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# Ethical Reasoning Strategies and Their Relation to Case-Based Instruction: Some Preliminary Results

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## Abstract

This paper describes some preliminary results of an experiment to collect, analyze and compare protocols of arguments concerning practical ethical dilemmas prepared by novice and more experienced ethical reasoners. We report the differences we observed between the novice and experienced reasoners' apparent strategies for analyzing ethical dilemmas. We offer an explanation of the differences in terms of specific differences in the difficulty of the strategies' information processing requirements. Finally, we attempt to explain the utility of case-based ethics instruction in terms of the need to inculcate information processing skills required by the experienced reasoners' strategy.

## Introduction

In this paper, we report some preliminary findings of an empirical investigation of different strategies for analyzing practical ethical dilemmas employed by novice and more experienced ethical reasoners. We undertook this research in part to identify the relationship between case-based instruction in practical ethics and ethical reasoning strategies. Some recent work has emphasized the use of case-based instruction to acquire case experiences for use in subsequent case-based reasoning. By contrast, our previous work has emphasized the role of case-based instruction in teaching more domain-specific case-based reasoning strategies. Compare Edelson's CREANIMATE program (Edelson, 1996) which teaches young elementary students by having them see and modify case examples of animal adaptations, with the CATO program which teaches first year law students a process of making and responding to case-based legal arguments (Aleven & Ashley, 1995). We sought to investigate what the role of case-based instruction might be concerning practical ethical reasoning, specifically reasoning about dilemmas involving whether to tell the truth or disclose information. In this domain, case-based reasoning is less formalized (and more controversial) than in legal argument, but still more structured than in, say, thinking about animal function and adaptation.

The pedagogical value of focusing ethics instruction on individual cases, on case-based comparison, and on explicit procedures for conducting moral deliberation has been recognized in (Winston, 1990; Arras, 1991). A recent engineering ethics textbook proposes a casuistic (i.e., case-based) model for resolving "line-drawing" problems (Harris,

et al., 1995, pp. 127-135). Medical ethics textbooks and courses of instruction focus on case studies (see, e.g., Beauchamp & McCullough, 1984).

The relationship between case-based ethical instruction and ethical reasoning is more controversial, not least because the nature of ethical reasoning is controversial. Contemporary theorists of moral philosophy have debated the distinction between procedural / principled approaches to ethical reasoning and more agent-oriented approaches (See, e.g., Hampshire, 1983; Taylor, 1989; MacIntyre, 1984). These philosophers have argued that modern moral philosophy represents a "shift away from conceiving the moral life in accordance with the specific contexts and exigencies of the moral actor toward a focus on the acquisition of moral rules, and the use of rules in providing the standard for moral judgment" (Keefer, 1994). The theoretical and empirical work of Piaget (1932/1965) and Kohlberg (see Colby & Kohlberg, 1987) has generally supported this trend, describing moral judgment as passing through a series of stages culminating in the application of high order general principles to practical judgments. Carol Gilligan criticized this view of moral development, showing that many decision makers focus on more practical solution strategies (Gilligan, 1982).

In reaction to the procedural / principled approaches, a number of ethicists have developed "new casuistic" models of practical ethical decision making which involve comparing ethical dilemmas to past or paradigmatic ethical cases (Strong, 1988; Jonsen, 1991; Jonsen and Toulmin, 1988; Brody, 1988; Schaffner, 1994). The casuistic approaches focus on the importance of the moral agents' getting the right description and interpretation of a moral dilemma from which follows the choice of an action. They employ more domain-specific "middle-level" principles and case comparisons to flesh out a more adequate description of the problem and its possible solutions. According to Strong's model, for instance, when faced with a moral problem, one should: first, identify pertinent middle-level principles, role-specific duties, alternative courses of action, and morally relevant ways in which cases of this type can differ from one another (i.e., factors). Then, for each option, one identifies paradigm real or hypothetical cases in which the various options would be justifiable, compares the case at hand with the paradigms and determines which paradigms it is "closest to" (Strong, 1988).

We are interested in understanding the uses of cases in teaching in this domain where even the model of reasoning is debated. There are a number of possibilities. The purpose

of case-based instruction in ethics might be to teach students to employ a casuistic model like Strong's and, perhaps, to provide a mental database of paradigmatic cases for purposes of making comparisons. It might be to provide students with practice employing a procedural / principled approach to ethical reasoning and examples of principles and circumstances where they apply. Alternatively, the connection between case-based instruction and ethical reasoning may involve a complex dialectical relationship between principles and cases (Arras, 1991 p. 48f).

Having undertaken an empirical investigation of ethical reasoning strategies among novice and more experienced ethical reasoners, we have identified another plausible hypothesis. We see instruction with cases as a strategy for apprising novices of the importance of description and interpretation in ethical reasoning (Geertz, 1971; Davis, 1991) and teaching them information and methods for meeting the information processing requirements of a particular reasoning strategy we call the RSO (for Role-Specific Obligations) Strategy. As we discuss below, the RSO Strategy is not strictly speaking a case-based strategy, but case-based instruction is uniquely able to inculcate the information processing skills the RSO Strategy requires.

### Collecting Ethical Argument Protocols

Recently, we have completed an analysis of protocols generated in an experiment to document and understand the processes by which subjects in two groups reasoned about practical ethical issues. The first group, meant to represent novice ethical reasoners, comprised fourteen high school students in one of the premier suburban public high schools of the Pittsburgh area. The second group, meant to represent more experienced ethical reasoners, comprised six graduate students enrolled in a medical ethics graduate program at the University of Pittsburgh. Our experimental procedure involved presenting the novice group on three different days with twelve ethical dilemmas. We sought to present cases raising issues intrinsically interesting to high school students, but which also fell within the experience and expertise of the graduate students. All of the dilemmas dealt with issues involving whether or not to disclose information. Nine cases dealt with health care worker / client scenarios, while the remaining three dealt with young adult work place scenarios. For the high school students, each day's session lasted for about 1.5 hours. The subjects would begin by reading a set of from three to six of the cases and filling out a questionnaire regarding how they would resolve the cases. Sample questions are:

"In Case A, should the resident tell Jenny's parents about her plans to leave the hospital? Why?" "In Case B, should Jessica tell the insurance agent that her patient was on drugs? Why?" "Should Dr. Lewis report [to Medicare] that his patient has a more serious condition in Case E? Why or why not?" "What is the best way to handle Case A? Why? (i.e., What should Victor do?)"

We then conducted the same experimental procedure on three different days with the experienced ethical reasoner group. The ethics graduate students read the same cases and filled out the same questionnaires as the high school students.

### Three Strategies for Analyzing Dilemmas

In this paper, we report the preliminary results of our analysis of the students' answers to the questionnaires. An initial review of the students' responses to the questionnaires suggested that, in analyzing the dilemmas, the subjects employed two primary strategies: (1) a Justification / Principled Strategy (PRINC Strategy) and (2) a Role Specific Obligations Strategy (RSO Strategy).

The key to the PRINC Strategy is the application of a general principle or rule as decisive in determining what ought to be done. Rules deal with cases directly. If the conditions for the application of the rule are judged to be met, the action prescribed by the rule is carried out. Conversely, if the action is carried out, the action may be justified by appeal to the rule. An example of this strategy can be seen in the response of a graduate student to a question whether a physician, who feels that an elderly Medicare patient with hypertension "needs more than three days away from her demanding family to rest and recuperate [three days being the maximum hospital stay reimbursable by Medicare], should "report that his patient has a more serious condition." The student said:

"No. To do so is to cheat all of us who pay for the system. If the old lady has a problem family it is a matter for social services, at worst, or perhaps light personal intervention at best."

We have summarized the PRINC Strategy in the following way. It should be noted that while we express both the PRINC and RSO Strategies as processes for explanatory convenience, we are not, as yet, committed to the claim that their steps are performed serially or in a particular order. Moreover, not all of the steps need be present. In the next section, we define specific classification categories based on subsets of the underlined steps.

#### **PRINC Strategy: Justification/Principled**

1. Identify general principles or norms in the dilemma.

1a. The identification process may involve stating hypothetical or assumed conditions necessary for the application of the norm or principle.

2. Determine which norm or principle is decisive.

2a. Identify action(s) in the dilemma which are consistent with the decisive principle or norm.

3. If neither norm or principle is decisive, rewrite the dilemma to accommodate values supported by a norm or principle.

3a. Propose a course of action which is consistent with the norm or principle.

4. When an action is chosen that is consistent with the norm or principle:

4a. Justify action(s) by adducing the norm or principle.

4b. (Counterfactual conditions justification strategy) In order to justify the action chosen, specify hypothetical conditions which would support an alternative action mandating a different action and show that these conditions do not obtain in the present case.

4c. Identify consequences which would ensue or be avoided by performing the action(s) mandated by the norm or principle.

5. Identify an action in the dilemma which is not consistent with a norm or principle and, so, should not be performed. Justify by adducing the norm or principle. Specify alternative action which is consistent with the norm or principle.

Rules and principles have been described by some philosophers as "preformed decisions" or "summaries of the outcomes of conflicts" (cf. Raz, 1990; Nussbaum, 1986) and in their practical role provide subjects' with ready solutions to difficult dilemmas that also carry with them an intermediate level of justification. The graduate student's response quoted above is an example of how, in the exercise of the PRINC Strategy, the determination that one principle is of overriding importance may invoke an "exclusionary" mind-set that can effectively eliminate consideration of conflicting reasons. In this example, the force of the overridden claim (her stress over family problems) is discounted as a medical concern, and viewed rather as a "matter for social services."

By contrast, the RSO Strategy requires recognition of more specific role obligations that can only be derived from knowledge of paradigmatic scenarios or scripts in which they are embedded and from which they acquire their meaning. The RSO Strategy tends to take into account the dilemma's circumstances in the identification of the dilemma as an instance of a paradigm associated with the role specific obligation. For example, consider another graduate student response to the same problem.

"Dr. Lewis should not report a false diagnosis unless there is no other way to provide his patient with adequate care. He should investigate other possibilities ([e.g.] free care fund at hospital for stay over three days, intermediate options such as independent living type nursing home away from her family, and alternative but correct diagnoses providing longer coverage), and failing other options, if he feels that it is in the medical best interests of his patient to remain hospitalized, he should report a more serious condition. Upon doing so, however, he should attempt to explain to his patient why he is doing this, so as to avoid future confusion about her health status."

In this response, the student clearly states that the protagonist's RSO should be to "provide his patient with adequate medical care." After stating this obligation, the student specifies alternative practical steps that would avoid having to choose between the "horns" of the dilemma and still honor his specification of the RSO. If those options are not possible, the subject argues, the physician should perform the action recommended by the role-specific formulation. Finally, the student also attempts to deal with some of the costs of opting for that "horn" of the dilemma, again in a manner consistent with the RSO. We summarize the RSO Strategy as follows:

#### **RSO Strategy: Role Specific Obligations**

1. Identify the relevant role-specific obligations (RSO) and the protagonist's goals the RSO entail which make this dilemma an instance of a particular paradigm.

1a. This process may involve stating hypothetical conditions consistent with the RSO and goals.

2. Determine which action(s) in the dilemma are consistent with the RSO and goals.

2a. Identify the action(s) given in the dilemma which are consistent with the RSO paradigm.

3. If no action given in the dilemma is consistent with the RSO and goals rewrite the dilemma to accommodate values supported by an RSO and goals.

3a. Propose a course of action consistent with the preferred RSO and goals.

4. Having chosen a consistent action:

4a. Justify by explicit reference to middle-level or higher principles associated with the RSO paradigm.

4b. (Counterfactual conditions justification strategy) In order to justify the RSO chosen, specify hypothetical conditions which would support classifying the dilemma as an instance of an alternative RSO paradigm mandating a different action and show that these conditions do not obtain in the present case.

4c. Show the practical consequences of the action that would ensue which are consistent with the RSO and goals.

5. Identify an action in the dilemma which is not consistent with an RSO and goals and, so, should not be performed. Justify by explicit reference to middle-level or higher principles associated with the RSO paradigm. Specify alternative action which is consistent with RSO and goals.

The distinction between the PRINC and RSO strategies maps directly onto the distinction drawn between justification / principled strategies and those which focus on the importance of the moral agents' getting the right description and interpretation of the moral dilemma from which follows the choice of an action (Walzer, 1983; 1994). The RSO Strategy's identifying the duties/obligations of the professional, specifying hypothetical conditions for the dilemma's being an instance of a specific RSO paradigm and specifying practical consequences consistent with the RSO goals are all strategies for adequately describing the dilemma and accounting for its circumstances.

In the course of analyzing the data, another strategy was identified that was judged to be especially prevalent among our high school subjects. The strategy was similar in form to the PRINC strategy, but rather than making appeal to principles or norms (4a) in defense of the solution chosen, these subjects appealed to moral consequences. The strategy was defined using the identical number of components as the RSO and PRINC, and differs mainly in regard to the content of the (4a) justification. An example of a Justification / Consequence or CONSEQ strategy is as follows:

"Yes, the resident should tell Jenny's parents for two reasons. First, Jenny could starve herself to death while at her friends house. Second, if she leaves her parents may sue the hospital and if the resident is found to have known the plot the resident could be reprimanded by the hospital."

#### **Analysis of Questionnaire Protocols**

Our protocol analysis applies methods developed in discourse analysis and extends the work of (Keefer, 1995). All protocols were transcribed and segmented for analysis. We only scored the underlined components of the strategies. As we expected, not many of our subjects used all the

components of a given strategy. The minimal criteria for scoring a protocol as RSO, PRINC and CONSEQ was the presence of a (2a) or (3a) simple action or interactive plan followed by any (4a) justification - i.e., for the PRINC strategy, a principle or norm, for the CONSEQ strategy, an appeal to consequences, and for an RSO protocol strategy, an appeal to role specific obligations. Of course, many subjects generated more than this minimal criteria for strategy membership. In order to provide a measure of differences in the degree of competence and sophistication in subjects' use of a strategy, each response was further classified as belonging to one of three mutually exclusive levels, A to C. The three levels are hierarchically ordered and defined by rules that specify the (increasingly complex) components of the strategy required for a protocol to be scored at a given level. The rules that define levels A to C are as follows:

A	[Strategy] Min	(2a / 3a and 4a)
B	[Strategy] + 1	(2a / 3a and 4a) + (1a and / or 4c)
C	[Strategy] + 2	(2a / 3a and 4a) + (4b and / or 5) + (optional) (1a and / or 4c)

## Results

The relationship between experienced and high school subjects' choice of ethical strategies is shown in Table 1. Of the 63 graduate student responses, 68% evidenced a choice of an RSO strategy (level A, B or C). The 149 high school responses were spread out much more evenly across the different strategies, with 30% evidencing a choice of PRINC, 28% a choice of RSO, 24% CONSEQ, and the rest other. The other category includes protocols classified as nonmoral, unelaborated (i.e., uncodable), and mixed.

Table 2 shows the level of sophistication of the subjects' responses as defined by the levels A to C provided above. For each of the three major strategies, PRINC, RSO or CONSEQ, the Table shows the total percentage of high school and graduate student responses evidencing any of the three strategy levels, A, B or C. Thus, the first column in Table 2 shows that only about 3% of the high school responses reached the C level (the most complex level) of the RSO Strategy. By contrast, the next column shows that nearly 40% of the graduate student responses reached the RSO-C level. The percentage of graduate student RSO responses at each level of complexity decreases monotonically. The high school students use the other strategies and tend not to reach the complex levels of either of them.

It should be noted that these results are preliminary. We have not, as yet, examined inter-rater reliability for coding protocols as either PRINC, RSO or CONSEQ, nor have we tested whether raters can reliably differentiate the components that define each strategy.

## Discussion

We interpret the results of Table 1 as indicating that graduate student responses evidenced greater reliance on the RSO Strategy. The high school subjects' choice of strategy was spread more evenly across the three major strategies.

We interpret the results of Table 2 as indicating that the graduate student responses evidenced more complex RSO

strategies than those of high school students. This result confirms that while the high school students seemed more willing to recommend simple actions as solutions and to adduce rules, principles or moral consequences in their defense, the graduate students seemed better able to specify conditions under which actions are recommended by RSO's, and to consider those consequences of behavior in light of their normative commitments. Graduate students were also more likely to specify alternative (rewrite) strategies (RSO 5) and to justify solutions using counter-factual case comparisons (RSO 4b).

Since the graduate student responses evidenced greater reliance on the RSO Strategy and more complex strategy levels, we hypothesize that the "information processing requirements" of the RSO Strategy are somewhat more comprehensive and exacting than those of either the PRINC or CONSEQ Strategy. By "information processing requirements" of the strategies, we mean the answers to the following questions: What does one need to know to apply the strategy? How are these information requirements different for each strategy? What are the relative information costs of satisfying the strategies' differing information requirements?

From the examples in the protocols, we have noted that posing hypothetical conditions pursuant to the RSO Strategy requires more expert knowledge in the relevant domain of practice such as medical practice. The high school students lack that knowledge. Is the mere acquisition of knowledge about medical practice sufficient to enable a subject to attain a higher strategy level in analyzing a physician-patient situation? In light of the perceived need to provide medical students with instruction concerning practical ethical decision-making, we believe there is probably more to it than this. Domain-specific knowledge is one prerequisite for greater sensitivity to a dilemmas' circumstances and enables greater specificity and articulation of the relevant RSO's. Even a subject with the requisite technical medical expertise, however, may still need to learn how to pose hypothetical conditions meaningfully and effectively in an ethical analysis and to practice doing so.

We hypothesize that the RSO Strategy is generally more complex than the PRINC or CONSEQ Strategy. Some support for this hypothesis is found in the higher level of sophistication of the graduate students' RSO responses in contrast to the high school subjects' RSO responses.

In the vast majority of examples of the PRINC Strategy, by contrast, the subject simply identifies a rule or principle, an action that is consistent with it and also, perhaps, a justificatory appeal to the more fundamental general values that it supports. The comparative simplicity of these PRINC Strategy examples, we hypothesize, stems from the fact that the rules and principles constitute "exclusionary reasons" which allow decision makers to ignore circumstances of the dilemma that are not consistent with the action recommended by the rule or overriding principle. All that is necessary is knowing which principle or norm is decisive and which actions / interests are consistent with that principle. We also observed this same relatively simple pattern in most examples of the CONSEQ Strategy.

Table 1: Choice of Strategy

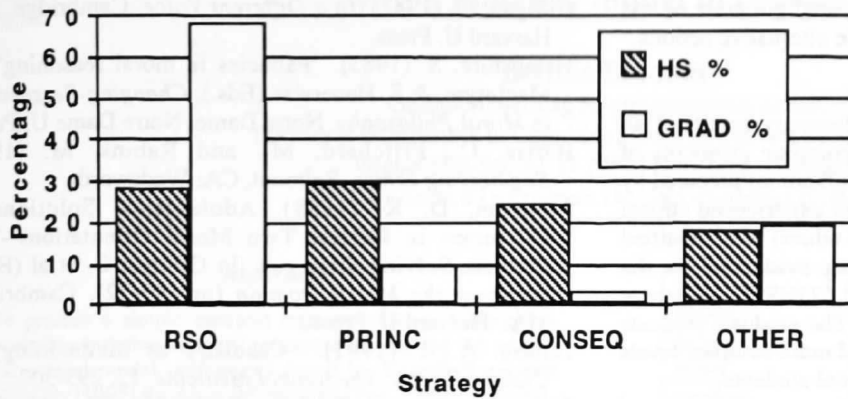
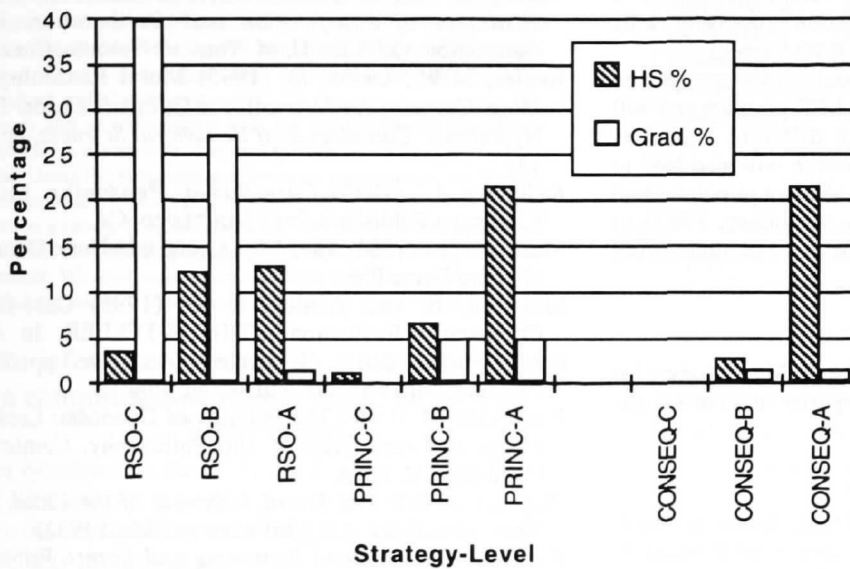


Table 2: Level of Strategy



### Case-Based Instruction

In designing this experiment, our initial hypothesis had been that more experienced ethical reasoners would adopt a more explicitly "casuistic" reasoning strategy. We expected to see some evidence of explicit comparisons to cases along the lines of Strong's method described above (Strong, 1988). We had, moreover, consciously built into the experiment an opportunity to compare and contrast cases. The dilemmas that were presented to subjects were selected so that they could have drawn analogies from one problem to another, either to show that they presented the same principles and/or role specific obligations, the same conflicts among principles, or an interesting comparison of factual circumstances.

In fact, we observed in the students' responses relatively few explicit cross references to other problems or cases. Our data did not show much case comparison even by the graduate students.

In so far as the RSO Strategy shares some features with Strong's procedure, however, it is more "case-based" than the PRINC or the CONSEQ Strategy: (a) Both the RSO Strategy and Strong's procedure focus on elaborating role-specific duties inherent in the situation. (b) Both involve reasoners in comparing the dilemmas to paradigms. RSO paradigms, however, were considerably more general than a specific case. (c) Both involve elaborating a description of the problem in terms of morally relevant factors or hypothetical conditions.

We hypothesize that case-based instruction assists novices to acquire the information processing knowledge and skills required to perform the RSO Strategy. In other words, practice reasoning with and comparing specific cases selected by a teacher for pedagogical purposes, may apprise novices of the information required by the RSO Strategy and help them learn skills for processing the more complex information requirements. Comparing and contrasting cases

can focus attention on the nature of RSO's, their relationship to general norms, morally relevant factors in the ethical domain that can make an RSO paradigm more or less applicable, and the existence of possible alternative actions.

### Conclusions

This paper has described some preliminary results of an experiment to collect, analyze and compare protocols of arguments concerning practical ethical dilemmas prepared by novice (high school students) and more experienced ethical reasoners (graduate students in medical ethics). We identified three strategies for ethical reasoning evidenced in the subjects' responses: RSO, PRINC, and CONSEQ, and three levels of complexity of each strategy. The graduate students preferred the RSO Strategy and attained more complex levels of the RSO Strategy than the high school students.

We attempted to explain the differences in terms of specific differences in the difficulty of the strategies' information processing requirements. Finally, we attempted to explain the utility of case-based ethics instruction in terms of the need to inculcate information processing skills required by the experienced reasoners' RSO Strategy.

In related work, we have built a model of case comparison in practical ethics in the TRUTH-TELLER program and will attempt to adapt it to model these different strategies (McLaren & Ashley, 1995). This research will also lead to improved techniques for representing abstract principles and getting interpretive CBR programs (Kolodner, 1993) to integrate reasoning with cases, reasons and underlying principles.

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