An experimental design is proposed for analyzing personality dynamics in conflict resolution. The theoretical framework of intervention strategy and possible consequences of different techniques has been discussed in a previous paper by the authors. The purpose of this empirical investigation is to determine if some of the cognitive variables of the subjects, thrust into a learning situation which is focused substantially on conflict resolution, would be modified by the teaching-learning intervention. The teaching methodology was lecture-discussion. Pre and post measurements were taken and analyzed in relation to various personality variables. One significant pre/post change was found along with the beginning analysis of personality configuration and conflict resolution.

INTRODUCTION

The pedagogy of traditional union-management relations classes has implicitly subsumed the theoretical underpinnings of conflict resolution mechanisms. The typical student is, at best, briefly exposed to the peripheral issues of conflict and conflict resolution through either lecture-recitation or simulation methods or both with the naive hope that the subject would somehow internalize the framework thus acquired. At worst, there may be total avoidance of the pedagogy in favor of transmission of rote content learning.

Of late, the developments in the field of experiential learning seem to offer glimmers of hope as well as the impetus to impart cognitive and behavioral skills to students or organizations. Incorporations of such methodologies in industrial relations classes would be timely and topical.

This paper attempts to outline a conceptual model of negotiation behavior in the context of union-management relations, and analyzes the results of a content teaching methodology situation for the purpose of determining an effective intervention method attempting to develop appropriate conflict resolution skills. The purpose of this empirical investigation is to determine if some of the cognitive variables of the participants, thrust into a learning situation which is focused substantially on conflict resolution, would be modified by the teaching-learning intervention and, if so modified, then the probable direction of that change. The theoretical framework of intervention strategy and possible consequences of different techniques have been discussed in another paper by two of the authors, Basuray and Scherling (1). This empirical investigation is but an extension of the total model to specific situation-induced behavior outcomes so that additional support may be contained for designing a comprehensive teaching intervention framework.
Kahn (5) perceive that conflict, defined as a kind of interactive behavior, is a process which begins with some attempted action against and a concomitant attempt at resistance with observable duration and conclusion. From this perspective, the conflict process can be thought of as consisting of a series of episodes, each with its beginning and ending. One such formulation of these modal activities within the overall process could be classified as (a) antecedent conditions, (b) affective states, (c) cognitive states and (d) conflict behavior.

Integrating these respective systems and process framework may help us in comprehending the mechanism in a superior fashion. Such an integration scheme is illustrated in Figure 1.

The primary focus, as is evident, is on the parties in the conflict. Sanford’s (9) perception of intrapersonal conflict is quite in keeping with the framework. He classified the conflict into unconscious and conscious groups. The former, in his opinion, is a more important source of difficulty to an organization, bordering on the pathological state. The individual may have strong impulses which his sense of self-respect requires him not to recognize. Sometimes, “Then an individual is driven by conflicting needs for power and love, one of these needs will be unconscious. It is, therefore, critical to evaluate the affective and the cognitive states of the parties to the conflict and map the configurations to determine how the role stresses sod pressures are coped with. Kahn, et. al. (4) believe that personality variables such as flexibility and introversion-extraversion can act to modify role pressures induced by the social organization.

The second important dimension in the conflict process would be the situational expectations. Kahn, et al. (4) feel that opposing pressures for change and no change in the work situation create role conflict. Thus, conditional variables would be another critical aspect of the conceptual and methodological framework.

Finally, the complex chemistry between personality and situational variables within the field of conflict, through appropriate dynamics, would result in observed conflict behavior. A mapping of such behavior is consequently important in developing superior conflict management skills.

The methodology described in this research paper is based on the conceptual foundations described above.

**METHODOLOGY**

**Design**

In this study, measurements of cognitive variables of participants, both pre and post, were conducted within the larger context of teaching-learning experiences induced in a union-management relations class. Thus, an understanding of the differences in teaching methodologies and their possible impact on learning and behavior outcome is of some importance. The cycle of events in the experiential approach differs from the lecture method by actively engaging the student in the learning process by using exercises and simulations to generate behavior for individual and group analysis. These two approaches have also been described as the “content versus the process approach” to learning. The content approach emphasizes the recall of facts, while the process approach stresses the use of “information” in generating alternative and integrated thoughts and behavior.

The teaching methodology applied for this specific union-management relations course can best be described as content-oriented, laced with a small portion of experiential methods. The overwhelming emphasis was most definitely on the content approach. In our opinion, this method would be representative of typical industrial relations courses taught in universities. The results obtained could, therefore, be utilized to evaluate the effectiveness of the total teaching methodology.

The research conducted should be perceived as a pilot investigative effort and the conclusions derived as tentative. Twenty students, mostly seniors and a few graduate students, participated in the research effort. Three were women. The union-management relations class was a required course for most of the students.

**Measures**

In this empirical investigation, a number of personality variables were selected and measured for the purpose of determining the direction of and the probable reasons for changes in the pre and post perceptions of participants. Substantial emphasis was placed on personality dimensions of the student subjects as a primary determinant of behavior. The emphasis stems from conclusions generated by the authors in previous longitudinal study of student behavior, Basuray and Scherling (1). The variables selected and measured by the researchers are discussed below.

a. Myers-Briggs Type Indicator: The Myers-Briggs Type Indicator (7) is a measure based on Jungian typology of personality variables and is concerned with differences in people that result from the way they like to judge. Two different ways of perceiving are by Sensing (S) and by Intuition (N), while two different ways of deciding are by Thinking (T) and Feeling (F). The combination of perception and judgment makes a lot of difference in the kind of work one will do best and enjoy.

Furthermore, Jung looked upon Extraversion (E) and Introversion (I) as valuable opposites, which everyone uses but not equally. Also, people tend to use Perception (P) and Judgment (J) to deal with the outer world. The Myers-Briggs Type Indicator also measures the Extravertedness (E) or Introvertedness (I) of the individual, as well as their Perception (P) or Judgment (J) to their dealing with the outer world. The personality scores are given as any of the sixteen different combinations of the four following dimensions:
b. Conflict Management Style: Conflict is a natural and pervasive element in people’s affairs. The behavior modes employed by individuals to deal with conflict vary greatly and they are primarily functions of learning from the environment. Conscious effort was made to identify the various conflict behavior patterns of the subjects. To this end, the Hall’s Conflict Management Survey (3) instrument was used to measure the different behavior typology. The Survey is designed to provide information about the manner in which individuals react to and attempt to manage differences between themselves and others. In Hall’s opinion, “conflict dynamics are approached as simply a very natural fact of human interaction whose particular ‘meanings’ are imposed by those who are parties to the conflict. In short, the basic tenet of the Survey and its underlying theory is that people dictate what conflict situations mean and what their consequences will be.” If such assumptions are valid, then it would appear that a consideration of people’s perception components and their information processing style, as measured by the Myers-Briggs Type Indicator, would be of considerable value in understanding conflict behavior.

Based on the Survey score, five different styles of conflict behavior have been identified and utilized in this study. They are: (a) Withdrawing, (b) Compromising, (c) Competing, (d) Cooperating, and (e) Collaborating.

c. Assertiveness Scale: Lack of social competence is a problem for many, and a large part of social competence involves the ability to assert oneself. People vary as to how much they assert themselves and the degree of assertiveness generally influences his or her attitudes towards conflict and, consequently, his or her behavior in a conflict situation. In this research the 30-item Rathus Assertiveness Schedule (8) was utilized to measure the general assertiveness of the participants.

d. Union-Management Attitudinal Scale: Since a negotiation exercise between pairs of students was conducted within the context of union-management relations course, it was considered worthwhile to gather information about the subjects’ attitudinal preferences towards unions and management and the relative strength of such preferences. Knowledge of such attitudinal preferences were considered valuable in determining and explaining conflict resolution behavior. The attitudinal preferences were measured by administering a modified version of Kornhauser’s Union-Management Attitudinal Scale (6).

e. Embedded Figures Test: The concept that perceptual and intellectual (cognitive) tasks may serve in the assessment of broad, salient dimensions of personal functioning is a long-standing one in the history of psychological testing. Perceptual tests like the Rorschach have followed the rationale that from the way in which an individual perceives particular stimuli, inferences may be drawn about the subject’s personality.

In the present investigation, the authors chose the Embedded Figures Test, as designed by Witkin, Oltman, Raskin and Karp (10), to measure the student subjects’ field-dependence-Independence strength. The EFT is a perceptual test. The subject’s task on each trial is to locate a previously seen simple figure within a larger, complex figure which has been so organized as to obscure or embed the sought-after simple figure. Abilities to quickly differentiate the embedded figure have been associated with greater differentiation in perceptual functioning as well as field-dependence-independence.

**PROCEDURES**

The total teaching intervention, as performed in this study as part of the union-management relations course, consisted of a number of specific modules. The teaching methodology was primarily focused on content learning. Two texts, one on the topic of conflict and the other on the psychology of union-management relations, were used in the course. Additionally, one of the researchers performed in the capacity of the nominal teacher for the duration of the entire course, handling such responsibilities as course assignments, administration of tests, conducting lecture-recitation periods on labor-related topics, administration of psychological instruments, and evaluating term papers, examinations, as well as the total course grade. The course was one of the upper division required classes reserved primarily for graduating senior students.

Approximately 60 percent of the semester’s contact hours were devoted to lecture-recitation intervention on labor-related topics. The remaining 40 percent of the semester was devoted to various experiential activities such as case analyses, guest speakers, films, negotiation, term papers and measurements. The one significant element of experiential teaching, feedback, was handled in a haphazard fashion and not effectively reinforced.

The student subjects were administered the Myers-Briggs Type Indicator Scale, the union-management attitudinal scale, and the assertiveness scale in the third week of the 15-week semester. The student subjects were also instructed to set up individual appointments with the authors and other graduate teaching assistants to facilitate administration of the Embedded Figures Test conducted during the fourth and fifth week in the semester. The negotiation game was conducted at the halfway point in the semester. In the fourteenth week, the students were once more administered the union-management attitudinal scale and the assertiveness scale.

The researchers consider the total course methodology, as well as the individual activity timeframes, as of utmost significance in the overall intervention strategy. Therefore, though the outcomes of the negotiation exercise were dealt with in the context of results interpretation, the total course intervention is considered significant for drawing overall conclusions and evaluating the effectiveness of teaching methodologies.

**RESULTS**

The analysis of the pre-post tests was carried out by t-statistic, Correlation analysis was conducted on all the variables measured.

The pre-post measurement results are presented in Table 1. The conflict management style, Withdraw, was the only dimension with a significant change. The subjects saw themselves as adopting a more withdrawing approach to conflict situations. The subjects’ attitudes towards unions and management did not significantly
The subjects saw themselves as adopting a more withdrawing approach to conflict situations. The subjects' attitudes towards unions and management did not significantly change. These attitudes remained virtually the same with the attitudes toward unions somewhat higher.

Table 2 presents the mean results attained from the three personality measurements. The assertiveness scale was transformed from \(-3 - +3\) to \(1 - 6\). A range of \(30 - 180\) would be possible with high scores indicating high assertiveness. A mean of 116.33, standard deviation of 18.96 and a range of 88-147 indicate a heterogeneous sample with respect to assertiveness.

The Embedded Figures Test mean (37.85) and standard deviation (21.67) can be compared to three other male college samples. The means are 45.5, 48.3 and 54.3, and their respective standard deviations are 28.5, 22.4 and 36.8 (10, p. 18).

This comparison indicates that the class tended to be composed of more field-independent subjects than those samples reported in the manual. The mean preference scores and their percentages on the dimension of the Myers-Briggs Type Indicator, compared with 488 college business students (7, p. 14) are approximately the same except that Sensing, Intuition and Perception have exceptionally higher means.

The frequencies of the Myers-Briggs Types are reported in Table 3. The dominant perception-judgment mode is Sensing-Thinking with 7 subjects. Sensing perception outnumbered Intuition perception 10 to 6, and Thinking judgment outnumbered Feeling judgment 9 to 7. There were 9 extraverts and 7 introverts. Auxiliary mode type consisted of 7 judgment individuals and 9 perceptual individuals.

### Table 3

<table>
<thead>
<tr>
<th>TABLE 3</th>
<th>FREQUENCIES OF MYERS-BRIGGS TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ISTJ</td>
</tr>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>ISFP</td>
</tr>
<tr>
<td></td>
<td>1</td>
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</tbody>
</table>

### Table 1

Comparison of Pre-Post Conflict Management Styles and Union-Management Attitudes

<table>
<thead>
<tr>
<th>Conflict Style</th>
<th>Pre Mean</th>
<th>s.d.</th>
<th>Post Mean</th>
<th>s.d.</th>
<th>d.f.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compromise</td>
<td>30.41</td>
<td>7.93</td>
<td>30.18</td>
<td>9.15</td>
<td>16</td>
<td>0.12</td>
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<tr>
<td>Compete</td>
<td>48.65</td>
<td>7.56</td>
<td>50.88</td>
<td>8.08</td>
<td>16</td>
<td>-1.38</td>
</tr>
<tr>
<td>Collaborate</td>
<td>37.82</td>
<td>6.00</td>
<td>45.00</td>
<td>7.62</td>
<td>16</td>
<td>1.55</td>
</tr>
<tr>
<td>Cooperate</td>
<td>34.47</td>
<td>12.82</td>
<td>54.64</td>
<td>8.51</td>
<td>16</td>
<td>-0.08</td>
</tr>
<tr>
<td>Withdraw</td>
<td>31.53</td>
<td>10.53</td>
<td>55.94</td>
<td>7.97</td>
<td>16</td>
<td>-2.28*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Union-Management Attitude Scale</th>
<th>Pre Mean</th>
<th>s.d.</th>
<th>Post Mean</th>
<th>s.d.</th>
<th>d.f.</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Union Attitude</td>
<td>24.83</td>
<td>3.36</td>
<td>25.67</td>
<td>2.64</td>
<td>17</td>
<td>1.46</td>
</tr>
<tr>
<td>Management Attitude</td>
<td>21.11</td>
<td>2.93</td>
<td>21.11</td>
<td>4.32</td>
<td>17</td>
<td>0.00</td>
</tr>
</tbody>
</table>

* p < .05

### Table 2

Assertiveness, Embedded Figures Test, Myers-Briggs Mean and Standard Deviation Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>s.d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assertiveness</td>
<td>116.33</td>
<td>18.96</td>
</tr>
<tr>
<td>Embedded Figure Test</td>
<td>37.85</td>
<td>21.67</td>
</tr>
<tr>
<td>Myers-Briggs Extravert</td>
<td>24.5</td>
<td>56%</td>
</tr>
<tr>
<td>Introvert</td>
<td>18.7</td>
<td>44%</td>
</tr>
<tr>
<td>Sensing</td>
<td>37.2</td>
<td>62%</td>
</tr>
<tr>
<td>Intuition</td>
<td>32.1</td>
<td>38%</td>
</tr>
<tr>
<td>Thinking</td>
<td>23.7</td>
<td>56%</td>
</tr>
<tr>
<td>Feeling</td>
<td>16.1</td>
<td>44%</td>
</tr>
<tr>
<td>Perception</td>
<td>29.5</td>
<td>56%</td>
</tr>
<tr>
<td>Judgment</td>
<td>24.7</td>
<td>44%</td>
</tr>
</tbody>
</table>

* Mean Preference Score of Sample
** Mean Preference Score of 477 College Finance and Commerce Majors
The correlation between changes in Conflict Management Style, Union-Management Attitudes and the personality variables are presented in Table 4. A significant correlation (.56) was found between assertiveness and the Cooperative style. While not significant, assertiveness also correlated with Thinking-Feeling (-.38) and Judgment-Perception (.38). There were no significant correlations between Field Independence-Dependence and the pre-post measurement changes. Field Independence-Dependence did correlate significantly (-.46) with Judgment-Perception. Extraversion-Introversion correlated significantly with Cooperate (-.53) and Management Attitudes (-.33). Sensing-Intuition did not correlate significantly with any of the variables, but is highly related to Collaborate (-.45) and Compromise (.41). Thinking-Feeling significantly correlated with Collaborate (.56). Judgment-Perception did not correlate significantly with any of the change measurements, but did relate to Compete (-.32) and Withdraw (.33).

**DISCUSSION**

The conceptual framework underlying this research effort was adopted and utilized in an earlier research effort by the authors (1). The methodology proposes that certain antecedent conditions produce a person with certain characteristics who interacts with an educational situation with certain characteristics to produce outcomes. The present study is a continuing attempt to map out this domain and, specifically, to understand the cognitive process of conflict resolution.

Research into the effectiveness of educational methodologies would benefit from a control/experimental design. Since the number of students enrolled in the course in which this study was conducted was small, the control/experimental design is being carried out over two semesters. The research reported here is to be considered as the control group. The teaching methodology was basically content-cognition oriented and, in the second semester, the methodology will be more experience-affect oriented.

The subjects were quite heterogeneous with respect to the variables measured. The sample represented varying degrees of assertiveness, field dependence-independence and union-management attitudes. The Myers-Briggs Type Indicator results showed a majority of sensing-thinking individuals which have been previously encountered by the authors and others with subjects exposed to traditional educational methods. The analysis of these results will be explorative in outlining the unwinding of the cognitive process of an individual's personality.

The preference between judgment and perception is a method of dealing with the surrounding world. Both are used, but not at the same time. So individuals can alternate between these attitudes but do tend to adopt a preference for one or the other. An individual's preference is probably not determined in the abstract but, rather as a choice between two specific processes. For example, individuals classified as ST choose between sensing and thinking and NF individuals between intuition and feeling. The JP preference then is a by-product of which process is preferred. This phenomenon of a dominant process preference, along with the extraversion-introversion preference is the basis of Jung's Psychological Types.

The extraversion-introversion preference interacts then with the JP preference in determining one's outward approach to people and things and his inward approach to concepts and ideas. The extravert's dominant process is concerned with the outer world of people and things and his auxiliary process is concerned with concepts and ideas. Introvert processes function in opposite ways. The existence of a dominant process is essential for the development of personal effectiveness since the two perceptive processes, sensing-intuition and the two judgment processes, thinking-feeling are incompatible opposites. Jung felt that, if all preferences were to be equally utilized, such impartiality keeps the processes relatively underdeveloped and produces a "primitive mentality." These preferences then outline the basis of analyzing a person's approach to conflict resolution situation which they may confront.
In addition, the extensive correlational studies between the Myers-Briggs Type Indicator and the Alport- Vernon-Lindzay Value Scores and other measures provide a systematic basis for further analysis.

The concept of field independence-dependence is also a method of dealing with the surrounding world. In the perceptual mode of field independence, the parts of the field are experienced as discrete from their backgrounds, while the field dependent perceptual mode, perception, is dominated by the overall organization of the surrounding field. The EFT assesses the extent to which the organization of the prevailing field dominates the perception of any of its parts. The field independent person is able to disembed the organization of the field in order to locate the sought components, whereas the field-dependent person follows the organizational field presented. Witkin, et. al. (10, p. 7), state, “One who experiences in articulated fashion can perceive items as discrete from their backgrounds; or recognize a field when the field is organized: or impose structure on a field, and so perceive it as organized when the field has relatively little inherent structure. Thus, the ability to analyze experiences and the ability to structure experience are both aspects of increasing articulation. Just as the concept of increasing articulation appears when the individual experiences the experience of an immediately present stimulus configuration (perception) so may it be applied to experience of symbolic material (thinking). This finding of a linkage between analytical and structuring abilities suggest that the concept of field independence-dependence implies a broader concept of cognitive style.

One interesting link suggested by the research that has been conducted is between cognitive style and the nature of defenses. Witkin, et. al. (10) have found that individuals who experience in an articulated fashion tend to use specialized defenses, such as isolation, whereas those with a more global cognitive style tend to use defenses such as repression and denial. Defense help determine the content of a person’s experience. This occurs in part through the regulation of the interrelation between affect and ideation. Further research into this link may lead to understanding conflicts and their resolution.

The significant correlation \((- .46)\) between the dominant mode of judgment-perception and field independence-dependence indicates that field independent individuals are more likely to have a dominant perceptual mode of either sensing or intuition. While field dependent prefer a dominant mode of judgment, either thinking or feeling. These relationships appear consistent with theory in that a more perceptual oriented individual would be more field independent.

One must add the dimension of extraversion-introversion in interpreting the orientation of Jung’s psychological types. Extraversion-introversion correlation \((- .32)\) with field independence-dependence is insignificant. The positive relationship is indicating that introverts tend to be more field dependent. The lack of representation of a full complement of psychological types makes any interpretation tenuous.

The assertiveness correlations were significant at about the \(.10\) level and indicate a configuration that a more assertive orientation is adopted by individuals with a dominant mode of perception, who utilize thinking as their judgment process and tend to be introverted. This configuration would indicate type ISTP or INTP, such an individual is not expected to exert assertive behavior.

The theory underlying the concepts of Conflict-Management Style, Psychological Types and Field Independence-Dependence all postulate a dominant and auxiliary mode of functioning. The Conflict-Management Style concept indicates one’s preference for a particular style of conflict management. This preference can be set aside for another style (back-up system) depending on the circumstances confronting the individual. Considering the five pure styles, it is possible to have 120 different patterns of conflict management, and the degree to which an individual moves along a certain channel is considered his “response flexibility.”

The concept of Field Independence-Dependence designates a “mobility-fixity” dimension. This dimension specifies that individuals who are field-independent may function consistently in this fashion (fixity), whereas others may vary according to the circumstances and/or inner state (mobility). Mobility is considered a characteristic of highly differentiated individuals who can shift level functioning. Shifting is not a feature of field dependent individuals. The EFT does not distinguish the mobility-fixity dimension. The only other significant correlation \((- .56)\) was between thinking-feeling and collaborative conflict style, 9/9. This style attaches major importance to both the personal goals and the relationships. The thinking mode, which places minimum concern for the well-being of his relationships. The competing conflict style, 9/1, reflects a strategy of minimal concern for personal goals and a maximum concern for the well-being of his relationships. The cooperating conflict style, 1/9, reflects a strategy of minimal concern for personal goals and a maximum concern for the well-being of his relationships. The extraversion-introversion dimension correlated significantly \((- .53)\) and \(.48\) respectively with these two conflict styles. These results indicate that extraverts’ and introverts’ change in style was in agreement with Jung’s psychological type description. A somewhat speculative interpretation of the E-I significant correlation \(.53\) with the compromise conflict style, 5/5, would be that introverts have a greater ability to assume a balanced approach to style change.

The only other significant correlation \(.56\) was between thinking-feeling and collaborative conflict style, 9/9. This style attaches major importance to both the personal goals and the relationships. The thinking mode, which places analysis on fact rather than value, would probably be expected to show a more positive change in this style.

The results indicate only one significant change in the pre-post measurements which was in the conflict management style withdraw. The subjects became more withdrawn in their perception of approaches to conflict management. With little active intervention in learning about one’s personal conflict style, it might be expected that students would tend to withdraw. Changes in the dominant style and order of the backup styles is implicit in the model and Hail (3, p. 4) states, “For an individual to adopt a more constructive approach to conflict management, all that is necessary is for him to become aware of the option available and their consequences and then to undertake a conscious program of personal change.” Such a model of analysis and change is now under study.

CONCLUSION

Social and political problems that require negotiation are highly complex and uncertain. Solution of these complex problems necessitate cognitive activity of last
resort—that of human judgment. However, since the major portion of judgmental activity is covert by nature, conflict resolution/negotiation is burdened with added complexity. Human judgment is primarily a quasi-rational process—a mixture of analysis, intuition, and experience—where thinking is partly role-based, utilizing only part of the available information. These cognitive factors contributing to conflict have only recently been the subject of a few empirical studies, thus loosening the hegemony of Freudian concept of motivation based on the nature of interpersonal conflict. Among academic circles, the argument that cognitive aspects of interpersonal conflict should be given as much consideration as the motivational, if not more, is steadily gaining ground.

Results of this pilot study indicate that comprehension of the cognitive processes in conflict resolution can become a powerful intervention tool which can be directed at providing cognitive aids in order to help people overcome those cognitive limitations that prevent them from reaching agreement. Specifically, cognitive aids should help people do two things: (a) clarify judgment processes so that the true nature of disagreement can be ascertained and (b) assist people to change their policies in a visible, controlled way, while maintaining consistency.

REFERENCES


