the validity study and in the research proper. Also, the one subject whose responses, both on the drug questionnaire and the conformity data, were highly discrepant from those of the group to which he claimed to belong, was an individual who reported himself as a user (see Chapter III, page 61). Nevertheless, it may be pertinent, at this point, to consider the data from the drug questionnaire more closely.

Analysis of responses to the drug questionnaire indicated that the Nonusers Group were more variable than the Users Group on knowledge of drugs. The variance of the Nonusers Group on knowledge of drugs was 856.67: approximately three times the variance of the Users Group, which was 87.36. The results of an F test to determine the significance of differences in variance between independent samples are shown in Appendix 3. They indicate that the variance of the nonusers was significantly greater than the variance of the users ($F = 7.69$, $df = 135, 69$, $p < .001$). Inspection of the raw data reveals that, while users generally were very knowledgeable about drugs, nonusers ranged from equal knowledgeability to general ignorance on the subject.

It is possible to interpret the above observations in light of the sampling bias hypothesis presently under consideration. According to such an interpretation, it might be postulated that those subjects who appeared to be highly knowledgeable nonusers were in fact users who were reluctant to identify themselves as such but nevertheless wanted to show off their knowledge of drugs. The data from the validity study, however, argue against such a hypothesis.

Interestingly, the same difference in variability occurs in the validity study, where nonusers have a variance of 133.21 compared with the users' variance of 48.5. Appendix 4 shows the results of an F test to determine the significance of differences in variance between independent samples. It indicates that this difference, too, is significant ($F = 8.47$, $df = 19, 10$, $p < .001$). Apparently, some of the nonusers in the validity study knew a great deal more about drugs than other members of their group.

It will be recalled that the Nonusers Group in the validity study consisted of seminarians from St. Paul's University. While it is possible that the more knowledgeable of these were users who were reluctant to identify themselves, an alternative hypothesis seems at least as feasible.

It may be that the greater diversity of knowledge regarding drugs among nonusers in both the validity study

and the research proper simply indicates a greater diversity of interest in drugs within these groups than within the two Users Groups. An argument based on this premise would explain the difference in variance between the Users Group and the Nonusers Group as follows. Many university students are exposed both to drug education programmes and to less formal sources of knowledge concerning drugs. It seems conceivable that a student could learn a great deal about drugs simply because he had an open mind, without his interest extending to the point of using drugs. A less interested or less open-minded student might have access to the same knowledge but choose to ignore or avoid it. If nonusers of both types were represented in the present sample, then the group's high variance on knowledge of drugs is not surprising. The relative homogeneity of the Users Group seems equally explicable. Those students who use drugs might be expected to display a reasonably consistent level of knowledge regarding drugs because their knowledge is based on at least one factor that is reasonably consistent for the entire group: personal experience.

To recapitulate thus far: it has been suggested that the difference in independence between the Nonusers Group and the Users Group may be interpreted in two different ways. According to the first interpretation, the apparently greater

independence of nonusers is an artifact, attributable to a sampling bias in the Users Group. The more independent users, according to this argument, may have been under-represented in the sample for any of three possible reasons. Either they were not in class or, if they were in class, they refused to participate, or they misrepresented themselves. The relatively high variance of the Nonusers Group in terms of knowledge of drugs has been cited as possibly supporting the last of these three alternatives.

Each of the above hypotheses, after careful examination, has appeared somewhat unlikely. It has been suggested, instead, that the relative variance of the nonusers regarding knowledge of drugs may reflect a relative variance of interest in drugs within the Nonusers Group, possibly related to differences in open-mindedness. While this suggestion is at least as feasible as the suggestion of sampling bias it does not, by itself, shed any light on the relative independence of the Nonusers Group. It is, however, relevant to an interpretation which provides a testable alternative to the untestable and apparently unsupported hypothesis of sampling bias. This second interpretation, while it takes into account the behaviour of both groups, tends to focus more on the Nonusers Group.

To summarize and compare the behaviour of users and nonusers: in evaluating a stimulus situation, users were equally as likely to use their own internalized standards as to use

peer standards. They were more likely to do either than to employ the standards of the "establishment". Nonusers, on the other hand, were more likely than users to employ their own internalized standards as reference points in evaluating a stimulus situation. They were also more likely to do so than to employ any external reference point. When they did employ an external reference point, they turned equally to peers and establishment. The problem is to establish meaningful links between the various aspects of their behaviour, and also between their behaviour and that of the users. Ausubel's[28] exposition of the socialization process may have some relevance to the establishment of these links.

According to Ausubel[29], the individual, having learned to distinguish between self and environment, moves from total dependence on authority figures through several periods of progressive social development. Of these, three periods are of particular importance to the present discussion. The first is the period of satellization, in which the child still uses the parents as guides. The second is the period of executive independence, in which the peer group becomes increasingly

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28 David P. Ausubel, Theories and Problems of Child Development, Grune and Stratton, New York, 1957, XVII - 580 p.

29 Idem, ibid, p. 282 - 313.

important. The third and final stage of social development is the period of desatellization. This period marks the point at which the individual, having tested the introjected values of his parents against peer group values and his own broadening experience, has integrated all three into his own set of internalized values. Although the age ranges encompassed by these three periods vary with individuals, the sequence is invariant, and represents a general development in the direction of increasing social maturity. While the scope of the present research does not permit definite statements regarding historical factors, this exposition may help to establish a link between the rather diverse conformity tendencies of the nonusers and their rather diverse performance in terms of knowledge of drugs.

It has been suggested that, while most university students have access to some information about drugs, not all take equal advantage of the opportunities for knowledge. Within the Nonusers Group, those who knew more about drugs may either have paid more attention to available information or have actively sought out information about drugs to a greater extent than those with less knowledge. Their interest apparently did not extend to the use of drugs, perhaps because they lacked the opportunity, perhaps because they made a decision not to use drugs. In the case of undergraduates, the second possibility

seems more likely than the first. It appears that many undergraduates, at one time or another, have the opportunity to use at least marijuana.

To return to Ausubel's[30] developmental outline, it will be recalled that, in the stage of desatellization, the individual, having compared parental and peer group values on the basis of personal knowledge or experience, opts for his own value system. Viewed within this framework, the active seeking out of information on a controversial subject such as drugs, and the subsequent making of decisions on the basis of first-hand information would seem to indicate relative social maturity. If, in fact, this is the behaviour that occurred among those nonusers who were highly knowledgeable about drugs, then it is possible that those students represent the more mature end of a social development continuum within the Nonusers Group. By the same token, the ignorance of drugs displayed by other nonusers may be related to a less mature level of social development, in which the individual is attempting to resolve the value conflicts characteristic of progression from one stage of social development to another. Riley, Riley & Moore[31] have reported that

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30 David P. Ausubel, op. cit., p. 282 - 313.

31 M. W. Riley, J. W. Riley and M. E. Moore, "Adolescent Values and the Riesman Typology: an Empirical Analysis", in S. M. Lipset and L. Lowenthal (Eds.), Culture and Social Character: the Work of David Riesman Reviewed, Free Press of Glencoe, Glencoe, Ill., 1961, p. 370 - 385.

the adolescent's values represent a compromise between the values of his parents and those of his peers as he sees them. It would be natural, at the point of reaching such a compromise, for an individual to avoid controversial areas of behaviour that might heighten his conflicts. Within this frame of reference, the users would be seen as occupying a midpoint on the postulated developmental continuum, where peer group values are predominant.

In summary, the Nonusers Group may encompass a broader range of development than the Users, less mature at one extreme and more mature at the other. In terms of conformity, the less mature would be relatively open to both peer and establishment influences. Those who were relatively independent, however, would be clustered at the mature end of the continuum.

The above discussion has remained in the realm of speculation. It seems possible, however, to test the hypothesis that nonusers represent a more diverse group than users in terms of social development. To do so would require the administration of a measure, or measures, of socialization based on Ausubel's[32] theoretical formulation, in addition to the other measures administered in the present investigation. Possibly this would be a fruitful line of future research.

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32 David P. Ausubel, op. cit., p. 282 - 313.

3. Conformity and Anticonformity in Attitude Change

It was hypothesized that, regardless of direction, conformity on the part of both users and nonusers represents attraction to one group at least as much as rejection of the other. To test this prediction, four indices of net attitude change were computed for each of the two groups: net change toward Peers, net change toward Establishment, net change toward Peer-plus-Establishment, and net change away from Peer-plus-Establishment. In each group, comparisons of net change toward Peer-plus-Establishment were made with each of the other indices. In both groups, net change toward Peer-plus-Establishment exceeded net change toward any of the other indices. Net change away from Peer-plus-Establishment norms, the measure of anticonformity, was smaller than the other indices in both groups. It appears that, in conforming to one group, neither users nor nonusers were displaying anticonformity to the opposing group to any extent. For users and nonusers alike, both peers and establishment had some positive valence.

The above results are consistent with the conformity data. In the Users Group they are also consistent with the literature[33] that reports marijuana use as linked more to a search for positive identity than to rejection of society's values.

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33 Lester Grinspoon, op. cit., p. 181.

One interesting feature of the indices was the discrepancy in size between the two indices of net change toward Peer-plus-Establishment norms. Nonusers changed approximately twice as much as users. Inspection of the data, however, indicates that the discrepancy is attributable to the greater tendency of users to employ the extremes of the seven-point attitude scale for their initial responses. Since Peer-plus-Establishment norms invariably appeared at the central position of the scales, this tendency increased net possible change, the divisor of the equation on which the indices were based. Hence, the index was smaller than in the Users Group, although net observed change is the same in both groups.

Another interesting feature of the indices is the magnitude of change toward Peer-plus-Establishment norms relative to other changes. In both groups, change in the direction of Peer-plus-Establishment norms exceeded the summated changes toward Peer and Establishment groups. In the Users Group, the difference was not large but in the Nonusers Group it was considerable (see Tables V and VI, Chapter III).

In statistical terms, it appears that the interaction of Peer and Establishment valences is not described by a simple additive model. In psychological terms, it may be that Peer-plus-Establishment norms have a positive valence over and above the summated valences of Peers and Establishment. This additional valence may possibly be similar to the impact of a

unanimous majority, which Asch[34] found so much more effective than a nonunanimous majority in inducing conformity.

Given that the above hypothesis is credible, the question might arise: could a "unanimous majority" effect be strong enough to overcome any negative valence, or valences, of the components of the majority? Except in a face-to-face confrontation, it seems unlikely. Deutsch & Gerard[35] have presented evidence to the effect that, in situations where conformity pressures exist, anonymous judgments are less subject to conformity pressure than public. The responses called for in this research are of the anonymous, rather than the public type. That is, individuals were not required to reveal their responses to anyone. It seems reasonable, therefore, to assume that the effect of a unanimous majority, if indeed it did exist, would not have been sufficient to overcome any negative valences of Peers or Establishment to such an extent as to produce the striking response to Peer-plus-Establishment norms. It appears feasible, therefore, to assume that, although a simple additive model may not describe

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34 Solomon E. Asch, "Studies of Independence and Conformity: I. A Minority of One Against a Unanimous Majority", in Psychological Monographs, Vol. 70, No. 416, 1956, 70 p.

35 Morton Deutsch and Harold B. Gerard, "A Study of Normative and Informational Social Influences Upon Individual Judgment", in Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 629 - 636.

the interaction of Peers and Establishment in the Peer-plus-Establishment norms, nevertheless it is an interaction of two positive valences.

4. Summary and Conclusions

The major purpose of this research has been to view the drug-using behaviour of university students within a social conformity framework. In the interests of achieving this goal, four specific predictions have been tested, using a completely randomized repeated measures design, with each subject acting as his own control. The predictions are as follows:

1. Marijuana users on the university campus are more susceptible than nonusers to peer conformity pressures.

2. Nonusers of drugs on the university campus are more susceptible than marijuana users to conformity pressures from the establishment.

3. Users and nonusers of marijuana on the university campus do not differ in degree of independence of conformity pressures, when direction of conformity pressure is not taken into account.

4. Regardless of direction, conformity on the part of both users and nonusers reflects attraction to one group at least as much as rejection of the other.

To test the first three of the above predictions, a semantic differential was administered twice to each of 206 English-speaking male undergraduates on the University of Ottawa campus. False norms were presented with the second semantic differential, supposedly representing the views of three groups: Peer, Establishment, and Peer-plus-Establishment. Following administration of the two semantic differentials, subjects were classified, on the basis of responses to a drug questionnaire, as users or nonusers. The two groups were then compared on direction and extent of attitude change on the semantic differential in response to the false norms.

To test the fourth of the above predictions, four indices of attitude change were computed for each group: toward Peers, toward Establishment, toward Peer-plus-Establishment, and away from Peer-plus-Establishment. In each group, the index of change toward Peer-plus-Establishment was compared with each of the other indices. The assumption was that attitude change inspired more by conformity than by anticonformity would result in more change toward Peer-plus-Establishment norms than toward either Peer or Establishment norms. Attitude change inspired chiefly by anticonformity, on the other hand, would produce change away from Peer-plus-Establishment norms.

The between-group data were analyzed by means of three one-factor fixed levels analyses of variance. The analysis of the relative effects of conformity and anticonformity has been

presented above. The results of the analyses are as follows:

1. Null hypothesis 1 was not supported. On the University of Ottawa campus, marijuana users appear to be more susceptible than nonusers to peer influence.

2. Null hypothesis 2 was not supported. On the University of Ottawa campus, nonusers appear to be more susceptible than users to establishment influence.

3. Null hypothesis 3 was not supported. On the University of Ottawa campus, nonusers appear to be more independent of social influence than marijuana users, when source of influence is not taken into account.

4. Null hypothesis 4 was not supported. On the University of Ottawa campus, attitude change on the part of both users and nonusers, regardless of direction, appears to reflect conformity to a greater extent than anticonformity.

With respect to the above results, the following general conclusions may be drawn:

1. In attempting to alter drug-using behaviour, it may be useful to focus on the value system linked to the behaviour. It is also suggested that the most effective leadership in this respect might come from the peer group itself.

2. While it is possible that the relative independence of nonusers is an artifact, attributable to a sampling bias in the Users Group, the data provide little support for such a hypothesis. A more testable proposition is that nonusers represent a more diverse group than users from the viewpoint of social development, and that the more mature nonusers are more independent of social influence than are less mature non-users, or users.

3. Relative susceptibility to a particular source of influence does not necessarily reflect, on the part of either users or nonusers, rejection of an opposing source of influence.

Suggested research topics include an investigation of possible relationships between level of social development and conformity, particularly in nonusers. Nonusers, in general, have been paid relatively little attention. A clearer definition of their characteristics and values might provide useful insights into the behaviour of both nonusers and users. Another, possibly more basic problem, is the establishment of the direction of relationship between conformity and drug-using behaviour; i.e., does peer conformity lead to drug-using behaviour, or vice versa? In either case, is the relationship between establishment conformity and nonuse in the same direction or the opposite?

The most important conclusion to be drawn, in the true sense of "understanding" drug-using behaviour, appears to be that young marijuana users on the University of Ottawa campus are not antisocial in the sense of rejecting all value systems. Values are as important to this subgroup as to those who oppose the non-medical use of drugs. The social implications of this conclusion are complex but optimistic.

BIBLIOGRAPHY

Asch, Solomon E., "Studies of Independence and Conformity: I. A Minority of One Against a Unanimous Majority", in Psychological Monographs, Vol. 70, No. 416, 1956, 70 p.

The classic model for many investigations of personal influence in face-to-face confrontations. A good account of behaviour and motivations in such situations, with relevant variations of the stimulus situation. Should be read by anyone interested in conformity.

Ausubel, David P., Theories and Problems of Child Development, Grune and Stratton, New York, 1957, XVII - 580 p.

Rather difficult to read but presents a thoroughly-developed and thoughtful exposition of child development. The section on ego development has been referred to for the interpretation of conformity behaviour among nonusers.

Blum, R. H., Students and Drugs, Jossey-Bass, San Francisco, 1969, XIX - 399 p.

A well-designed and comprehensive survey of drug behaviour on the American campus. Reviews the literature, and presents demographic and personality data. An important contribution to the drug literature.

Brill, Henry, "Pro-Drug Dialectic Communication on Drug Abuse and the Marijuana Red Herring", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles A. Thomas, Springfield, Ill., 1970, p. 25 - 42.

An interesting account of the ideological background of the pro-drug movement.

Crutchfield, R. S., "Conformity and Character", in American Psychologist, Vol. 10, 1955, p. 191 - 198.

The model for many conformity studies in which face-to-face confrontations are replaced by simulated groups. Presents a range of experimental tasks. Of particular interest methodologically.

De Fleur, Lois B. and Garrett, Gerald R., "Dimensions of Marijuana Usage in a Land-Grant University", in Journal of Counselling Psychology, Vol. 17, No. 5, 1970, p. 468 - 476.

A useful survey of amount and type of drug use, with a comparison of users and nonusers in terms of knowledge and attitude concerning drugs. Parts of the questionnaire are employed in this thesis.

Department of National Health and Welfare, Interim Report of the Commission of Inquiry Into the Non-Medical Use of Drugs, Queen's Printer for Canada, Ottawa, 1970, text, 625 p., appendices, 127 p.

A "must". A beautifully written survey of all drug use in Canada, including characteristics of drugs, their physiological and psychological effects; motivation for drug use, the laws regarding use of drugs, and a review of the literature.

Farnsworth, D. L. and Scott, T. W., "Marijuana: the Conditions and Consequences of Use and the Treatment of Users", in J. R. Wittenborn, J. P. Smith, and Sarah A. Wittenborn, (Eds.), Drugs and Youth: Proceedings of the Rutgers Symposium on Drug Abuse, Charles C. Thomas, Springfield, Ill., 1969, p. 168 - 177, quoted by L. Grinspoon, Marijuana Reconsidered, Harvard University Press, Cambridge, 1971, p. 181.

Relevant to an investigation of direction of conformity. The authors interviewed students regarding motivation for using marijuana. A group conformity motive emerged clearly.

Goode, E., "Multiple Drug Use Among Marijuana Smokers", in Social Problems, Vol. 17, 1969, p. 48 - 64.

A purely descriptive but well argued exposition of drug use as involving a subculture with its own values.

Grinspoon, Lester, Marijuana Reconsidered, Harvard University Press, Cambridge, Mass., 1971, XI - 433 p.

A well-balanced and highly objective account of positive and negative attitudes surrounding drug use.

Milgram, Stanley, "Some Conditions of Obedience and Disobedience to Authority", in Human Relations, Vol. 18, 1965, p. 57 - 76.

A very important contribution to research on conformity. Of particular interest because cross pressures to conformity are introduced in some conditions.

Osgood, C. E., "The Nature and Measurement of Meaning", in Psychological Bulletin, Vol. 49, 1952, p. 197 - 237.

Outlines the rationale, purposes and development of the semantic differential, which was used in this thesis.

Smart, Reginald G., Fejer, Dianne, and White, Jim, The Extent of Drug Use in Metropolitan Toronto Schools: A Study of Changes from 1968 to 1970, The Addiction Research Foundation, Toronto, 1970, text, 49 p; appendices, 82 p.

A thorough, well-designed survey of drug use within a specific area. Includes a valuable discussion of drug use and alienation. Some of the questions regarding drug-using behaviour were employed in this research.

Suchman, Edward A., "The Hang-Loose Ethic and the Spirit of Drug Use", in Journal of Health and Social Behaviour, Vol. 9, 1968, p. 146 - 155.

A good description of the campus drug user's value system.

Tart, Charles T., On Being Stoned, Science and Behaviour Books, Palo Alto, Cal., 1971, XVII - 333 p.

Another "must": a remarkable research of the phenomenological experience of using drugs. The definition of "users" in this thesis was based on Tart's frequency data.

Wiener, R. S. P., Drugs and School Children, Longman, London, 1970, VII - 238 p.

Very useful; a well presented and thorough comparison of users and nonusers. Parts of the questionnaire were employed in this thesis.

Willis, R. H. and Hollander, E. P., "An Experimental Study of Three Response Modes in Social Influence Situations", in Journal of Abnormal and Social Psychology, Vol. 69, 1964, p. 150 - 156.

Describes and tests a two-dimensional model of conformity, involving three response modes: conformity, anticonformity, and independence. Important theoretically.

Wittenborn, J. R., Smith, Jean Paul, and Wittenborn, Sarah A., (Eds.), Communication and Drug Abuse: Proceedings of the Second Rutgers Symposium on Drug Abuse, Charles A. Thomas, Springfield, Ill., 1970, XIII - 542 p.

An excellent compendium of different approaches to a variety of problems related to drug-using behaviour. Essential reading in the area.

APPENDIX 1

ATTITUDE SCALES[1]

THIS SURVEY IS AN ATTEMPT TO FIND OUT THE ATTITUDES OF STUDENTS WITH RESPECT TO MINORITY GROUPS. DO NOT SIGN YOUR NAME. IN THE SPACES PROVIDED IN THE TOP RIGHT-HAND CORNER OF THIS PAGE PRINT THE FIRST TWO LETTERS OF YOUR FIRST NAME IN REVERSE ORDER AND THE FIRST TWO LETTERS OF YOUR LAST NAME IN REVERSE ORDER.

EXAMPLE: (IF YOUR NAME IS NORMAN SCOTT) | O | N | C | S |

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1 The scales are shown here as referring to Jewish people. In the research, the same scales were repeated with reference to Negroes and Foreigners.

The white paper on youth has created a great deal of interest in the attitudes of young people toward the culture in which they live. We would like to gain a real understanding of the feelings and ideas of university students in our present society. In order to do so, we are going to ask you about some important issues. First, we would like to know your attitudes toward minority groups.

When you turn the page, you will see 48 pairs of words, opposite in meaning, separated by 7 spaces. The same 48 pairs of words will occur 3 times. The first time, they will be preceded by the words "Jewish People". The second time, they will be preceded by the word "Negroes". The third time they will be preceded by the word "Foreigners". You are to rate these 3 groups of people: Jewish people, Negroes, and Foreigners, on each of the 48 pairs of words.

Look at the example below. As you can see, the heading says "Jewish People". At the left-hand side of the page is the word "optimistic". At the right-hand side of the page is the word "pessimistic". Between the two words are 7 spaces. You are to place an "X" in the space which represents your impression of Jewish people with regard to optimism and pessimism; e.g.,

JEWISH PEOPLE

optimistic ___:___:___:_X_:___:___:___ pessimistic

The more similar Jewish people seem to the word at the left side of the page, the nearer the left side you will place your

"X". The more similar they seem to the word at the right side of the page, the nearer the right side you will place your "X". Treat each pair of words in the same way. Work as rapidly as you can and do not worry or puzzle over individual items. It is your first impressions that are of interest. On the other hand, please do not be careless, because we are very interested in your true impressions.

Remember, there are no right or wrong answers. This is not a test and only the directors of this research project will have access to your answers.

JEWISH PEOPLE

1.	interesting	___:___:___:___:___:___:___	boring
2.	prejudiced	___:___:___:___:___:___:___	unprejudiced
3.	brave	___:___:___:___:___:___:___	cowardly
4.	handsome	___:___:___:___:___:___:___	ugly
5.	colorful	___:___:___:___:___:___:___	colorless
6.	friendly	___:___:___:___:___:___:___	unfriendly
7.	honest	___:___:___:___:___:___:___	dishonest
8.	stupid	___:___:___:___:___:___:___	smart
9.	kind	___:___:___:___:___:___:___	cruel
10.	pleasant	___:___:___:___:___:___:___	unpleasant
11.	polite	___:___:___:___:___:___:___	impolite
12.	sincere	___:___:___:___:___:___:___	insincere
13.	successful	___:___:___:___:___:___:___	unsuccessful

14.	secure	___:___:___:___:___:___:___	insecure
15.	dependable	___:___:___:___:___:___:___	undependable
16.	permissive	___:___:___:___:___:___:___	strict
17.	leader	___:___:___:___:___:___:___	follower
18.	mature	___:___:___:___:___:___:___	immature
19.	stable	___:___:___:___:___:___:___	unstable
20.	happy	___:___:___:___:___:___:___	sad
21.	popular	___:___:___:___:___:___:___	unpopular
22.	hard-working	___:___:___:___:___:___:___	lazy
23.	ambitious	___:___:___:___:___:___:___	unambitious
24.	tall	___:___:___:___:___:___:___	short
25.	thoughtful	___:___:___:___:___:___:___	thoughtless
26.	humorous	___:___:___:___:___:___:___	humorless
27.	self-confident	___:___:___:___:___:___:___	not confident
28.	generous	___:___:___:___:___:___:___	ungenerous
29.	entertaining	___:___:___:___:___:___:___	not entertaining
30.	nervous	___:___:___:___:___:___:___	not nervous
31.	selfish	___:___:___:___:___:___:___	unselfish
32.	reliable	___:___:___:___:___:___:___	unreliable
33.	crafty	___:___:___:___:___:___:___	not crafty
34.	have character	___:___:___:___:___:___:___	lack character
35.	passive	___:___:___:___:___:___:___	active

36. warm ___:___:___:___:___:___:___ cold

37. aggressive ___:___:___:___:___:___:___ unaggressive

38. thrifty ___:___:___:___:___:___:___ not thrifty

39. powerful ___:___:___:___:___:___:___ weak

40. dangerous ___:___:___:___:___:___:___ not dangerous

41. wise ___:___:___:___:___:___:___ foolish

42. cautious ___:___:___:___:___:___:___ not cautious

43. considerate ___:___:___:___:___:___:___ inconsiderate

44. imaginative ___:___:___:___:___:___:___ unimaginative

45. affectionate___:___:___:___:___:___:___ unaffectionate

46. religious ___:___:___:___:___:___:___ irreligious

47, dependent ___:___:___:___:___:___:___ independent

48. noisy ___:___:___:___:___:___:___ quiet

APPENDIX 2

STUDENT QUESTIONNAIRE ABOUT DRUG USE

This survey is an attempt to find out the knowledge, attitudes and practices of students with respect to drugs. Your answer sheet will be anonymous and strictly confidential. Do not sign your name. Identify yourself just as you did on the attitude scales: in the upper right-hand corner of this page, print the first two letters of your first name, reversed, followed by the first two letters of your last name, reversed.

Q. 1 - 14: PLACE A CHECK MARK BESIDE THE ANSWER THAT INDICATES YOUR PREFERENCE, OPINION, OR EXPERIENCE

1. Have you, within the past month, read any article, book, editorial, or other analysis of the use or misuse of marijuana? Yes____ No____

2. Have you discussed any aspect of the use and misuse of marijuana with anyone during the last month? Yes____ No____

3. Drugs are all right if only taken occasionally. Yes____ No____

4. Drugs are an aid to creative people. Yes____ No____

5. Drugs are not as dangerous as newspapers make out. Yes____ No____

6. Drugs can make you a fuller person. Yes____ No____

7. It is safer to drive with someone high on pot rather than with someone drunk on alcohol. Yes____ No____

8. Drugs are good because they make you self-confident. Yes____ No____

9. The risk of heroin hooking you is over exaggerated. Yes____ No____

10. It would be fine to take drugs if it were not for the police.

Yes____ No____

11. Drugs are a valuable new experience. Yes____ No____

12. Only fools get hooked on drugs. Yes____ No____

13. Pep pills are great for kicks. Yes____ No____

14. Drugs are all right if you don't take alcohol at the same time.

Yes____ No____

Q. 15 - 72: ANSWER "TRUE", "FALSE",
OR "DON'T KNOW". DO NOT GUESS

15. Using marijuana can damage a person physically.

TRUE ___
FALSE ___
DON'T KNOW ___

16. Marijuana is addictive like opium or heroin. TRUE ___
FALSE ___
DON'T KNOW ___

17. Use of marijuana is usually habit-forming. TRUE ___
FALSE ___
DON'T KNOW ___

18. Use of marijuana leads to addiction on opiate drugs.

TRUE ___

FALSE ___

DON'T KNOW ___

19. Use of marijuana heightens the sexual urge. TRUE ___

FALSE ___

DON'T KNOW ___

20. Using marijuana can lead to mental breakdown. TRUE ___

FALSE ___

DON'T KNOW ___

21. At present there are no legal restrictions on the possession of marijuana. TRUE ___

FALSE ___

DON'T KNOW ___

22. The penalty for possessing marijuana is the same as for heroin or other narcotic drugs. TRUE ___

FALSE ___

DON'T KNOW ___

23. A person caught using marijuana has committed a felony.

TRUE ___

FALSE ___

DON'T KNOW ___

24. Possession of marijuana can be a federal offense.

TRUE ___

FALSE ___

DON'T KNOW ___

25. Using marijuana is legal if it was obtained from a doctor.

TRUE ___

FALSE ___

DON'T KNOW ___

26. While using and selling marijuana are illegal, it is perfectly legal to grow it.

TRUE ___

FALSE ___

DON'T KNOW ___

27. The only way to take LSD is on a sugar lump.

TRUE ___

FALSE ___

DON'T KNOW ___

28. Marijuana is made from the same plant as heroin.

TRUE ___

FALSE ___

DON'T KNOW ___

29. Tolerance means that you come to like a drug the more you take it.

TRUE ___

FALSE ___

DON'T KNOW ___

30. Heroin costs about $5.00 a grain on the black market.

TRUE ___

FALSE ___

DON'T KNOW ___

31. Many adults are dependent upon barbiturates. TRUE ___

FALSE ___

DON'T KNOW ___

32. LSD tastes like milk. TRUE ___

FALSE ___

DON'T KNOW ___

33. Pep pills help to keep you awake. TRUE ___

FALSE ___

DON'T KNOW ___

34. Withdrawal symptoms come when you take too big a dose of a drug. TRUE ___

FALSE ___

DON'T KNOW ___

35. LSD always gives you hallucinations. TRUE ___

FALSE ___

DON'T KNOW ___

36. A reefer is cheaper to buy than a grain of heroin.

TRUE ___

FALSE ___

DON'T KNOW ___

37. Everyone always gets the same effects from a drug.

TRUE ___

FALSE ___

DON'T KNOW ___

38. Heroin at first often makes you sick.

TRUE ___

FALSE ___

DON'T KNOW ___

39. LSD is the only known psychedelic drug.

TRUE ___

FALSE ___

DON'T KNOW ___

40. As soon as you have heroin you are hooked on it.

TRUE ___

FALSE ___

DON'T KNOW ___

41. Physical addiction means that your body comes to need the drug.

TRUE ___

FALSE ___

DON'T KNOW ___

42. LSD has the same effect every time it is taken.

TRUE ___

FALSE ___

DON'T KNOW ___

43. Beginners do not always enjoy marijuana.
TRUE ___
FALSE ___
DON'T KNOW ___

44. No pep pills are addictive.
TRUE ___
FALSE ___
DON'T KNOW ___

45. Marijuana and hashish are different preparations from the same plant.
TRUE ___
FALSE ___
DON'T KNOW ___

46. The only way to take heroin is by injecting it.
TRUE ___
FALSE ___
DON'T KNOW ___

47. You can take as many pep pills as you like with no ill effects.
TRUE ___
FALSE ___
DON'T KNOW ___

48. Marijuana can be cooked and eaten as a kind of candy.
TRUE ___
FALSE ___
DON'T KNOW ___

49. Heroin is never taken in combination with any other drug.

TRUE ___

FALSE ___

DON'T KNOW ___

50. Mescaline is another name for marijuana. TRUE ___

FALSE ___

DON'T KNOW ___

51. Once you start taking pep pills you can't stop.

TRUE ___

FALSE ___

DON'T KNOW ___

52. LSD was first manufactured in Switzerland. TRUE ___

FALSE ___

DON'T KNOW ___

53. Cigarettes and alcohol are drugs. TRUE ___

FALSE ___

DON'T KNOW ___

54. Marijuana usually affects you so much that other people might think you were mad. TRUE ___

FALSE ___

DON'T KNOW ___

55. "Four and four" is a term used by doctors when referring to the number of male and female addicts.

TRUE ___

FALSE ___

DON'T KNOW ___

56. Immediately one takes LSD spectacular things happen.

TRUE ___

FALSE ___

DON'T KNOW ___

57. Drug dependency means that your life is centred around drugs.

TRUE ___

FALSE ___

DON'T KNOW ___

58. Marijuana is used by a large number of G. P.s to make patients well.

TRUE ___

FALSE ___

DON'T KNOW ___

59. No one can tell by any means whatever whether you have taken a pep pill or not.

TRUE ___

FALSE ___

DON'T KNOW ___

60. Hashish is normally cut up and smoked. TRUE ___
FALSE ___
DON'T KNOW ___

61. All pep pills look the same. TRUE ___
FALSE ___
DON'T KNOW ___

62. Once you start taking heroin regularly you keep needing more and more to get any kick. TRUE ___
FALSE ___
DON'T KNOW ___

63. Marijuana is made from the same plant as hashish.
TRUE ___
FALSE ___
DON'T KNOW ___

64. A heroin taker often starts off with a one-sixth of a grain.
TRUE ___
FALSE ___
DON'T KNOW ___

65. Cannabis looks more like LSD than marijuana. TRUE ___
FALSE ___
DON'T KNOW ___

66. Phyceptone is addictive.
TRUE ___
FALSE ___
DON'T KNOW ___

67. Amphetamines do not have the same effect as barbiturates.
TRUE ___
FALSE ___
DON'T KNOW ___

68. Like anything else, one needs a lot of LSD before it has any effect.
TRUE ___
FALSE ___
DON'T KNOW ___

69. Psilocybin is a pep pill.
TRUE ___
FALSE ___
DON'T KNOW ___

70. Heroin is grown on a heroin tree.
TRUE ___
FALSE ___
DON'T KNOW ___

71. LSD is colorless, tasteless and odorless.
TRUE ___
FALSE ___
DON'T KNOW ___

72. Marijuana can only be taken by injection.
TRUE ___
FALSE ___
DON'T KNOW ___

Q. 73 - 93: PLACE A CHECK BESIDE THE APPROPRIATE ALTERNATIVE, ACCORDING TO YOUR EXPERIENCE, KNOWLEDGE, OR OPINION.

73. In the past 6 months (since September) I have used tobacco:

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

74. In the past 6 months (since September) I have used alcohol (wine, beer, whiskey, gin, etc.)

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

75. In the past 6 months (since September) I have used marijuana

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

76. In the past 6 months (since September) I have used barbiturates (seconal, amytal, phenobarb, etc.)

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

77. In the past 6 months (since September) I have used opiates (heroin, morphine, opium, etc.)

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

78. In the past 6 months (since September) I have used speed

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

79. In the past 6 months (since September) I have used stimulants other than "speed", i.e., pep pills

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

80. In the past 6 months (since September) I have used tranquilizers

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

81. In the past 6 months (since September) I have used LSD

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

82. In the past 6 months (since September) I have used hallucinogens other than LSD, i.e., STP

a) not at all ___

b) 1 - 5 times ___

c) once a month or more ___

d) once a week or more ___

83. Which substance in this list causes the GREATEST HARM when used a lot?

a) cigarettes ___

b) marijuana ___

c) glue ___

d) alcohol ___

e) other, or any of these ___

84. What does the term "grass" refer to?

a) money ___

b) marijuana ___

c) Indian tobacco ___

d) LSD ___

e) other, or any of these ___

85. How much money does a "dime bag" of marijuana cost?

a) $1.00 ___

b) $ .10 ___

c) $100.00 ___

d) $ 10.00 ___

86. The laws regarding marijuana should be

a) made more severe ___

b) retained as they are ___

c) made more lenient ___

d) abandoned altogether ___

87. Concerning my answer to Q. 86, I feel

a) very strongly ___

b) somewhat strongly ___

c) weakly ___

d) undecided ___

88. In its natural state, marijuana is:

a) a blossom ___

b) a root ___

c) plant leaves ___

d) don't know ___

89. Marijuana grows in

a) tropics only ___

b) temperate zones ___

c) water only ___

d) don't know ___

90. Most of the marijuana used in North America comes from

a) Japan ___

b) Mexico ___

c) Europe ___

d) don't know ___

91. Marijuana is commonly taken into the body by

a) chewing it ___

b) injecting it ___

c) smoking it ___

d) don't know ___

92. Marijuana is used in the form of

a) dried leaves ___

b) a liquid ___

c) a white powder ___

d) don't know ___

93. Medically, marijuana is classified as

a) an anaesthetic ___

b) a stimulant ___

c) a depressant ___

d) don't know ___

APPENDIX 3

F MAX TEST COMPARISON: VARIANCE OF NONUSERS GROUP AND USERS GROUP ON CORRECT RESPONSES TO QUESTIONS OF KNOWLEDGE ON DRUG QUESTIONNAIRE

VARIANCE'		df	F	P
Nonusers	Users			
856.67	87.36	135, 69	7.69	.001

APPENDIX 4

VALIDITY STUDY:

F MAX TEST COMPARISON: VARIANCE OF NONUSERS GROUP AND USERS GROUP ON CORRECT RESPONSES TO QUESTIONS OF KNOWLEDGE ON DRUG QUESTIONNAIRE

VARIANCE		df	F	P
Nonusers	Users			
133.21	48.5	19, 10	8.47	.001

APPENDIX 5

PEER CONFORMITY:

INDIVIDUAL RAW SCORES

SUBJECT	USERS	NONUSERS
1	15	9
2	41	19
3	40	25
4	11	30
5	8	19
6	44	9
7	29	36
8	20	27
9	37	9
10	15	29
11	36	14
12	33	28
13	45	42
14	19	13
15	18	22
16	27	0
17	33	58
18	45	18
19	4	3
20	33	54
21	12	13
22	20	20
23	37	21
24	5	19
25	4	14

SUBJECT	USERS	NONUSERS
26	35	4
27	4	17
28	24	2
29	31	16
30	10	14
31	36	34
32	33	21
33	33	6
34	4	1
35	20	7
36	4	10
37	25	22
38	17	19
39	3	7
40	17	8
41	28	8
42	46	13
43	45	0
44	8	7
45	43	11
46	25	28
47	23	3
48	2	14
49	11	16
50	40	8
51	36	13
52	28	21
53	22	20
54	5	46

SUBJECT	USERS	NONUSERS
55	3	2
56	8	8
57	36	9
58	9	26
59	34	0
60	37	48
61	13	58
62	38	19
63	47	28
64	9	24
65	35	17
66	6	15
67	6	3
68	6	4
69	5	0
70	5	14
71		16
72		14
73		11
74		11
75		10
76		17
77		10
78		4
79		6
80		13
81		18
82		6
83		7

SUBJECT	USERS	NONUSERS
84		7
85		4
86		13
87		10
88		24
89		19
90		21
91		26
92		30
93		5
94		14
95		14
96		21
97		14
98		32
99		36
100		7
101		14
102		11
103		28
104		23
105		30
106		33
107		36
108		8
109		21
110		34
111		11
112		22
113		19

SUBJECT	USERS	NONUSERS
114		7
115		22
116		21
117		12
118		27
119		14
120		14
121		3
122		12
123		46
124		16
125		24
126		25
127		0
128		4
129		9
130		22
131		6
132		2
133		7
134		2
135		1
136		2

APPENDIX 6

ESTABLISHMENT CONFORMITY:

INDIVIDUAL RAW SCORES

SUBJECT	USERS	NONUSERS
1	11	24
2	7	19
3	2	18
4	10	11
5	7	19
6	4	27
7	17	29
8	5	8
9	9	18
10	12	20
11	1	19
12	14	5
13	14	21
14	5	7
15	11	22
16	13	1
17	15	43
18	13	9
19	0	4
20	23	45
21	6	12
22	9	22
23	19	12
24	12	8
25	7	15

SUBJECT	USERS	NONUSERS
26	13	6
27	8	12
28	13	22
29	14	5
30	11	11
31	8	8
32	16	23
33	17	15
34	23	3
35	15	15
36	1	25
37	15	12
38	14	19
39	2	24
40	21	2
41	13	8
42	16	15
43	22	22
44	11	18
45	8	6
46	12	5
47	11	3
48	13	6
49	9	2
50	9	8
51	13	8
52	17	14
53	38	15
54	4	6

SUBJECT	USERS	NONUSERS
55	7	18
56	11	41
57	14	9
58	19	20
59	13	15
60	14	1
61	13	30
62	11	10
63	1	40
64	18	13
65	15	19
66	5	55
67	26	6
68	19	14
69	9	11
70	18	10
71		12
72		3
73		5
74		15
75		9
76		4
77		20
78		31
79		3
80		23
81		17
82		14
83		9

SUBJECT	USERS	NONUSERS
84		16
85		5
86		24
87		28
88		1
89		12
90		14
91		8
92		0
93		27
94		21
95		12
96		32
97		16
98		11
99		26
100		2
101		4
102		0
103		10
104		14
105		24
106		12
107		8
108		7
109		15
110		27
111		9
112		16
113		2

SUBJECT	USERS	NONUSERS
114		19
115		21
116		16
117		39
118		20
119		43
120		21
121		21
122		12
123		22
124		33
125		9
126		10
127		23
128		25
129		12
130		28
131		14
132		7
133		4
134		22
135		31
136		30

APPENDIX 7

INDEPENDENCE:

INDIVIDUAL RAW SCORES

SUBJECT	USERS	NONUSERS
1	38	31
2	7	24
3	21	22
4	29	25
5	35	24
6	16	31
7	19	7
8	28	31
9	14	30
10	27	15
11	18	25
12	18	28
13	12	15
14	30	33
15	28	15
16	23	47
17	14	3
18	18	29
19	41	45
20	15	7
21	35	30
22	27	22
23	18	18
24	33	17
25	38	25

SUBJECT	USERS	NONUSERS
26	14	40
27	40	17
28	25	45
29	17	20
30	30	29
31	7	6
32	18	24
33	23	27
34	28	7
35	20	29
36	43	33
37	23	26
38	22	34
39	43	25
40	19	39
41	20	36
42	20	23
43	7	45
44	31	39
45	15	25
46	17	16
47	15	47
48	35	22
49	35	26
50	15	34
51	18	27
52	22	22
53	14	13
54	40	10

SUBJECT	USERS	NONUSERS
55	36	46
56	29	39
57	15	33
58	26	24
59	17	54
60	22	10
61	27	12
62	16	22
63	14	11
64	21	21
65	13	26
66	43	19
67	14	45
68	22	42
69	38	47
70	18	32
71		25
72		17
73		35
74		41
75		38
76		21
77		29
78		32
79		34
80		41
81		30
82		13
83		26

SUBJECT	USERS	NONUSERS
84		15
85		17
86		9
87		17
88		15
89		30
90		27
91		15
92		25
93		29
94		15
95		22
96		31
97		23
98		32
99		23
100		28
101		11
102		10
103		12
104		38
105		19
106		11
107		34
108		18
109		28
110		34
111		22
112		27
113		31

SUBJECT	USERS	NONUSERS
114		23
115		26
116		23
117		0
118		45
119		23
120		15
121		29
122		16
123		14
124		46
125		37
126		31
127		20
128		26
129		40
130		42
131		47
132		40
133		51
134		34
135		30
136		33
		29

APPENDIX 8

PEER-PLUS-ESTABLISHMENT CONFORMITY:

INDIVIDUAL RAW SCORES

SUBJECT	USERS	NONUSERS
1	6	9
2	0	6
3	6	4
4	11	10
5	7	6
6	5	9
7	7	14
8	9	6
9	12	7
10	4	4
11	5	13
12	10	3
13	15	4
14	9	6
15	6	13
16	11	0
17	10	16
18	7	4
19	0	3
20	18	14
21	7	5
22	11	1
23	13	7
24	13	13
25	6	10

SUBJECT	USERS	NONUSERS
26	11	4
27	4	6
28	7	7
29	11	9
30	7	5
31	9	11
32	10	13
33	2	7
34	12	12
35	11	8
36	3	0
37	7	15
38	8	4
39	6	15
40	16	8
41	9	5
42	4	20
43	20	2
44	9	4
45	10	6
46	5	12
47	7	4
48	13	5
49	4	7
50	9	7
51	10	6
52	5	6
53	27	12
54	8	11

SUBJECT	USERS	NONUSERS
55	9	4
56	7	1
57	5	5
58	6	2
59	10	0
60	0	8
61	6	4
62	12	6
63	5	11
64	9	10
65	12	4
66	8	5
67	12	5
68	10	6
69	1	4
70	6	20
71		5
72		10
73		11
74		8
75		3
76		3
77		3
78		11
79		12
80		5
81		17
82		5
83		7

SUBJECT	USERS	NONUSERS
84		8
85		13
86		6
87		7
88		24
89		3
90		3
91		12
92		19
93		9
94		14
95		3
96		5
97		6
98		7
99		16
100		7
101		4
102		11
103		17
104		7
105		9
106		7
107		6
108		4
109		6
110		12
111		0
112		9
113		8

SUBJECT	USERS	NONUSERS
114		2
115		1
116		13
117		4
118		10
119		14
120		20
121		14
122		4
123		3
124		6
125		6
126		6
127		6
128		12
129		4
130		2
131		3
132		1
133		5
134		10
135		9
136		9

APPENDIX 9

ANTICONFORMITY:

INDIVIDUAL RAW SCORES

SUBJECT	USERS	NONUSERS
1	0	0
2	12	1
3	1	5
4	0	2
5	1	2
6	3	0
7	1	5
8	2	3
9	0	0
10	5	1
11	1	2
12	0	0
13	1	2
14	0	2
15	1	3
16	0	2
17	0	0
18	3	0
19	3	3
20	0	0
21	1	1
22	0	0
23	2	1
24	0	4
25	0	1

SUBJECT	USERS	NONUSERS
26	0	1
27	2	0
28	0	2
29	0	1
30	0	4
31	1	2
32	0	3
33	1	0
34	1	0
35	1	0
36	1	1
37	2	0
38	1	0
39	1	1
40	0	1
41	0	0
42	1	1
43	2	0
44	1	0
45	0	0
46	1	1
47	1	0
48	0	0
49	2	0
50	0	1
51	2	0
52	4	3
53	0	2
54	0	1

SUBJECT	USERS	NONUSERS
55	1	0
56	1	0
57	2	0
58	1	1
59	0	4
60	5	0
61	0	0
62	4	2
63	0	1
64	1	4
65	0	1
66	1	4
67	0	5
68	1	3
69	8	1
70	5	0
71		0
72		0
73		0
74		0
75		2
76		9
77		1
78		0
79		0
80		0
81		1
82		1
83		0

SUBJECT	USERS	NONUSERS
84		0
85		4
86		1
87		11
88		0
89		0
90		4
91		1
92		0
93		0
94		0
95		0
96		2
97		1
98		1
99		2
100		0
101		1
102		4
103		0
104		1
105		1
106		2
107		9
108		1
109		1
110		0
111		1
112		1
113		2

SUBJECT	USERS	NONUSERS
114		1
115		6
116		18
117		0
118		0
119		2
120		2
121		0
122		0
123		5
124		1
125		2
126		2
127		1
128		1
129		0
130		1
131		3
132		0
133		0
134		2
135		1
136		2

APPENDIX 10

DRUG QUESTIONNAIRE:
TOTAL CORRECT RESPONSES
INDIVIDUAL RAW SCORES

SUBJECT	USERS	NONUSERS
1	32	36
2	49	41
3	46	30
4	51	37
5	46	31
6	36	17
7	56	40
8	44	18
9	54	43
10	46	10
11	46	8
12	52	31
13	39	22
14	45	18
15	47	16
16	52	28
17	45	5
18	56	21
19	55	41
20	41	7
21	26	30
22	47	27
23	56	38
24	49	22
25	50	31

APPENDIX 10 (Cont.)

SUBJECT	USERS	NONUSERS
26	38	33
27	57	41
28	37	32
29	39	4
30	57	46
31	57	18
32	55	28
33	55	15
34	57	22
35	19	34
36	30	20
37	24	22
38	38	45
39	50	31
40	46	33
41	49	37
42	40	47
43	58	46
44	34	39
45	54	35
46	38	46
47	53	43
48	57	40
49	35	39
50	58	14
51	57	20
52	55	33
53	35	29
54	34	19

SUBJECT	USERS	NONUSERS
55	50	40
56	52	35
57	47	27
58	43	28
59	47	22
60	55	41
61	55	30
62	30	32
63	56	36
64	45	37
65	44	50
66	56	34
67	48	25
68	49	3
69	31	42
70	45	34
71		42
72		22
73		36
74		35
75		40
76		10
77		35
78		25
79		39
80		39
81		34
82		33
83		46

SUBJECT	USERS	NONUSERS
84		44
85		43
86		35
87		31
88		32
89		23
90		42
91		30
92		40
93		30
94		37
95		41
96		33
97		30
98		31
99		28
100		18
101		19
102		32
103		43
104		25
105		39
106		33
107		33
108		21
109		39
110		10
111		46
112		38
113		29

SUBJECT	USERS	NONUSERS
114		30
115		44
116		44
117		25
118		19
119		19
120		20
121		23
122		44
123		44
124		28
125		35
126		51
127		43
128		42
129		19
130		5
131		28
132		14
133		37
134		33
135		39
136		36

APPENDIX 11

ABSTRACT OF

A Comparison of Marijuana Users and Nonusers With Respect to Conformity Pressure[1]

The literature on conformity indicates that university students may be subject to conformity pressures from both peers and authority, or "establishment" figures. Such cross pressures to conformity may operate when the student comes in contact with marijuana use on the campus, the user conforming to the pressures of the drug-using peer group, the nonuser to "establishment" pressures. The literature on drug use, however, implies both a conformist and an anticonformist aspect to marijuana use, without specifying which motivation is predominant. Neither is a conformity motive clearly spelled out in the case of nonusers.

In this project, nonusers and users of marijuana on the University of Ottawa campus were compared with respect to direction of conformity. Two-hundred and six English-speaking male undergraduates volunteered to complete an attitude scale concerning minority groups on two separate occasions. On the second occasion, false normative data were provided with the scale, purported to represent the responses of, respectively, other peers and "establishment" figures.

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1 Dorothy Thornton, doctoral thesis presented to the Faculty of Psychology of the University of Ottawa, Ontario, May 1973, VI - 163p.

The subjects also completed a questionnaire concerning their attitudes, knowledge and habits with respect to drugs. On the basis of the questionnaire they were divided into a group of seventy marijuana users and a group of one-hundred and thirty-six nonusers. The two groups were then compared on direction and extent of attitude change on the second attitude scale.

The results failed to support the null hypotheses that users would show no more tendency than nonusers to conform to peer norms, and nonusers no more tendency than users to conform to "establishment" norms. Also unsupported was the null hypothesis that attitude change would express as much anti-conformity to one source of conformity pressure as conformity to another. The null hypothesis of equal independence in the two groups was unsupported as well, nonusers displaying more independence than users. The general conclusion was drawn that the use of marijuana represents a search for, rather than a rejection of values.

ERRATA

Pages 34 - 104 - The word "users" should read "self-reported users" wherever it occurs with reference to subjects in the Users Group of this research.

Page 88, l. 22 - "the more independent nonusers" should read "the more independent self-reported users".

Page 56 & C. 4 - The heading "Z" should read "t".
Page 59

Page 89, l. 13 - The figure "856.67" should read "256.67".

Page 130 - The figure "856.67", under the heading "Nonusers", should read "256.67".