Applying the Multidimensional Ethics Scale to Examine Student Behavior when using Technology

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ABSTRACT

This study contributes to the discussion on student perceptions of questionable academic behavior. Students evaluate behavioral scenarios to see whether they judge the behavior as ethical and to examine potential predictors of that judgment. The scenarios used isolate academic integrity decisions that involve the use of IT. The respondents were given items to examine the influence of moral equity, egoism, relativism, contractualism, and utilitarianism on three dependent variables: individual intention, peer intention, and ethical awareness of students in an academic-setting. This instrument incorporates dimensions from traditional ethical philosophies to determine which reasoning affects ethicality. This research aims to bridge the gap between faculty and student expectations by gaining a deeper understanding of the students' decision making in a theoretical framework. The results suggest that students incorporate a number of philosophical frameworks in judging a specific behavior. Moral equity was the theory that was employed most frequently by the subjects.

Keywords

Multidimensional ethics scale, student attitudes, information and communication technologies.

INTRODUCTION

College faculty members face a continual battle to maintain integrity in their classrooms. The problem is complicated by the fact that student perceptions with respect to cheating have changed with recent generations. Therefore, many behaviors that instructors assume are cheating are not identified that way by students. A recent article in U.S. News & World Report relays a story about a student who spent an hour programming his advanced calculator with notes for an exam. He estimated it would have taken him about twenty hours to study the same material. The student explains, "I don't really consider what I did cheating…because in the real world I would be using that device…I see that as just being more efficient." (Clark, 2008, p. 75). Kidwell, Laurel and Wozniak (2003) report on a survey about cheating given to students and faculty at one academic institution. They find agreement between the groups on the frequency of some cheating behaviors, but in other cases faculty thought the instances of cheating were either higher or lower than actually reported by students. Their study shows the general misunderstanding between the two groups. Donald McCabe, a noted expert on academic integrity in universities, offers, "The challenge for educators is we need to come to some agreement on what the rules are, because students are not accepting the rules that have been out there for years." (Zernike, 2002, p.1) Honor codes and the development of mutual trust have been suggested as part of the solution. The current attitude of "us" versus "them" between faculty and students needs to be traded for shared expectations about academic behavior.

Information technology (IT) changes the capabilities for both cheating and detecting cheating. It also creates a new set of questionable behaviors about which students and faculty need to have a common understanding. Higbee, Sanford and Schultz (2011) replicate a prior study about student perceptions on cheating behaviors. In the more recent study, the list of behaviors is expanded to specifically include items related to IT. The three IT items include 1) using electronic devices in exams, 2) using ideas from a paper purchased over the Internet as the foundation for a paper, and 3) cutting and pasting from the Internet for a paper. Student responses about whether these activities constituted cheating were split for all three items, but especially for the third one. Many of them added comments to explain that cutting and pasting is cheating only if it is not cited. The authors of the study note that it is critical that faculty members explain their views on cheating behaviors as students may not inherently agree with long-held faculty beliefs.

This study contributes to the discussion on student opinions about questionable academic behavior. Students evaluate behavioral scenarios not only to see whether they judge the behavior as ethical, but also to examine potential predictors of that judgment. The scenarios used isolate academic integrity decisions that involve the use of IT. The respondents were given items from the multidimensional ethics scale (MES). This instrument incorporates dimensions from traditional ethical philosophies to determine which reasoning affects the overall judgment of ethicality. This research aims to bridge the gap between faculty and student expectations by gaining a deeper understanding of the students' decision making in a theoretical framework.

MULTIDIMENSIONAL ETHICS SCALE

The multidimensional ethics scale (MES) is designed to be a predictor of ethical judgment (Reidenbach and Robin, 1990) and assumes that more than one rationale is used when making an ethical judgment by an individual (Clark and Dawson, 1996). MES has been found to outperform the Defining Issues Test (DIT) when the purpose is to model ethical judgment or ethical/unethical behavior (Robin, Gordon, Jordan and Reidenbach, 1996). The MES considers the work of five ethical philosophies (Justice Theory, Relativism, Deontology, Teleology-Egoism, and Teleology-Utilitarianism) and uses those five philosophies in the development of its scale. Justice Theory suggests actions are based on fairness and treating equals the same. Relativism suggests actions are based on guidelines that are part of one's social or cultural system. Deontology suggests that one must act in conformity with universal ethical rules. Teleology-Egoism suggests that one acts in a manner that suites them best, looking out for his/her own self-interest. Teleology-Utilitarianism suggests actions are based on cost/benefit analysis, with actions chosen being based on the most good for the most people.

Starting with a 33 item instrument across the five philosophies, the MES was originally reduced to 14 items (Reidenbach and Robin, 1988) and then ultimately reduced to eight items (Reidenbach and Robin, 1990). McMahon and Harvey (2007) proposed that the MES be changed to a 10-item scale. However, subsequent analysis by authors such as Nguyen and Biderman (2008) suggested that Reidenbach and Robin's eight item scale was sufficient at that time. However, Shawver and Sennetti (2009) developed what they termed a Composite MES. That scale consists of 12 items, and considers egoism and utilitarianism, which are not included in the eight item scale. Loo (2004) also assessed the eight-item scale and deemed it valid and reliable, but noted the lack of egoism and utilitarianism and suggested the short eight-item be used when administration time is limited. Therefore, we chose to utilize the 12-item scale which is comprised of all five ethical dimensions – moral equity, relativism, egoism, utilitarianism, and contractualism. Each of the dimensions is discussed below.

Moral Equity

Morality is concerned about beliefs of right and wrong and can be thought of as part of Justice Theory. Moral equity deals with "inherent fairness, justice, goodness and rightness", as well as family acceptance (Reidenbach and Robin, 1990, pp. 645-646). This suggests that the moral equity dimension begins in the home, with early childhood lessons regarding fairness and right and wrong. Moral equity is measured using four items (unjust - just; unfair - fair; not morally right - morally right; not acceptable to my family - acceptable to my family). Moral equity has been found to be related to ethical behavioral intentions in certain situations (Nguyen and Biderman, 2008).

Relativism

Relativism is concerned with the "guidelines, requirements, and parameters inherent in the social/cultural system" (Reidenbach and Robin, 1990, p. 646), suggesting that society and culture are important in determining one's ethical beliefs and that no universal ethical rules exist that govern everyone (Reidenbach, Robin and Dawson, 1991). Since society and cultural understanding come later in one's life, obviously this dimension would also be acquired later in one's developmental stages. Relativism is measured using two items (culturally unacceptable - culturally acceptable; traditionally unacceptable - traditionally acceptable).

Egoism

Egoism is concerned with an individual's self promotion and personal satisfaction (Nguyen and Biderman, 2008). It suggests that "it is possible for an individual to help others, help formulate and follow the rules of society, and even give gifts if that person feels that those actions are in his or her own best interests" (Reidenbach et al., 1991, p. 91). Egoism is measured

using two items (not self-promoting for me-self-promoting for me; not personally satisfying for me - personally satisfying for me).

Utilitarianism

Utilitarianism is concerned with the greatest good for the greatest number of people through a cost/benefit assessment (Nguyen and Biderman, 2008). It also implies that individuals should behave as to create the best possible good to evil in society (Reidenbach et al., 1991). Utilitarianism is measured using two items (produces the least utility - produces the greatest utility; minimizes benefits while maximizes harm - maximizes benefits while minimizes harm).

Contractualism

Contractualism deals with "the idea of a 'social contract' that exists between business and society" (Reidenbach and Robin, 1990, p. 646) and is part of Deontology theory. It is the notion of an implied obligation, rule, duty, or contract. In business, exchanges occur with an obligation of product received and payment made. However, these obligations go beyond just a monetary dimension and involve the notions of fair play, duty, rights, and truth telling (Reidenbach and Robin, 1990). They entail unspoken promises and unwritten contracts as well. Contractualism is measured using two items (violates an unwritten contract - does not violate an unwritten contract; violates an unspoken promise - does not violate an unspoken promise). It has been found that student's being taught about contractualism ethics can result in students who are less likely to behave unethically (Nguyen, Basuray, Smith, Kopka and McCulloh, 2008).

DEPENDENT VARIABLES

With the MES, there are three separate dependent variables: ethical awareness, individual intention, and peers' intention. Ethical awareness is the extent that the individual felt an action was ethical/unethical (Cohen, Pant and Sharp, 2001). Ethical awareness (Shawver and Sennetti, 2009) is measured using one item (the action described is ethical - unethical). Individual intention is similar to behavioral intention as defined by Fishbein and Ajzen (1975). It measures one's intention to perform or not perform an act, or to behave ethically or unethically. Individual intention is measured using one item (the probability that I would do the same action is high – low) measured on a seven point scale (Shawver and Sennetti, 2009). Peers' intention (Shawver and Sennetti, 2009) is also measured on a seven point scale using a single item (the probability that others my age would do the same action is high - low). Each of these three dependent variables is measured for each of the different scenarios used in this study. Figure 1 illustrates the model showing the 3 different dependent variables that will be tested individually. We next address the method and present the results of the study.

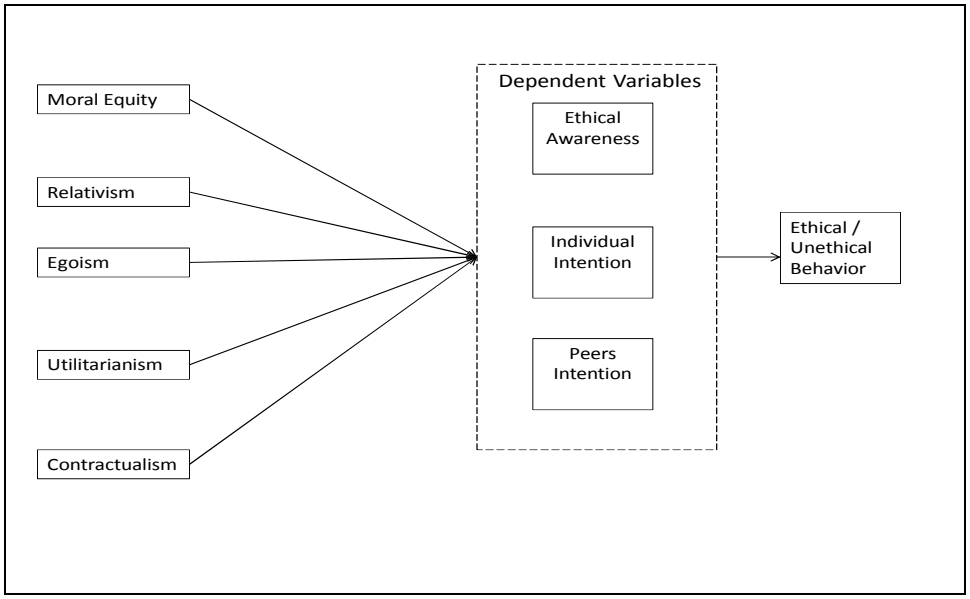

Figure 1. Model for MES

METHOD

Initially, extant literature was used to assist in the development of multiple scenarios to address the research question. Through multiple iterations, we circulated the first draft and appropriate revisions to business professionals who did training and consulting in ethics and to academic researchers who had published articles relating to ethics and IT. Eight experts provided feedback that was included in both the scenarios and the instrument. Subsequently, the scenarios and instrument were pilot-tested using nine graduate students taking a graduate business ethics class. After the graduate students completed the instrument, they provided both written feedback and discussion comments regarding their ability to understand the scenarios and the questions presented as well as the time to complete the instrument. This information was used to further refine the instrument and scenarios.

The participants for this study included undergraduate students from two southwestern universities in the United States. Student participation was completely voluntary and anonymity was maintained as only aggregate responses would be reported. Fifty-three responses from students at one university and 33 from the other university were collected. All of the students were in sophomore or junior level business classes. Table 1 contains detailed demographic information from the sample. Ninety-three percent of the participants were between the ages of 18 and 24, and 55% of them were male. Ninety-one percent of the respondents were classified as sophomores and juniors. Since the context of the decisions in the scenarios is framed in information technology, the participants were asked about their daily use of the following communication tools: Facebook®, e-mail, LinkedIn®, MySpace®, Twitter®, text messaging, instant messaging, and chat rooms. These students spend on average 2.39 hours per day and 6.76 average days per week connected with the aforementioned technology tools.

Demographic Variable		MES Survey
Age	18 to 24	93%
	25 and over	7%
Gender	Male	55%
	Female	45%
Major	Accounting	27%
	Finance	19%
	Management	11%
	Marketing	8%
	MIS	5%
	Other/Unknown	30%
Race	African American	13%
	Asian	15%
	Caucasian	58%
	Other/Unknown	14%
Classification	Sophomore	58%
	Junior	33%
	Senior	6%
	Other/Unknown	3%
Days per week using technology tools for	Mean	6.76 days
	Std. dev.	2.23 days
Hours per day using technology tools for	Mean	2.39 hours
	St. dev.	2.97 hours

Table 1. Demographic Data

Previously validated scales from extant literature were adapted for this study. Appendix A provides the details for the Improper Internet Citations scenario including the specific measurement items adapted from Shawver and Sennetti (2009). Table 2 contains a summary of the four scenarios as well as the descriptive title for each that will be used throughout the paper.

Improper Internet Citations It is 11:00 p.m. and Susan is Facebook chatting with her friends. She has not started writing her research essay due the next day. One of her friends suggests finding papers on the subject from the Internet. Susan takes her friend's suggestion and copies and pastes three paragraphs exactly from a website and places them in her essay. She puts the URL at the end of the three paragraphs referencing the web site, but does not include any quotation marks. She continues by adding some paragraphs of her own to the writing. Even though University policy indicates that all material taken directly from sources must be quoted, Susan feels that the URL placed at the end of the paragraphs is sufficient.
Chat Room Project Students in Professor Ziegler's management information systems class are required to complete a group project via a chat room as one of their assignments. Professor Ziegler announces to the class that it is important that each member of the group work on the project equally as the group will receive only one grade, and only those teammates that do contribute equally should receive credit for the assignment. Group One consists of four members, Alyssa, Brian, Carole, and David. One week before the project is due, all four members met electronically in a chat room, each individually participated, and together they completed half of the project. The night before the project is due, the members meet via chat room again to complete their project. Brian, Carole, and David each contribute equally during the session. Alyssa logs into the chat room but does not contribute. The other members work for over two hours and send her repeated messages, but she never responds. The next day, Alyssa arrives to class with no excuse for her lack of contribution during the online chat session. The group turns in the assignment with all four names on the cover page.
Collaborative Programming Sam and Ginger are both taking an advanced visual basic programming class this semester. According to the class syllabus, each assignment is to be done individually and not in groups. They have been working individually on a project for the class for several days and are having difficulty getting either of their own programs to run correctly. Around 2 am on the day the project is due, they agree via a text message to work together. They decide to combine their efforts and skills, pull the best parts from each individual project, debug the problem spots and turn in the project as their individual work.
Internet Plagiarism Professor Smith is reviewing the final papers in his management class. He turned the papers into turnitin.com to check for plagiarism prior to reading them. When reviewing the turnitin.com reports, he learns that Jason has 42% of his paper copied directly from various Internet sites. As a result, Professor Smith gives Jason a zero on the paper and reports him to the college on charges of academic misconduct.

Table 2. Summary of Scenarios

SmartPLS Version 2.0 was used to analyze the data following guidelines outlined by Chin (1998). The recommended sample size requirement of 10 observations per construct (Hair, Black, Babin, Anderson and Tatham, 2006) is met with a sample of 87 to analyze each of the dependent variable models with six constructs. Nomological, convergent, and discriminant validity were applied to assess the validity of the constructs. All of the construct scales for this study were previously validated in extant research providing nomological validity; convergent validity was assessed in four ways: examination of factor loadings, Cronbach's alpha, composite reliability (CR), and the average variance extracted (AVE). Table 3 includes the mean, standard deviation, AVE, Cronbach's alpha, and composite reliability for each of the constructs. Analysis of the factor loadings and cross loadings for each of the four scenarios showed all loadings greater than .70 as recommended by Hair et al. (2006). Additionally, the average variance extracted was greater than .5 as recommended by Chin (1998), and the Cronbach's alpha and composite reliability were greater than .7 (Fornell and Larcker, 1981). The square root of the AVE was compared to the construct correlations and in each case the square root of the AVE was greater than the correlations indicating discriminant validity. (Due to space limitations, the 12 tables for the factor loadings and the 12 correlation tables with the square root of the AVE on the diagonal are not included.)

	Mean	Standard	AVE	Composite	Cronbach's
Improper Internet Citations			Values for DV1		
Moral Equity	2.01	1.26	.82	.95	.93
Relativism	2.49	1.32	.81	.89	.76
Egoism	1.84	1.25	.88	.94	.87
Utilitarianism	2.26	1.28	.83	.91	.80
Contractualism	2.08	1.38	.89	.94	.88
DV1 –Would you do it?	6.40	1.35			
DV2 –Would your peers do it?	4.30	1.41			
DV3–Is it ethical?	6.29	1.03			
Chat Room Project			Values for DV3*		
Moral Equity	2.91	1.18	.69	.90	.85
Relativism	3.57	1.52	.86	.92	.83
Egoism	2.49	1.36	.89	.94	.87
Utilitarianism	3.09	1.45	.82	.90	.79
Contractualism	2.63	1.41	.91	.96	.91
DV1 – Would you do it?	4.01	1.97			
DV2 –Would your peers do it?	3.00	1.71			
DV3 – Is it ethical?	4.38	1.30			
Collaborative Programming			Values for DV1		
Moral Equity	3.18	1.54	.88	.97	.96
Relativism	3.67	1.52	.85	.92	.82
Egoism	3.61	1.83	.91	.96	.91
Utilitarianism	4.1	1.60	.86	.92	.83
Contractualism	2.58	1.56	.97	.98	.97
DV1 – Would you do it?	4.06	1.75			
DV2 –Would your peers do it?	2.39	1.38			
DV3 – Is it ethical?	5.01	1.56			
Internet Plagiarism			Values for DV1		
Moral Equity	5.56	1.65	.87	.96	.95
Relativism	5.80	1.28	.87	.93	.86
Egoism	4.43	1.88	.91	.95	.89
Utilitarianism	4.59	1.79	.91	.95	.89
Contractualism	5.66	1.73	.98	.99	.98
DV1 – Would you do it?	3.02	1.93			
DV2 –Would your peers do it?	3.30	1.89			
DV3 – Is it ethical?	2.07	1.59			

Scale = 1-7

*DV3 is used on this scenario since DV1 and DV2 were not significant.

Table 3. Descriptive Statistics and Psychometric Measurement Validation

RESULTS

Considering the four scenarios and three different potential dependent variables for each scenario, we analyzed a total of 12 structural models. The standard bootstrap resampling procedure in SmartPLS was used to test each model and determine the significant paths. Contractualism, utilitarianism, egoism, relativism, and moral equity were all modeled as reflective constructs. Table 4 shows the significant paths for each of the three models per scenario. Each of the scenarios has at least one structural model with significant path(s) to a dependent variable. For the Improper Internet Citations and the Collaborative Programming scenarios, all three of the dependent variables had significant paths to them. Table 4 also includes the R-square for each of the 12 models. R-square gives an indication of the percentage of explained variance of that latent construct as driven by the indicator constructs. The largest R-square values appear in the Improper Internet Citations and the Internet Plagiarism scenarios. By far the Internet Plagiarism scenario is the most parsimonious with moral equity

being the only predictor of ethical awareness and individual intention and explaining a large amount of the variance. Additionally, moral equity was a significant predictor of individual intention for Collaborative Programming and Internet Plagiarism while egoism and contractualism influenced individual intention for Improper Internet Citations. Relativism was the only significant predictor of peer intention as shown in the Improper Internet Citations and the Collaborative Programming scenarios. For the dependent variable, ethical awareness, four of the five independent variables were significant in at least one scenario. The only independent variable that was not a significant predictor of ethical awareness was egoism, while moral equity was a predictor in three of the scenarios. In the next section, we address the contributions and limitations of this study as well as provide suggestions for future research.

Scenario	DV	Any Significant	Which Ones	R-
Improper Internet	1 – Individual Intention	**Yes**	Egoism and Contractualism	0.643
	2 – Peer Intention	**Yes**	Relativism	0.108
	3 – Ethical Awareness	**Yes**	Utilitarianism	0.485
Chat Room Project	1 – Individual Intention	No		
	2 – Peer Intention	No		
	3 – Ethical Awareness	**Yes**	Moral equity and relativism	0.463
Collaborative	1 – Individual Intention	**Yes**	Moral equity	0.262
	2 – Peer Intention	**Yes**	Relativism	0.109
	3 – Ethical Awareness	**Yes**	Contractualism and moral equity	0.369
Internet Plagiarism	1 – Individual Intention	**Yes**	Moral equity	0.623
	2 – Peer Intention	No		
	3 – Ethical Awareness	**Yes**	Moral equity	0.768

Table 4. MES Structural Model Summary by Scenario

DISCUSSION

In this study MES, an ethics theory that has not received significant attention in the IS literature, was applied to explain the influences that differing ethical philosophies have on the ethical judgments of college students. The ethical judgments all referred to behaviors in an IT setting. A better understanding of student decision making in these settings can help faculty clearly set expectations for student responsibilities. Moral equity was the theory that most frequently predicted the student judgments. This finding suggests that students respond to an overall sense of fairness in evaluating questionable behavior. Faculty and campus administrators can capitalize on this knowledge by explaining policies in a way that shows how the behavior of one ultimately affects the fairness to the whole group. Current students may not readily consider the campus community as a whole, and bringing this to their attention can appeal to their reliance on fairness.

Admittedly, from the media exposure regarding ethical violation in business practices, dating back to the Enron scandal in 2001 to the more recent investigations of multiple lending institutions, the pertinence of ethics education in business remains at the forefront. This extends to the point that the Association to Advance Collegiate Schools of Business (AACSB) generally expects "Individual ethical behavior and community responsibilities in organizations and society" (AACSB website) to be one of the topics covered for those receiving business degrees. One of the strongest practical implications of this study is the application of the findings to the classroom for faculty teaching ethics and IT. Because the study uses academic-based scenarios that are relevant to college students, the scenarios can be utilized as a foundation for classroom discussions. Through class discussion, faculty can emphasize both the ethical use of IT and illustrate the unethical use of IT. Interactive learning can be facilitated by engaging the students in dialogues of improper and proper behavior regarding their use of IT. In particular, discussions of individual intention, peer intention and ethical awareness can enhance student understanding and expand their mental model for the importance of ethics in business. Faculty could also include a discussion of the antecedents: moral equity, egoism, relativism, contractualism, and utilitarianism.

As with all studies, limitations exist. First student subjects were selected from universities in geographically similar locations. It is possible that geographical location could produce cultural influences that impact one's judgment. Future research could include subjects attending universities in different regions of the United States as well as different countries to allow for a comparison across international cultures. The second limitation is that students provided self-reported judgments about their

behaviors; the researchers did not observe or report any actual behaviors. Future research could expand on this study by including data captured from classroom discussions to identify weaknesses in students' ethical frameworks. Content analysis could be used to analyze transcripts of classroom discussions and expand the current model to include additional antecedents to individual intention, peer intention, and ethical awareness. Additionally, future research should expand this study by comparing multiple theories of behavior (i.e., TRA, TPB, DIT) and ultimately developing a combined model to explain individual intention, peer intention, and ethical awareness.

This research examined the influence of moral equity, egoism, relativism, contractualism, and utilitarianism on individual intention, peer intention, and ethical awareness of students when using IT in an academic-setting. From a practical standpoint, college faculty can apply the findings from this study to promote the ethical use of IT during class discussions and lectures. From a theoretical standpoint, researchers can use the findings from this study to create additional scenarios for future studies and have a springboard for model expansion.

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APPENDIX A. Instrument Items

Example questions for Scenario 1:

DV1 – Would you do it? (7 pt scale; 1=High and 7=Low)
The probability that I would undertake the same action as Susan is:

DV2 –Would your peers do it? (7 pt scale; 1=High and 7=Low)
The probability that others my age would undertake the same action as Susan is:

DV3 – Is it ethical? (7 pt scale; 1=Ethical and 7=Unethical)
The action by Susan is:

MES Scale:
With respect to the action by Susan, I would consider it:

1. **Moral Equity --** (7 pt scale)
   1=Unjust1 and 7=Just; 1=Unfair and 7=Fair; 1=Not morally right and 7=Morally right; 1=Not acceptable to my family and 7=Acceptable to my family

2. **Relativism --** (7 pt scale)
   1=Culturally Unacceptable and 7=Culturally Acceptable; 1=Traditionally Unacceptable and 7=Traditionally Acceptable

3. **Egoism --** (7 pt scale)
   1=Not self-promoting for me and 7=Self-promoting for me; 1=Not personally satisfying for me and 7=Personally satisfying for me

4. **Utilitarianism --** (7 pt scale)
   1=Produces the least utility and 7=Produces the greatest utility; 1=Minimizes benefits while maximizes harm and 7=Maximizes benefits while minimizes harm

5. **Contractualism –** (7 pt scale)
   1=Violates an unwritten contract and 7=Does not violate an unwritten contract; 1=Violates an unspoken promise and 7=Does not violate an unspoken promise