DOCUMENT RESUME

ED 189 182 TM 800 364

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TITLE The Effect of Student Personality Typology on Perceptions of Instructor Effectiveness.
PUB DATE Apr 80
NOTE 27p.; Paper presented at the Annual Meeting of the American Educational Research Association (64th, Boston, MA, April 7-11, 1980).

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Cognitive Style; *College Students; Decision Making; Higher Education; *Personality Traits; *Student Evaluation of Teacher Performance
IDENTIFIERS Edwards Personal Preference Schedule; Field Dependence Independence; Frey Instructor Rating; *Johnson Decision Making Inventory; *Myers Briggs Type Indicator; Purdue Rating Scale for Instruction

ABSTRACT

The effects of student personality type on ratings of instructors are examined. Research studies are reviewed and categorized into three groups: field independent/dependent cognitive style of subject; general personality style as measured by the Myers-Briggs Type Indicator; and perceived needs states of students. A new measure, the Johnson Decision Making Inventory, is introduced. For the present research, two different samples of college students were used. The first was a group of students enrolled in an introductory chemistry course, and the second was a group enrolled in a general studies art appreciation course. All students filled out the Decision Making Inventory and Frey Instructor Rating instruments. The analysis of variance for the two classes yielded very different results. Both professors were of the same decision-making style, yet their evaluations were unalike. Overall, the art professor was evaluated much higher than the chemistry professor. Numerous explanations for the differing results are offered. It is suggested that confidence in the findings would come with a tighter control on instructional quality and student self-selection and increased reliability of the instruments used. Charts are appended.
(Author/GSK)

The Effect of Student Personality Typology on Perceptions of Instructor Effectiveness

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The Effect of Student Personality Typology on Perceptions of Instructor Effectiveness

Extensive research has been conducted on the effects of numerous variables on student evaluation of instruction. This research ranges from the "Dr. Fox" effect (Naftulin, Ware & Donnelly, 1973), to the effect of grades (Feldman, 1976), rater age (Frey, Leonard & Beatty, 1975), to amount learned (Cohen & Berger, 1970). Additional research relates student evaluation of instruction to teacher personality characteristics such as agreeableness, dependability, and emotional stability (Isaacson, McKeachie & Milholland, 1963).

There is also an expanding body of literature that relates student "personality traits" to evaluation of instruction. Fairly consistent findings are reported documenting that different personality types do evaluate instruction differently. Studies are catagorized into three groups, according to the measure used for personality type: for field-independent/dependent cognitive styles, for the sensing/intuitive dimension of the Myers-Briggs Type Indicator, and for certain need states of students. It is the intent of this paper to show that indeed students of different personality "types" do evaluate instruction differently. Specifically, student ratings of an instructor evaluation item will vary across student personality types. Type will be defined using Johnson's (1978) Decision Making

Inventory, which is currently under development by the authors. [1]

Theoretical Perspective

It is the intent of this research to introduce Johnson's (1978) Decision Making Inventory (DMI) as a measure of personality type to determine if students of different styles differentially evaluate instruction. A description of the DMI theory follows (see also Coscarelli & Stonewater, 1980).

Drawing from Jungian Theory (1971), Johnson (1978) theorized that a client's psychological style is defined by how individuals make decisions. His decision making paradigm includes two dimensions: the way information is gathered (systematic or spontaneous) and the way data are analyzed (internal or external). From these dimensions four psychological or decision making typologies emerge: systematic internal, systematic external, spontaneous internal, and spontaneous external.

Information gathering and data analysis are two independent processes. An individual's style of gathering information does not affect the style with which the information is analyzed, for these are independent events. Figure 1 will aid in visualizing the relationship.

Information Gathering--There are two basic styles by which information for decision making is gathered. These styles have been

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[1] Johnson was the original developer of the theory of decision making underlying the instrument used in this research. He in fact developed the instrument used in this research. However, after his death late in 1978, the authors agreed to continue the reliability and validity studies for further instrument development.

labeled as spontaneous and systematic and are differentiated by three characteristics: the way individuals react to events, make commitments to new ideas, and orient themselves to goals.

In reacting to events systematics react to component parts of the event, while spontaneous students react holistically. Thus, the systematic student would prefer an instructor who breaks an idea into its logical parts and analyzes and explains each compenent in turn. The spontaneous student would respond better to the professor who provides activities that allow students to experience ideas and respond to them in toto. This experience, rather than the factual analysis prefered by the systematic, provides the spontaneous the opportunity for a holistic response.

The psychological commitment of the systematic is usually cautious, but once made it is difficult to change. The spontaneous makes quick commitments, but will change easily as new information becomes available. Thus, the systematic would respond best to instruction which provides a great deal of information about various ideas, but does not hurry the student in deciding which idea is favored. The professor should avoid providing conclusions until all information is provided and then should have a very detailed arguement supporting the decision. The spontaneous, on the other hand, needs only basic information about ideas and will respond well to professors who provide intermittent conclusions.

The goal orientation of the systematic is very methodical,

while the spontaneous prefers a flexible goal orientation. In an instructional setting, the systematic responds most favorably to the professor with the well organized, outlined lecture that specifies exactly what the goals of the course are. The spontaneous student will respond best to the professor who can be flexible in the presentation of the course and who is willing to take the course in directions requested by the desires of the class or professor at any given moment.

Information Analyzing--Internal students respond best in courses where they are left alone to think through the ideas presented in lecture. Any discussion that occurs is best left to a time after the student has had some time alone. The external, however, will respond best to an instructional setting that provides many opportunities to discuss the ideas presented. The sooner this discussion occurs after lecture, the better. (See Figure 2 for a summary of the theory.)

Thus, the systematic student responds to component parts of an arguement, is cautious making commitments, and is methodical in goal orientation. The spontaneous student responds holistically, makes quick commitments, and is flexible in goal orientation. Internals think then talk, while externals talk and think simultaneously.

Literature Review

Studies relating student personality characteristics to evaluations of instruction can be grouped into three catagories

for the purpose of defining personality. These are cognitive style studies based on field-independence/dependence model (Witkin, et al, 1962), personality trait studies based on the Myers-Briggs Type Indicator and Jungian psychology (Briggs, 1962) and need state studies, based on social perception theory (Warr & Knapper, 1968). Studies in each of the three areas will be reviewed separately.

Cognitive style studies--This first group of studies is based on Witkin's (1962) concept of field-independence/dependence.[2] The central question here is, do field-independent students evaluate instruction differently than field-dependent students.

Numerous studies relate field-independece/dependence to evaluation of instruction. In a study by DiStefano (1970) five extremely field-independent and five extremely field-dependent high school teachers were studied. Students filled out an evaluation questionnaire about each teacher. Results indicate that students who were more similar to their teacher in cognitive style tended to describe them in highly positive terms, while those different from the teacher tended to describe them in negative terms. Although the study is limited by the use of only male students in the sample, it clearly indicates that the cognitive style of the student influences perceptions of instruction.

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[2]The discriminating attribute between the field-independent and the field-dependent styles is the extent to which the individual perceives parts of a field as separate from the entire field or perceives the parts as embedded in the field (Witkin, et al, 1977). For example, when a field independent person is shown a complex figure (the field) in which a more simple figure is embedded, the field independent person will be able to see the simple figure more readily than the field-dependent subject.

In a similar study, James (Witkin, et al, 1977) assigned each teacher of a specially designed minicourse three field-independent and three field-dependent students. Responding to a questionnaire similar to DiStefano's, students who were of the same cognitive style as the teacher responded with "significantly greater interpersonal attraction" (p. 33) than did the students who were of opposite cognitive style. Thus, at least on the interpersonal or rapport dimension, students of different personality types do respond differentially to instruction. An additional outcome of the James study was that not only did same style pairs tend to respond more positively to one another, but the most field-independent teacher graded the field-independent students higher than the field-dependent students. The same was true for the most field-dependent teachers.

In a non-instructional setting, Shows (1967) analyzed results of a questionnaire filled out by an interviewer and an interviewee after a twenty minute conversation in which they were to find out as much about one another as possible. Again, subjects responded differentially: similar pairs (same cognitive style) indicated that they could understand each other more easily, they had greater interest in each other, and they found each other as more sympathetic than did dissimilar pairs.

Another setting that was studied was that of therapist-client (Folman, 1973). In a slightly different design than in the above studies, therapist-client dyads were established on the basis

of their cognitive style. Analysis of the highly attracted pairs indicates greater similarity in cognitive style than for the low attraction pairs. Thus, this study adds the reverse implication to the conclusions of previous studies which have shown that similar cognitive styles will evaluate each other more positively; this study shows that if pairs evaluate each other more positively, they tend to be of similar cognitive style.

In contrast to the above results Witkin and associates (1977) found no differences in evaluation of instruction on the basis of cognitive style. In the study twenty-four teachers taught a minicourse to four fourteen and fifteen year old students. Both students and teachers were evenly divided by sex and cognitive style. Results of the instructional evaluation by the students indicated a differential effect by sex rather than by cognitive style, i.e. students and teachers of the same sex showed more interpersonal attraction than those pairs of opposite sex. The authors interpret these results to indicate that the sex match-mismatch effect was "more potent and took precedence over" (p. 34) the cognitive style effect. Hence, they are concluding that the cognitive style effect may still be present, but that the sex matching overshadowed it. Although these results are inconsistent with other reported results, none of the previously mentioned studies controlled for sex. In the DiStefano study only male teachers and students were used, while James used only male teachers and female students. Thus, the sex matching in the DiStefano

study could be inflating his results, while the opposite sex design of James could be deflating his results.

Myers-Briggs Studies--The next group of studies considers the Myers-Briggs Type Indicator (MBTI) as the measure of personality.[3] The various traits that the MBTI measures will be considered in relationship to differential effects on evaluation of instruction.

Weychert (1975) used the sensing-intuitive dimension of the MBTI to select groups of teachers and their students who had strong sensing or strong intuitive scores. Each student completed a questionnaire designed to measure instructional effectiveness of the teacher. Although clearly limited by the lack of random selection of subjects, the results claim that sensing males rated sensing teachers higher than intuitive teachers, confirming differential evaluation once again, at least for a male sample.

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[3]The MBTI is an instrument designed to measure individual differences in perception and judgment, where perception is defined as the process of becoming aware and judgment is the process of reaching conclusions about what one has perceived (Myers, 1962). The instrument measures four indices which structure the individual's personality - extraversion-introversion, sensing-intuition, thinking-feeling, and judgment-perception.

The extravert-introvert index measures whether the person orients judgment and perception upon people and things (extravert) or upon concepts and ideas (introvert). The sensing-intuition index measures whether or not a person perceives primarily through the five senses or through the more unconscious process of intuition. Thinking-feeling differentiates primarily between whether judging is done on the basis of a true-false approach (thinking) or on the feeling approach of valued-not valued. Finally, the judging-perceiving dimension measures whether the person relies upon the judging process or the perceptive process in dealing with the extraverted part of life.

In another MBTI study, Paraskevopoulos (1968) considered only teacher personality type. He found that students did rate different teacher personality types differently and that sex was an important variable. While results for females were not significant, students rated male sensing teachers as more friendly and warm than male intuitive teachers. Also male intuitive teachers were rated as more understanding and flexible than the male sensing teachers. No differences were found for either males or females on the remaining three personality dimensions of the MBTI. The study demonstrates that students do differentially evaluate instructors along personality lines, expecially the sensing-intuitive dimension.

In a third study, Blank (1970) did not find differences in evaluation by personality type. In his study of electrical engineering students and professors, no significant interaction was found between student personality types and instructor types. Although it is not reported whether or not sex of the subjects was a variable controlled for, it is likely that Blank had the same difficulty Witkin and associates reported when they found a sex by evaluation interaction that overshadowed the cognitive style effect.

Two additional Myers-Briggs studies were conducted in a client-counselor setting. In the first study, Mendelsohn (1966) reports that similarity between counselor and client is positively related to duration of counseling. The author explains these results in terms of the client's satisfaction with counseling: "Briefly, we suggest that similarity facilitates communication between the client and the counselor, thus increasing the client's

satisfaction with counseling...and to continue counseling" (p. 231). Although we are not concerned with the relationship between similarity and duration, the implication of this study supports the personality effect on evaluation: clients who have counselors of the same personality traits tend to evaluate the counseling as more satisfactory than the clients who work with dissimilar counselors.

The second study of client-counselors using the MBTI (Jones, 1968) compared 60 client ratings of five different counselors. Each counselor was assigned three male and three female clients who were similar on the MBTI and three male and three female dissimilar clients. Counselor ratings by students were on five dimensions: empathic understanding, level or regard, unconditionality of regard, counselor congruence and the total relationship. Comparing the ratings of the highly similar clients on the MBTI to those of the low similarity clients indicated a significate difference for only one of the five dimensions. Low similarity clients rate counselors higher on empathic understanding than do high similarity clients. Again, these results support the differential effect of personality type on evaluation of counseling. An interesting outcome, however, is that the direction of the differences in evaluation is different in this study than in the others reviewed. Clients different than the counselor in personality type rate the counselor higher than those similar pairs. Previous studies have shown a similarity effect. An explanation of these results has to do with the nature

of empathic understanding as a device to increase communication effectiveness between counselor and client. If the results of the previous studies are correct, i.e. that similar pairs tend to evaluate each other more positively, then the expectation of clients is that they will like counselors of different personality types less. However, experiencing the counselor's empathy is an unexpected surprise that facilitates communication between the two, leading the client to evaluate the empathy dimension very positively.

Need States--The last section of the literature reviews studies relating student evaluation of instruction to perceived need states of students. Rezler (1965) reports that certain need states have a positive effect upon the way males evaluate instruction, while certain other need states had a negative effect upon the way females evaluate the same instruction. For males, the need states associated with positive influences on evaluation of instruction were exhibition, heterosexual, and nurturance, while exhibition, heterosexual, and succorance need states had negative influence on evaluation for females. Neither succorance for males nor nurturance for females had any effect upon the evaluations. The Edwards Personal Preference Schedule was the measure of need states, and The Purdue Rating Scale of Instruction was the instructional evaluation instrument.

In a similar study, Tetenbaum (1975) related need states to evaluation of instruction, but controlled for qualify of instruction by asking students to evaluate a written vignette of an instructional

sequence. Each instructional vignette was designed to correspond to one of the following need clusters: control, intellectual striving, gregariousness/dependence, and ascendancy. Her results indicate that students did evaluate teachers on the basis of whether or not the teacher's behavior related to their need state. Specifically, students rated the teachers positively, negatively, or neutrally depending in part if teacher behavior was congruent, dissonant or irrelevant to the student's need state.

Summary--In this review nine studies provide evidence that supports the differential effect of personality on evaluation of instruction, while two studies report no effect.

In summary, Fishbein and Ajzen (1972) reach the conclusion that "A positive relationship between attraction and similarity of...personality characteristics...has been found consistently" (p. 511).

Methodology

In order to determine if students with different personality styles respond differently to the same instruction, the DMI was administered to students as a measure of personality type and Frey's (1978) evaluation of instruction questionnaire was administered as the instructional evaluation instrument.

DMI[4]--We have found the constructs of the DMI to be a particularly

[4]While the DMI has undergone a number of field tests and revisions, the form used in this research was the last of Johnson's versions. Subsequent versions of the instrument have been developed by the authors in order to further refine the theory, develop a reliable instrument, and stabilize orthogonal factors for the two major deminsions, SP-SY and I-E.

useful in analyzing classroom behaviors. As these constructs are neither as broad as need states nor as specific as field-dependence/independence, they seem to lie in a more useful middle ground. For example, we have often found that a spontaneous external instructor will consistently be criticized by systematic students for not answering a question well. What commonly happens is that if a student asks a question, that question will begin a stream-of-consciousness flow of ideas by the instructor that are associated with the question. By the time the instructor stops responding the orginal question is forgotten and the student remains ignorant and frustrated. Because these types of interactions are so clearly predicted by the DMI construct, and are so easily observed and classified, they seem especially applicable to the classroom situation.

Frey Instructor Rating--Frey's instructional evaluation questionnaire is a seven item form which separates output into two factors called pedagogical skill and rapport, which account for 75% of the variance in responses. Besides the shortness of the form and its ease in administering, the Frey instrument is useful in this type of research because correlation coefficients are available between each factor and the following variables: class size, grade, professor's rank, number of citations, and student learning. Such information is useful in interpreting evaluation information across classes and professors. Reliability coefficients are .61 for pedagogical skill and .32 for rapport (Frey, 1978, p. 84). Additionally, it is possible to compute two global summary factors

from the Frey instrument. These are pedagogical skill (PS) and rapport (R) and are a weighted sum of particular items.[5] These are useful as summary descriptors because the pedagogical skill factor represents teaching ability, while rapport represents ability to deal with the class and interpersonal interaction.

Respondents

Two different samples of students were used for this research. The first was a group of students enrolled in an introductory chemistry course (N=54) and the second was a group enrolled in a general studies art appreciation course (N=120). Both professors were systematic internal. Each class was taught in a large lecture format. In each class students were asked to fill out both the DMI and Frey instruments. For the DMI students responded to 66 items as descriptive of what they usually do, not descriptive, or that they cannot decide if the item describes them. The seven Frey questions had a Likert-type response field from strongly agree to strongly disagree. Reliability information for the four DMI subscales - internal, external, spontaneous and systematic - are .28, .49, .63, and .68 for the chemistry course, and .55, .56, .70, and .73 for the art course.

Data Analysis

Students were classified as one of the four personality styles by summing the items corresponding to each style. For each dimension (Sp-Sy and I-E), the style with the highest score was

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[5]The equations for computation are:

$$PS = 0.1(\#1)+0.4(\#2)-0.2(\#3)+0.3(\#5)+0.4(\#7)$$
$$R = -0.2(\#2)+0.5(\#3)+0.5(\#4)+0.2(\#6)$$

taken to be the student's style. All ties were omitted from further analysis. (Fifteen ties where omitted from the chemistry course and 35 from the art course. Reported N's reflect this exclusion.)

For each of the seven items on the Frey questionnaire, a one-by-four analysis of variance was conducted to determine if the mean responses for the four DMI personality styles differed. For significant differences, Scheffe'post-hoc analyses were conducted to isolate where the differences were.

For each of the seven Frey evaluation questions, mean responses ($\bar{x}$), and personality type mean responses (SPI, SPE, SYI, SYE) are reported in Table 1 along with F and p values.

Results

The analysis of variance for the two classes yielded surprisingly different results. For the chemistry professor, no question yielded significantly different responses across types; students tended to respond similarly regardless of their decision making style. On the other hand, the results for the art professor are quite different: students of different personality styles evaluated the instruction differently for two questions, one concerning the amount of work required of the students ($F=2.32$, $p \leq .08$) and the other focusing on the professor's ability to plan the course ($F=3.67$, $p \leq .01$). Additionally, there was a significant difference between personality styles on the pedagogical skill factor ($F=2.48$, $p \leq .06$).

Post-hoc analyses for the art data reveal that on question 1 ("The student had to work hard in this course."), systematic students rated the instructor Higher than did spontaneous students.

Evidently, systematics felt they had to work harder than spontaneous students. For question 2 ("Each class period was carefully planned in advance"), spontaneous students rated the professor higher than the systematics, perhaps indicating that systematics do indeed have a higher expectation of organization then spontaneous types. Finally, the post-hoc analysis for the pedagogical skill means did not indicate significant differences between spontaneous or systematic students, although the actual means for the spontaneous students were higher than the systematic students' means.

Discussion

The results presented above clearly present a dilemma in terms of interpretation, especially with respect to previous research. To summarize the findings, both professors were of the same decision making style - systematic internals - yet their evaluations by students were quite different. Overall, the art professor was evaluated much higher than the chemistry professor. Also, contrary to what was hypothesized, students did not differentially evaluate the chemistry professor. For the art professor, the expectation that different personality types evaluate differently is partially substantiated: students similar to the professor rated him higher on the item dealing with amount of work in the course, but rated him lower on planning and organization of the course. The remaining five items were non-significant.

There are numerous explanations for these results in light of

previous research. The first--that instructional quality was not controlled across the two groups--is a plausible explanation. Although there is no apparent method that would make instruction equal across all groups, it is possible that an aptitude by treatment interaction may be occurring: students of different personality styles may differentiate very good teachers, but not very poor ones, or vice-versa. One possible control for this effect is to study the same teachers over a period of semesters to see if their ratings between personality groups stabilize. Of course this procedure assumes that their instruction does not change and that the student populations are similar. It should be noted that none of the reviewed studies controlled for instructional quality except for Tetenbaum, and in her case students were only responding to written vignettes, not live instruction. Thus, the literature does not provide any guidance on this matter.

As a second explanation, selection bias could be occurring between the different populations studied. Populations in the literature varied from high school, to college, to different disciplines. No attempt has been made to determine if there are commonalities between them. In our study, the same difficulty exists. Although the distribution of the two samples we studied are almost identical in terms of the personality styles, other demographics were not studied, e.g., students taking introductory chemistry could be far different from students taking art appreciation as a requirement.

The fact that this study was conducted on the second version of the DMI instrument indicates that the instrument itself may not be sufficiently reliable to measure the required differences. Obviously, this problem will be solved as newer versions are developed.

Numerous studies in the review of the literature used extreme scores to classify personality types, which was not the procedure used in our study. It is possible that the support for the differential evaluation effect only holds for extreme scores. At least in one study (Blank, 1970) no differences were found when extreme scores were not used.

Summary

The purpose of this study was to examine the effects of student personality type on ratings of instruction. Johnson's Decision Making Inventory (DMI) was introduced as a measure of four decision making styles that are often found in the classroom. Frey's instructor rating questionnaire was used to assess the qualities of instruction. Fifty-four students in an introductory chemistry course and 120 students in an introductory art course filled out the DMI and Frey's instructor rating form. The expectation that different personality types evaluate differently was only partially substantiated. Further confidence in these findings would come with a tighter control on instructional quality and student self-selection and increased reliability of the instruments used.

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TABLE I

Evaluation items by Professor and Personality Type

	Chemistry Professor						Art Professor					
	SPI	SPE	SYI	SYE	F	p	SPI	SPE	SYI	SYE	F	p
1 The student had to work hard in this course	4.6	4.3	4.8	4.7	1.95	.13	3.2	2.8	3.4	3.5	2.32	.08
2. Each class period was carefully planned in advance	4.0	3.7	4.2	4.4	1.50	.23	4.4	4.8	4.0	4.0	3.67	.01
3. Class discussion was welcome in this course	1.8	1.3	1.6	1.6	0.59	.63	3.7	3.3	3.4	3.3	0.82	.49
4. The student was able to get personal help in this course	2.4	2.5	2.8	2.9	0.60	.62	3.5	3.4	3.3	3.3	0.32	.81
5. The instructor presented the material clearly and summarized major points	3.9	3.5	3.6	4.6	2.12	.11	4.5	4.6	4.1	4.2	1.61	.19
6. The grading accurately reflected the student's performance	2.5	2.7	2.8	3.0	0.39	.76	3.5	3.4	3.2	3.3	0.77	.52
7. This course has increased my knowledge and competence in this area	4.1	3.5	3.9	4.0	0.52	.67	4.4	4.4	4.0	4.2	1.66	.18
Rapport	1.8	1.7	1.9	1.9	0.11	.96	3.4	3.1	3.2	3.2	0.87	.46
Pedagogical Skill	4.5	4.1	4.5	4.9	1.71	.18	4.4	4.7	4.1	4:2	2.48	.06
N	16	6	25	7	--	--	33	16	54	17	--	--

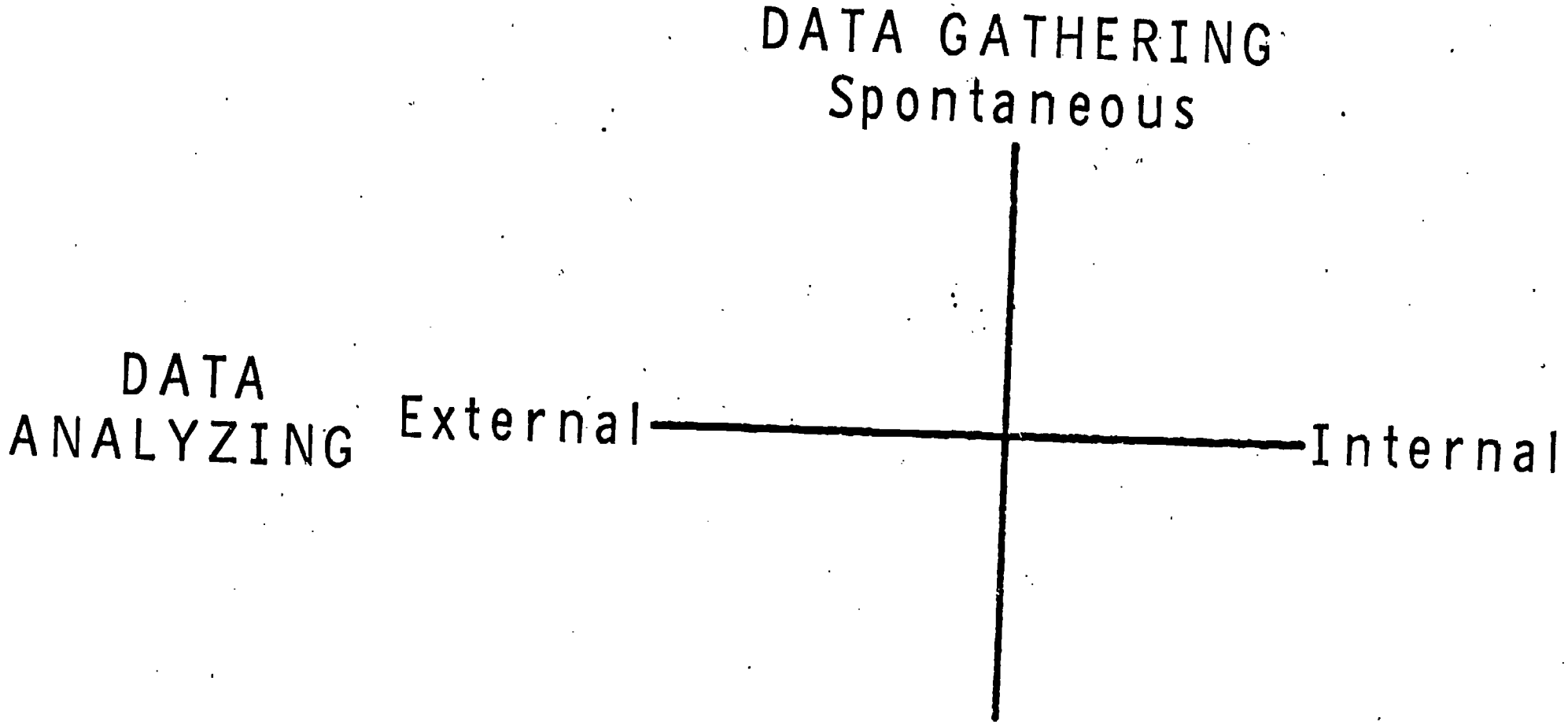

Figure 1. Graphic Representation of the Four Psychological Typologies

	Spontaneous	Systematic
Reaction to Events	holistic summary reaction at first	component parts summary reaction at end detailed information needed
Commitment to New Ideas	quick personalize each, then gather more data change commitment easily	cautious gather all data, then personalize only one selected reluctant to change commitment
Goal Orientation	flexible thought-chaining	deliberate methodical

External	Internal
talk and think feelings clarified by talking.	think then talk feelings clarified by thinking

Figure 2. Summary of Typology Attributes