

**PERSONAL AND SITUATIONAL FACTORS
IN DRUG USE AS PERCEIVED BY KIBBUTZ YOUTH**

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ABSTRACT

Sixteen 17-year-old kibbutz members, seven of them smokers, and nine non-smokers of hashish, assessed the probability that a young person of similar background would use drugs. Two sources of information were manipulated bifactorially: personal predisposition (curiosity, risk-taking, and existential meaning) and the level of group pressure to smoke hashish. It was found that hashish smokers assigned meaningful importance to a combined influence of the two factors, while the nonsmokers considered only group pressure to be important. A tool based on the measurement method examined in this study is proposed for predicting the probability of drug use among adolescents.

Many studies stress that the first experience with drugs usually occurs during adolescence (e.g., Chein, 1965; Green, 1985; Kandel, 1980; Van Dijk, 1980; Yavetz & Shoval, 1980). The high incidence of the use of hashish and marijuana by adolescents has led to a considerable amount of scientific literature on the subject. In this context, Jessor and Jessor (1977) claim that the phenomenon of the use of hashish and marijuana by adolescents should be examined against the background of psychological processes which typify adolescence.

The term "adolescence" is intended to represent a stage in the development of the individual. The modern connotation of this term is relatively new. In primitive societies the move from childhood to adolescence was short. In fact, there are nonindustrialized places in which the term does not exist at all (Proferock, 1981). The term, as we know it, was first suggested in 1762 by Rousseau (1979) to represent an experience of second birth. A number of modern theoreticians (e.g., A. Freud, 1968) emphasize emotional aspects of this developmental stage and assume a psychological imbalance which ends in adolescence when intellectual defense mechanisms emerge.

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Erikson (1963) postulates that adolescence is characterized by the challenge of identity formation. He does not stress the importance of any specific emotion. According to Victor, Grossman, and Eisenman (1973), this challenge for middle-class youth who have no history of pathology and who do not use drugs is associated with curiosity, a tendency toward risk-taking, and a search for new experiences.

Drug Use in Adolescence

Openness to new experiences. During specific stages of life, those who function well feel the need to expose themselves to an unsafe environment and new and exciting experiences, unrelated to the gratification of other needs (Berlyne, 1960; White, 1959). This need involves, striving for self-actualization (Coleman, Butcher, & Carson, 1980), and it is located at the top of the needs pyramid (Maslow, 1962).

Curiosity is accepted as the most common motive for embarking on drug use (Green, 1985; Mizner, Barter, & Werme, 1970; Ormian, 1975). Green's (1985) research on the use of hashish and marijuana among adolescents in Israel reports that curiosity plays a central role in their willingness to smoke hashish. Some of his subjects mentioned that they wanted to find out how it feels to be in a situation in which they lack inhibitions, and in this way get to know themselves better. Zuckerman (1971) also found that users perceived curiosity as a motive for their initiation into drug use. Hummu (1978) reported that transitory and one-time users mentioned curiosity as the primary motive for drug use.

Existential vacuum. Frankl (1955) maintains that the issue of meaning in life emerges in adolescence. He reports on findings which show that adolescents suffer from an existential vacuum more than do adults. Using this approach, Greaves (1974) studied willingness of adolescents from middle-class backgrounds to use drugs. He reported that the use of hallucinatory drugs is perceived as auto-medication for existential problems, and that this tendency combined with group pressure and availability of a drug increases the probability of smoking hashish among adolescents.

Group pressure. Most theories on the use of "soft drugs" (e.g., Becker, 1980) assume peer group influence on this behavior. The availability of the drug is a necessary but insufficient precondition for willingness to use hashish, and thus is an inseparable part of the environmental and social influence (Barr, 1984; Smart, 1980). The theories which focus on social influences in willingness to use drugs assume that the need to belong to a group is most important at the age of adolescence. This need explains the extent of conformity to the modes adopted by the peer group (e.g., Edwards & Brauburger, 1973; Floyd & South,

1972). It has been documented that drug users (especially those who use soft drugs) need social assurance and acceptance more than do others (Barr, 1984; Tudor, Paterson, & Elifson, 1980).

In certain societies, drug taking may serve as a condition of acceptance or as a condition for continuity of membership (Almpur & Smart, 1969). Kandel (1980) found that it is possible to predict initial drug use from the socializing patterns of users. It seems that both initial and continued use of soft drugs involve the presence of smoking friends (Babst, Miran, & Koval, 1976; Barr, 1984; Tec, 1974; Tolone & Dermott, 1975).

Good (1976) attributes special importance to the social factor in the use of soft drugs, labeling it sociogenic or cultogenic. He asserts that such drugs are taken in the presence of actual or potential friends, and in this process a certain uniformity of values is achieved. Van Dijk (1980) claims that the social aspect is only one of a set of factors, assuming that a society which accepts drug taking will encourage its use.

Interactive Approaches

Huba and his colleagues (Huba & Bentler, 1982; Huba, Wingard, & Bentler, 1979) propose a model which attempts to explain how interactions among a wide range of sets of factors lead to drug use. Vectors of influence between these sets are established on the basis of empirical knowledge. The model suggests an interactive effect of personal and environmental factors.

This approach paved the way for studies which examined connections between different relevant variables and drug use in adolescents. For instance, connections were found between personality of the father, upbringing, father-child relationships, peer group influence, and smoking of marijuana by adolescents (Brook, Whitman, & Gordon, 1982). A strong relationship was found between problems in emotional expression, low self-esteem, poor social functioning in school, problems in realizing goals, and the smoking of marijuana for adolescents ages 16-20 (Vicary & Lerner, 1983). However, Huba & Bentler (1982) lament that very little systematic research has been carried out to examine the structural characteristics of the interaction among the variables associated with these interactions. These researchers state that in order to reach reliable conclusions, adolescents who have undergone the experience of drug use must be tested. In order to investigate these questions, they developed a causal model based on the use of multi-item questionnaires. The responses to these questionnaires are submitted to a sophisticated statistical arrangement which allows for the identification of causal relationships between different related elements.

This paradigm made a meaningful contribution to the study of drug use due to its ability to draw a complex picture of the relevant variables. However, it requires the subject to refer to each relevant element independently. Only afterward, through post-hoc statistical analyses, are the different responses combined in a single model.

The present study also takes a multi-dimensional approach, this time exposing subjects to questions involving more than one element. Questions are based on narratives which include information about two basic factors (one personal and one social), which emerged from the literature reviewed above. In this way some of the complexity expressed in the model presented in Figure 1 is eliminated. This is accomplished in terms of the theory of information integration.

Integration of Information on Factors Related to Hashish Use

Information Integration Theory (Anderson, 1981, 1982) assumes that the individual integrates information from different relevant sources in order to generate a valid response. These pieces of information combine with each other in a way that can be represented algebraically. The theory can be applied to any area in the behavioral sciences which focuses on general questions of how different factors involved in a specific cognitive process are integrated. It has been applied successfully in a broad range of fields, including child development, psychophysics, decision-making, and moral development (see Anderson, 1991a, 1991b, 1991c for a selection from these domains). Among adolescents, the theory has been used to examine the development of moral judgment (Leon, 1980, 1982) and judgment of aggression and blame among juvenile delinquents (Wolf, Battash, Addad, & Walters, 1992).

The method of functional measurement derived from the theory utilizes multi-factorial models, graphic presentations, and inferential statistics (i.e., analysis of variance, bilinear analyses) in order to operationalize the terminology of the information integration approach. Quantitative evaluations of different combinations of stimulus dimensions are translated into scale values, weights assigned to the relevant dimensions, and integration rules.

This paradigm is intended here to provide a preliminary tool for dealing with the issue of how personal and social factors are perceived as contributing to an adolescent's readiness to take drugs. Direct questioning might fail to provide valid answers to such questions due to subjects' suspicions of the experimenter or for reasons of social desirability. Indirect questioning, as applied in functional measurement procedures, may allow for the avoidance of such barriers. The data accumulated within the framework of information integration theory

indicates that the way an individual judges or evaluates a given social reality represents his/her perceptions (schemata) of that reality (e.g., Anderson, 1991a,b,c; Hommers & Anderson, 1991).

The subjects in the present study were asked to evaluate readiness on the part of adolescents from similar backgrounds to smoke hashish under conditions of different levels of curiosity about such experiences and different levels of group pressure to do so.

EXPERIMENT 1: CURIOSITY AND GROUP PRESSURE

METHOD

Subjects

The study focused on kibbutz adolescents. A kibbutz is a small village which functions according to socialistic rules; the income of each working member of the kibbutz belongs to the entire community, and the community is responsible for the needs of all its members, including pocket money. A few hundred kibbutz settlements are spread throughout Israel. This population is especially suited to a preliminary examination of the present issue due to its unique social rules and norms. First and foremost, the conceptions, attitudes, and approaches of any individual from a kibbutz are modified to a great extent by those of the entire community due to general acceptance of the utopian-socialistic ideal. Thus, pressure from the reference group (for adolescents, the peer group) is expected to play a central role in the choices made by any individual. Another inherent element in kibbutz society is the central role of the Socratic principle of education—that the origin of knowledge is within the individual, who can discover the essence of all phenomena through independent search (sometimes with the guidance of a knowledgeable teacher). Thus, it can be assumed that curiosity is more legitimate in a kibbutz framework as compared with other societies which tend to use a more standard educational approach. There is also a methodological advantage to the generation of experimental data in the kibbutz: Due to the premordial and socioeconomic homogeneity of this population, there is a reduction in the non-controllable variance related to sociopsychological variables, as compared to other societies.

Seven hashish-smoking adolescents, five boys and two girls, all age 17, from different kibbutz settlements, participated in Experiment 1. Their parents are kibbutz members, and each subject has at least one sister/brother living on the kibbutz. All subjects live and study at a high school located on their kibbutz.

Design and materials. The above introduction emphasizes the role of two classes of factors in the use of soft drugs by adolescents—predispositional and social factors. The former is represented here by curiosity and the latter by pressure of the peer group to smoke hashish. Information on these two factors was presented bifactorially using an experimental narrative which consisted of a description of a person with background characteristics similar to those of the subject: information about the level of curiosity typical of the protagonist, as well as the level of pressure from his/her peer group to smoke hashish. The narrative concluded with a request to evaluate the probability that this person will smoke hashish. This form of stimulus presentation and questioning was intended to facilitate identification of the subject with the protagonist, and projection of his/her own response tendencies onto that person. The subjects were asked to respond to a series of such descriptions, each of which included one of the entire set of bifactorial combinations of the levels of curiosity and group pressure.

Procedure

Each of the two factors—curiosity and group pressure—had three levels. Thus the complete bifactorial design included nine conditions formed from all possible combinations (3×3) between the levels of the two factors. Thus, the basic sentence presented to the subjects has nine modifications. The sentence, the different pieces of information, and the request for prediction of hashish smoking are presented below:

Consider a boy who is (highly/moderately/slightly) curious. What is the probability that he will agree to smoke hashish when he is among (friends/a combined group of friends, and nonfriends/nonfamiliar peers) who are smoking?

The experimenter explained that the values of probability ranged from 0 to 100.

The availability of the drug is meaningful for users, especially for those who take drugs for the first time (Smart, 1980). Thus, as indicated by the experimental narrative, the availability was fixed at the highest level (i.e., the users are depicted as those “. . . who are smoking”) in order to make the prediction easier for the subjects.

Each subject was tested individually by the same experimenter in his/her private apartment in the kibbutz. First, the general purpose of the study was explained. The subject was then assured that there was no intention to generate personal information, but rather that s/he was part of a group sampled to represent the entire population of kibbutz adolescents. It was also promised that the responses would be arranged without any identifying sign and would be combined with the

responses of the other subjects to provide a general statistical picture. Following the subject's consent to participate in the experiment s/he was introduced to the experimental task, and a few sample questions were practiced.

Reverse order of stimulus presentation. In the original experiment, the information on the level of curiosity was embedded in the first part of the experimental narrative and the level of group pressure in the second. In order to control for order of presentation of these two pieces of information, four of the participants in the original experiment were tested again, three weeks after the completion of the original. The second experiment was identical to the first except that the information on group pressure appeared before the information on curiosity.

RESULTS

The mean predictions of all seven subjects are plotted in Figure 1. Level of group pressure is represented along the horizontal axis, and each curve represents a different level of curiosity. The distance between the curves in Figure 1 indicates that curiosity served as an important factor in the evaluation of the probability of hashish smoking. The more curious the protagonist, the higher the estimated probability that s/he will smoke hashish. The noticeable left to right upward

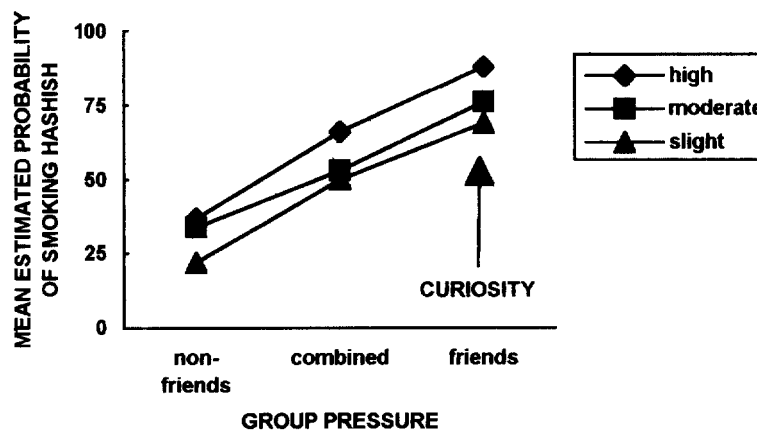


Figure 1. Estimated probability of smoking hashish as a function of information about group pressure and curiosity

slope of the curves indicates that group pressure also played an important role in determining this probability. The stronger the pressure to smoke hashish, the higher the estimated probability that the target adolescent will do so. The effect of group pressure seems to be somewhat greater than the effect of curiosity. It is also notable that the two extreme curves (representing high and low curiosity) are parallel to each other while the middle curve (moderate curiosity) shows some deviation from parallelism. If this deviation is inconsequential, then the parallelism indicates that the subject's predictions followed an additive model of integration in which "the subject's implicit response is assumed to be a sum of the subjective values of the given stimuli" (Anderson, 1981, p. 15).

An analysis of variance (ANOVA) of the predictions was conducted. The findings of this test confirm the conclusions drawn from the visual inspection of the graphic display. The $F(2,6)$ ratios for the main effects of curiosity and group pressure were 10.34 and 24.60, respectively, $p < .01$, indicating that the two factors played a meaningful role in determining the predictions of hashish smoking, and that the effect of group pressure was somewhat greater than the effect of curiosity. The conclusion drawn from a visual inspection concerning the use of an additive rule is confirmed by the insignificance of the interaction coefficient, $F(4,24) = 1.46$, $p > .05$.

The means of the predictions made by the four subjects who were exposed to a reversed order of presentation of the information on curiosity and group pressure are presented in Figure 2. The level of group pressure is represented along the horizontal axis; each curve represents a target adolescent with a different level of curiosity.

The graphic pattern in Figure 2 is similar to that in Figure 1. Both represent predictions made on the basis of the same two sources of information (curiosity and group pressure), but in reverse order. Here, too, the clear distance between the curves and the noticeable slope, representing curiosity and group pressure, respectively, both affected the predictions made by hashish users. The parallelism of the graphic plot indicates that additivity was employed in making judgments about probability of hashish use.

The ANOVA statistics support the visual conclusions: The $F(2,3)$ for curiosity and group pressure were 42.68 and 72.07, respectively, $p < .01$. Here, too, the main effect of group pressure is somewhat greater than the main effect of curiosity. The interaction coefficient was far from significant, $F(4,12) p < 1$, confirming the use of an additive model.

The findings of this inversed order replication agree with those of the original experiment, thus enhancing the confidence in the generality of the effects.

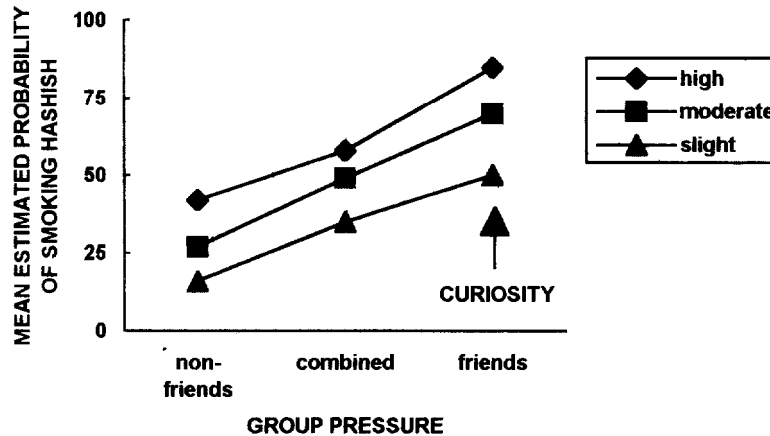


Figure 2. Estimated probability of smoking hashish as a function of information about group pressure and curiosity (reversed order)

EXPERIMENT 2: RISK-TAKING AND GROUP PRESSURE

METHOD

As mentioned at the outset, several predispositions can contribute to the readiness of adolescents to use drugs. The literature review and a pilot study conducted by the authors indicated that a predisposition for risk-taking is one of the possible contributory factors in hashish smoking. The tendency to search for new experiences is a salient characteristic of adolescence. Drug taking, especially hashish and marijuana, is one of the most intriguing adventures for adolescents from different cultures. There is an empirical basis for the assumption that curiosity and risk-taking are related (Lipinsky, 1976). Experiment 1 showed that curiosity is perceived as a meaningful cause of hashish use; Experiment 2 examines the question of whether the same holds true for risk-taking. Four of the seven participants in Experiment 1 took part in Experiment 2, which was conducted three weeks later, using the same method. The only difference was the substitution of predisposition to risk-taking for curiosity. The experimental narrative was as follows:

Consider a boy with a (high/moderate/low) tendency to take risks. What is the probability that he will agree to smoke hashish when he is among (friends/a combined group of friends, and nonfriends/nonfamiliar peers) who are smoking?

Here, too, the experimenter tested each subject individually. The nine cards with the narratives were presented twice to each subject in an arbitrary order, different for each subject.

RESULTS

The mean predictions made by the four subjects are presented in Figure 4. Group pressure is represented along the horizontal axis; each curve depicts a protagonist with a different tendency for risk-taking.

The graphic pattern in Figure 3 is similar to those in Figures 1 and 2. The distance between the curves demonstrates the effect of predisposition toward risk-taking; the slope of the curves indicates that the effect of group pressure was somewhat stronger. The clear parallelism between the curves implies use of an additive model.

ANOVA statistics confirm these conclusions: $F(2,3)$ ratios for the main effects of risk-taking and group pressure were 43.91 and 13.14, respectively, $p < .01$. Here, as in Experiment 1, the effect of group

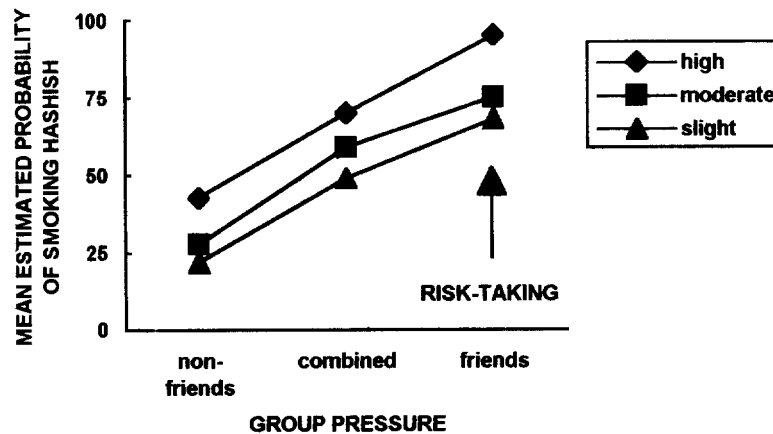


Figure 3. Estimated probability of smoking hashish as a function of information about group pressure and risk-taking

pressure was greater than that of the subjects' predisposition (this time for risk-taking). The interaction coefficient again was insignificant, $F(4,12) = 1.21, p > .05$, confirming the visual impression that an additive model was used. This finding shows that in addition to the effect of curiosity, which was obtained in Experiment 1, predisposition to risk-taking made an independent, meaningful contribution to the subject's predictions of hashish smoking.

EXPERIMENT 3: EXISTENTIAL MEANING AND GROUP PRESSURE

METHOD

Experiment 3 examines whether noological predisposition, such as meaning of life, is perceived as a contributory factor along with group pressure to hashish smoking by kibbutz adolescents in a manner similar to the previous ones, with the exception that the information on risk-taking was replaced with information on meaning of life. The experimental narrative was as follows:

Consider a boy with a (high/moderate/low) meaning of life. What is the probability that he will agree to smoke hashish when he is among (friends/a combined group of friends and nonfriends/nonfamiliar peers) who are smoking?

All seven subjects from the previous experiments participated, three weeks after Experiment 2.

RESULTS

The mean predictions of the seven subjects are presented in Figure 4. Level of group pressure is represented along the horizontal axis; each curve depicts a protagonist with a different level of existential meaning. The graphic pattern in Figure 4 is similar to those in Figures 1-3. The distance between the curves, their slope, and the obvious parallelism indicate that meaning of life as well as group pressure were perceived as contributory factors and that an additive model was applied. The results of an ANOVA confirm these impressions: $F(2,6)$ ratios for meaning life and group pressure were 14.97 and 17.59, respectively, $p < .01$. This time approximately similar importance was assigned to the two factors. The interaction coefficient was far from significant, thus indicating the use of an additive model.

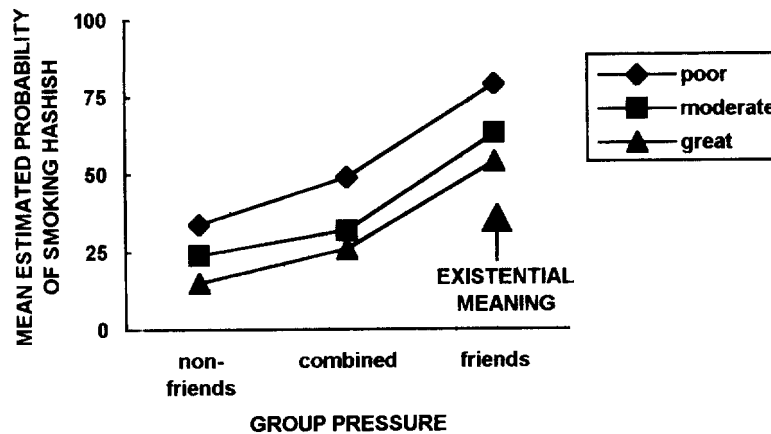


Figure 4. Estimated probability of smoking hashish as a function of information about group pressure and existential meaning

The findings of Experiments 1–3 lead to the conclusion that various predispositions—curiosity, risk-taking, and meaning of life were perceived by the subjects as meaningful factors along with group pressure in the predictions of hashish smoking. It was also found that while group pressure had a stronger effect than did curiosity (Experiment 1) and risk-taking (Experiment 2), it had an approximately similar effect to that of meaning of life (Experiment 3).

EXPERIMENT 4:

CURIOSITY AND GENERALIZED DESCRIPTION OF GROUP PRESSURE

METHOD

This experiment is intended to examine the generality of the effect of group pressure. It was based on a design similar to that of Experiment 1, except that the specific information on the relevance of the pressuring group to the protagonist was replaced with nonspecific (generalized) information, as follows:

Consider a boy who is (highly/moderately/slightly) curious. What is the probability that he will agree to smoke hashish when he is with a group of boys who inflict on him (high/moderate/slight) pressure to smoke hashish?

Six of the members of the original sample participated in this experiment, which was conducted three weeks after Experiment 3.

RESULTS

The mean predictions of all six subjects are presented in Figure 5. The graphic pattern in Figure 5 is similar to those in the previous figures. This time, however, the effects of curiosity and group pressure are approximately similar. Their $F(2,5)$ ratios are 75.5 and 61.0, respectively, $p < .01$. Here, too, an additive model was used, as implied from the parallelism evident in the curves and the insignificance of the interaction coefficient, $F(4,20) = 1.55$, $p > .05$. These findings increase the confidence in the generality of the effect of group pressure. It illustrates that even when group pressure is presented in a nonspecific form, it is perceived as meaningful. Its effect, however, was reduced under such conditions as compared to the effect of group pressure as operationalized in the experimental narratives of Experiments 1 and 2.

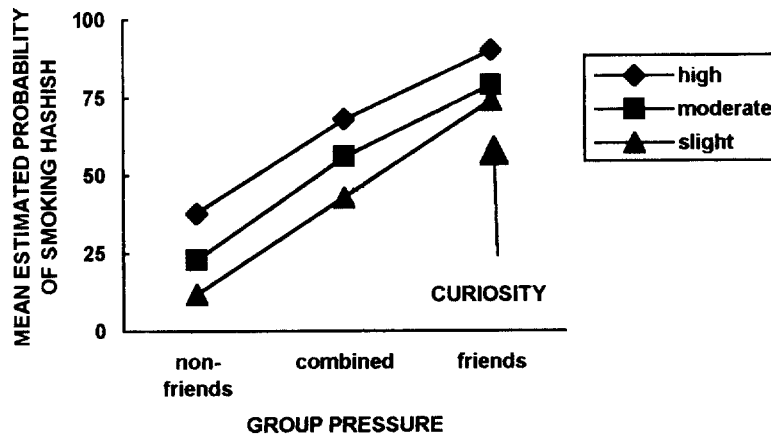


Figure 5. Estimated probability of smoking hashish as a function of information about group pressure (generalized) and curiosity

METHOD

This experiment examines the importance assigned to each of the two elements—curiosity and group pressure—when presented separately. The subject's prediction refers to only one element. For this purpose, the original experimental narrative which presented information about both elements—curiosity and group pressure—was divided into two parts; one included information about curiosity, and the other about group pressure. Each part was printed on a different card. One narrative was formulated as follows:

Consider a boy who is (highly/moderately/slightly) curious. What is the probability that he will smoke hashish?" The other narrative was as follows. "What is the probability that a boy will smoke hashish when he is (among friends/in a combined group of friends and nonfriends/among nonfamiliar peers) who are smoking?"

The six cards (three for each element) were presented twice in an arbitrary order. All seven members of the original sample participated in this experiment, which was conducted three weeks after Experiment 4.

RESULTS

Both factors—curiosity and group pressure—yielded significant effects when they were presented in separate contexts. The $F(2,6)$ ratios were 39.28, $p < .01$, and 2.83, $p < .05$, respectively. This time, however, the effect of group pressure was minimal, compared with the much stronger effect for curiosity. Similar predictions were made by the two other subjects who did not participate in the previous experiments.

These findings imply that in the previous experiments, where information on the two factors was presented within a single context (i.e., the same narrative), a large share of the effect of curiosity was suppressed by the effect of group pressure. This possibility implies that the real interaction between the predispositional and social factors are more complicated than can be revealed by the interaction term of an ANOVA for repeated measures, which was computed in the previous experiments. There, this coefficient was not significant, thus indicating that the subjects used an additive model. Nevertheless, the findings of the present experiment, which were produced under conditions of

independent presentation for the two elements, point to the possibility that group pressure was perceived as a weak factor in and of itself and as one which exerts its power only when operating together with curiosity.

EXPERIMENT 6: NONSMOKERS OF HASHISH

METHOD

In all previous experiments in the present study, the subjects were adolescents who smoke hashish. The subjects in Experiment 6 were selected because they do not smoke hashish. The comparison of the responses of subjects from these groups is expected to reveal whether hashish smoking is associated with a unique perception of the motivation behind this behavior.

Nine youngsters who do not smoke hashish participated in this experiment. Their educational and sociological background was similar to that of the members of the original sample. Each subject participated in two experiments. One experiment provided the subjects with information about curiosity and group pressure, and the other provided information about existential meaning and group pressure.

RESULTS

The mean predictions of the nine nonsmoking subjects are presented in Figure 6. The noticeable slope of the curves in the two graphic patterns in Figure 6 indicates that the nonsmoking adolescents perceived group pressure as a meaningful cause for hashish smoking. The lack of distance between the curves in both graphic patterns implies that these subjects did not relate to either curiosity or to existential meaning as contributory factors.

The visual impressions are confirmed by the results of an ANOVA. The effect of group pressure was significant ($p < .01$) when it was presented with curiosity, $F(2,8) = 37.06$, as well as when it was presented with existential meaning, $F(2, 8) = 31.29$. The two predispositions did not reach significance: For curiosity, $F(2,8) = 2.95$, $p > .05$; for existential meaning, $F(2,8) < 1$.

These findings, which show that the subjects who do not smoke hashish perceive only group pressure as an important cause for drug use, is instructive considering the background of the previous findings, which

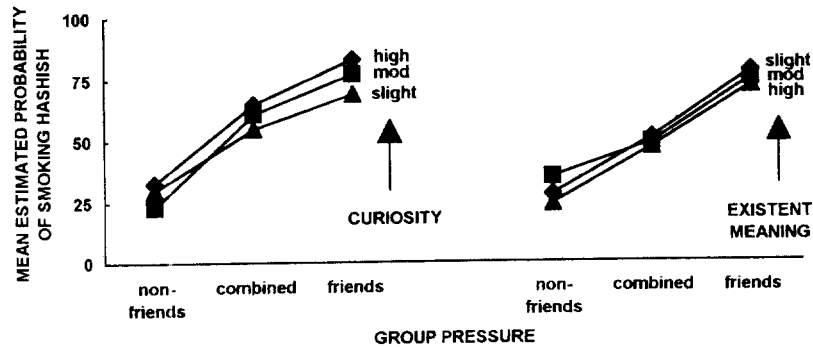


Figure 6. Estimated probability of smoking hashish as a function of information about group pressure and curiosity (left panel) and as a function of group pressure and existential meaning (right panel)

revealed a tendency of the hashish users to relate to several personal predispositions as contributory factors. The solitary role assigned to group pressure by nonsmokers may be related to their acceptance of the extreme social atmosphere of the kibbutz. The meaningful importance assigned to personal predispositions (curiosity, risk-taking, and existential meaning) by hashish users from kibbutz settlements in this study may imply that for them hashish smoking has its origins in a complex of attitudes toward nonconformist experiences.

DISCUSSION

In this study, kibbutz adolescents, both smokers and nonsmokers of hashish, estimated the probability that those of similar backgrounds would smoke hashish. Seven hashish smokers participated in Experiments 1-5 and nine nonsmokers participated in Experiment 6. It was found that the smokers attributed a combined influence of personal predisposition and group pressure, while nonsmokers assigned importance only to group pressure.

Hashish Smokers

Experiments 2-5 were designed to examine constraints on the generality of the findings of Experiment 1. In that first experiment, information about curiosity and group pressure was presented within a single

narrative, i.e., the subjects' predictions were made on the basis of simultaneous exposure to both elements. In these conditions, the hashish smokers assigned greater importance to group pressure than to curiosity. This trend reappeared in Experiment 2, where curiosity was replaced with risk-taking. In Experiment 3, however, where risk-taking was replaced with existential meaning, both elements were assigned similar importance. A similar balanced perception of causes for hashish smoking was also found in Experiment 4, where group pressure was presented in a nonspecific way. The findings of Experiments 3 and 4 imply that the relative importance of group pressure depends on the nature of the predispositional element with which it is coupled and on the degree of specificity of its presentation.

In Experiment 5, each of the two elements—curiosity and group pressure—was presented in a separate narrative. Here the subjects' predictions were made on the basis of information about only one element in a given context. Under this condition, the importance assigned to the two elements was reversed as compared to Experiments 1 and 2: Curiosity was assigned most of the importance, while the effect of group pressure was minimal. This finding suggests that the importance of group pressure ought to be viewed as a contributory condition to personal predisposition.

The generality of this conclusion deserves a systematic examination. Empirically, if it holds true only for kibbutz youngsters who smoke hashish, it may shed light on some special consequences of socialization in the kibbutz, one of which might deal with pressure of deviant groups (hashish smokers) within the kibbutz on their members to conform to deviant norms (hashish smoking). Such a suggestion might imply that for nonconforming individuals, permanent exposure to group pressure in all aspects of life may lead to acceptance of such pressure only when it is perceived as part of a combined vector which involves personal predisposition, while a disconnection between group pressure and predisposition may minimize the importance of the former.

Smokers vs. Nonsmokers

The finding that the nonsmokers of hashish perceived only group pressure as a meaningful factor is compatible with the assumption that avoidance of smoking conforms to the norms of the kibbutz. It can also be assumed that since the nonsmokers adopted these norms (Doron, 1977), they also absorbed the norm of conformity to group pressure more than did the smokers, and thus they assign greater importance to peer group pressure to avoid smoking hashish. Despite

the face validity of these assumptions, it would be desirable to submit them to empirical validation, and Huba and Bentler's (1982) method of causal modeling may be appropriate in this regard.

Hashish smoking may reflect disapproval of the general norm of conformity which prevails in the kibbutz. This tendency presumably finds its expression in the importance assigned by the smokers to personal predispositions, as was found in the present study. This possibility is supported by post-experimental conversations with the smoking subjects. They criticized the social atmosphere which pervades all aspects of life in the kibbutz, reporting that they try to emphasize their individuality by expressing exclusive opinions and attitudes on topics such as music, clothing, and room furnishings. Even though these trends prevail among the general adolescent population, they seem to be more intense among hashish-smoking kibbutz youth. It can also be mentioned that in the post-experimental questioning, the nonsmoking subjects expressed conformity to their social environment in terms of their satisfaction with this way of life and their willingness to continue it.

If the predictions of hashish smoking made by our subjects, both smokers and nonsmokers, are connected with their readiness to smoke hashish (as can be inferred from the differences in their prediction patterns), then the above mentioned finding is problematic for those who advocate an interactive approach (e.g., Huba & Bentler, 1982; Van Dijk, 1980). This is because our findings show that hashish smoking is perceived as a consequence of a combination of factors (predispositional and social) as well as of a single factor (either predispositional or social), depending on the context.

Methodological Perspectives

The present study dealt with the way in which adolescents perceive hashish smoking. This issue is not entirely suitable for direct observation, since drug users tend to be reticent about expressing their opinions on the subject. Even if they agree to participate in a study, their commitment is rather tenuous. This has to be taken into account in evaluating the sampling of the subjects for the present study, smokers and nonsmokers alike. Even though there were few subjects, each participated in a series of sessions, spread over a few months. And in each session the subject made a number of responses to stimuli which were systematically manipulated. From a measurement perspective, the diverse spread of choices across the probability scale and their linear nature indicate successful calibration of the measurement scale.

The main contribution of the present study is an illustration of Anderson's functional measurement methodology as a means of generat-

ing knowledge about the perceptions of hashish-smoking adolescents. Elaboration of the research model to allow simultaneous manipulation of information about a number of predispositions (as compared to the present study where only one predispositional factor at a time was manipulated along with group pressure) would be desirable in order to study the nature of the interactive effects of several factors on the perception of drug use.

Post-experimental questioning of the subjects indicated that the experimental procedures were meaningful for them. It would be desirable, however, to examine the experimental realism of the findings. This could be accomplished by translating the narrative framework of stimulus presentation to more tangible patterns, such as role-playing simulations of group pressure to smoke hashish or filmed episodes depicting such situations. Even if we assume that these findings reflect the perceptions of kibbutz adolescents who smoke hashish, there is no certainty that they represent the perceptions of hashish smokers from urban environments. Such adolescents would presumably assign less importance, if any, to group pressure.

The present study deals with the way in which a combined influence of predisposition and group pressure on the use of soft drugs is perceived by adolescents. Extending this issue to hard drugs (such as heroin and cocaine) is recommended. It is likely that the consumption of such drugs involves predispositions with negative social connotations, e.g., emotional and personality disorders, rather than the positive predispositions (curiosity and risk-taking) involved in use of soft drugs. In this light, it would be worth testing the possibility that addiction to hard drugs begins with the use of softer varieties and that the type of predisposition determines whether the adolescent will be satisfied with the experience of soft drugs or will drift into hard-drug use.

APPLICATIONS

A cautious approach to conclusions and applications is desirable due to limited confidence in the external validity of the findings (as discussed in the previous section). However, if future experimentation supports the present conclusions, their application to problems of distinguishing between potential users and nonusers might prove useful.

The present study illustrates the ability of functional measurement to differentiate between a complex perception consisting of bifactorial combinations of information and a simple perception, consisting of only one factor. The emphasis of functional measurement on individual

analysis and its development of procedures for personal design (Anderson, 1992) affords an opportunity to utilize this framework for the development of a means to predict the probability of drug use by individual adolescents. In such a test, the examinee would be required to predict or judge the behavior of an adolescent with similar background characteristics to his/her own. These predictions would serve as a basis for an assessment of his/her own behavior and enable implementation of specific prevention methods based on individual weighting preferences for the relevant factors.

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