

# **Moral and Ethical Decision Making**

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## Abstract

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This report summarizes the work completed in contract W7711-037897/A. The purpose of this contract was to conduct an empirical investigation of both the cognitive and affective components of peoples' reactions to moral and ethical choice dilemmas and their influence on the decision-making process and outcome. Respondents were contacted by email through their enrollment in the Virtual Lab of the Center for the Decision Sciences at Columbia University. They responded to a set of two civilian and two military ethical decisions. Their choices, in addition to cognitive and affective components of each choice and the scenario as a whole, were recorded. These scenarios and questions were developed as a result of an extensive literature review performed as the initial task of this contract. Surveys were placed on-line, allowing participants to complete them via a variety of web browsers. The sample consisted of 212 respondents, all of whom resided in the United States. There were 121 female and 91 male respondents. The mean age was 47.89 years, standard deviation 7.87. The youngest respondent was 19 and the oldest was 66.

## Résumé

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Le présent rapport résume le travail accompli en vertu du contrat W7711-037897/A. L'objectif de ce projet était de mener une étude empirique sur les éléments cognitifs et affectifs des réactions des gens face aux dilemmes liés aux choix moraux et éthiques et de leur influence sur le processus de prise de décision et sur le résultat. On a communiqué par courriel avec les sujets, lesquels étaient des personnes inscrites auprès du Virtual Lab du Center for the Decision Sciences de l'Université Columbia. Ils ont répondu à un ensemble de questions éthiques, dont deux étaient de nature civile et deux de nature militaire. Leurs choix ainsi que les éléments cognitifs et affectifs de chacun de ces choix et le scénario dans son ensemble, ont été enregistrés. Ces scénarios et ces questions ont été élaborés à la suite d'une analyse documentaire approfondie, la tâche initiale de ce contrat. Les sondages ont été mis en ligne, ce qui permettait aux participants de les remplir par l'intermédiaire de divers navigateurs Web. L'échantillon se composait de 212 sujets, dont 121 femmes et 91 hommes, tous résidents des États-Unis. La moyenne d'âge était de 47,89 ans et l'écart-type de 7,87. Le sujet le plus jeune avait 19 ans, le plus âgé avait 66 ans.

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## Executive summary

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### Moral and Ethical Decision Making

Elke U. Weber; DRDC Toronto CR 2007-087; Defence R&D Canada – Toronto; July 2007.

**Purpose:** The purpose of this project was to conduct an empirical investigation of both cognitive and affective components of people's reaction to moral and ethical choice dilemmas and the influence of these components on the decision-making process and outcome.

**Methodology:** Respondents were contacted through their participation in the Center for the Decision Sciences' Virtual Lab, at Columbia University. Each participant received two military and two non-military scenarios in a counterbalanced order. They were asked a number of questions regarding consequential, social, and emotional components of two choice options associated with each scenario. They were also asked questions regarding their decision mode use in each scenario. In addition, participants were asked basic demographic questions. Surveys were placed on-line with a software package called PHPSurveyor that allowed respondents to complete them via a variety of web browsers.

**Sample Composition:** None of the total 212 respondents who finished the tasks were eliminated from the sample, as the data did not reveal any evidence of non-honest or careless responding. All of the respondents were residents of the United States. There were 121 female and 91 male respondents. The mean age was 47.89 years, standard deviation 7.87. The youngest respondent was 19 and the oldest was 66.

# Sommaire

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## Moral and Ethical Decision Making

Elke U. Weber; DRDC Toronto CR 2007-087; R & D pour la défense Canada – Toronto; Juillet 2007.

**Objectif:** L'objectif de ce projet était de mener une étude empirique sur les éléments cognitifs et affectifs des réactions des gens face aux dilemmes liés aux choix moraux et éthiques et de leur influence sur le processus de prise de décision et sur le résultat.

**Méthodologie:** On a communiqué avec les sujets, sélectionnés par l'intermédiaire de leur participation auprès du Virtual Lab du Center for the Decision Sciences de l'Université Columbia. Tous les participants ont reçu deux scénarios militaires et deux non militaires dans un ordre équilibré. Ils devaient répondre à un certain nombre de questions concernant les éléments corrélatifs, sociaux et émotionnels ressortant de deux options possibles proposées pour chaque scénario, ainsi qu'à des questions relatives aux processus de décision qu'ils ont utilisés pour chacun des scénarios. Des questions démographiques de base leur étaient aussi demandées. Les sondages ont été mis en ligne, avec un progiciel appelé PHPSurveyor qui permettait aux sujets de les remplir par l'intermédiaire de divers navigateurs Web.

**Composition de l'échantillon:** Parmi les 212 sujets qui ont accompli les tâches, aucun n'a été rejeté de l'échantillon puisque les données ne laissaient voir aucun indice que les gens répondaient de manière malhonnête ou peu consciencieuse. Tous les sujets interrogés résidaient aux États-Unis. Parmi eux, il y avait 121 femmes et 91 hommes. La moyenne d'âge était de 47,89 ans et l'écart-type de 7,87. Le plus jeune avait 19 ans, le plus âgé avait 66 ans.

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# 1 Introduction

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Stress affects decision making in multiple ways, in both everyday contexts as well as military decision environments. Existing decision research has explored the effects of stressors that include time pressure, work load, and fatigue on operator level decisions. In military environments, there is however another, higher-order source of stress that affects both the decisions of operators (the executors of commands) and especially the decisions of military personnel who issue commands; stress arises from the experience of conflict in the face of uncertainty about the outcome of decisions, opposing demands from different stakeholders, and moral and ethical dilemmas.

The last source of conflict, in the face of moral and ethical dilemmas, is the topic of the proposed work, because it has not received the research attention from which the other sources of stress have benefited.

We provide an empirical investigation of both cognitive and affective components of people's reaction to moral and ethical choice dilemmas and their influence on the decision-making process and outcome, in order to shed light on the topic of moral and ethical decision making.

## 1.1 Moral and Ethical Decision Making

One of the defining features of an ethical conflict is that it involves being pulled between two or more objectives, values, or ideals which often elicit strong emotional reactions. The competing objectives or values may both be ethical in nature, as in the conflict between loyalty to a friend and duty to report that friend's unlawful behavior. Alternately, one of the competing values may be ethical (e.g., the desire to help a person in need or in danger) while the other is pragmatic (e.g., financial prudence or self-protection). In either situation, a moral or ethical conflict more than other conflicts often has a strong emotional component. One of the challenges decision makers face in such situations is the need to integrate their emotional reactions to different choice options with their cognitive evaluations of the possible or expected outcomes of these options. Following this definition of an ethical decision, ethical or moral decisions do not simply constitute a specific content domain of decisions that parallels and complements other content domains such as financial decision making or recreational decision making (Weber, Blais, & Betz, 2002). Instead, ethical decisions can occur in any substantive content domain; putting it differently, many decisions across content domains include ethical aspects or considerations. The factors that contribute to whether a specific decision is being construed as an ethical issue or a health or financial issue are themselves an important topic of empirical investigation that have implications for the ethical training and education.

Morality can be defined as a system of judging acts in light of an ideal or a code of conduct. Moral judgments involve judgments about what somebody (either the decision maker or another person) should do in a certain situation. Haidt (2001) defines moral judgments as judgments about the actions or character of other people, using as a standard of comparison the moral prescriptions and ideals of one's culture or subculture, which are frequently formalized in written or unwritten codes of conduct. Most scholars agree that moral or ethical decisions need to be intentional and in response to a sense of obligation that is shaped by an ideal (Blasi, 1987).

## 1.2 Philosophical Approaches

There appear to be three philosophical approaches to ethical decision making. The intuitionist approach focuses mostly on the process of reaching a decision and is by far the most subjective and phenomenological of the three, involving only the decision maker's own sense of right and wrong.

By contrast, the deontological and the utilitarian definitions of ethical decision making focus more on the consequences of one's decisions, albeit in different ways. Rule-based, duty-based, or deontological definition of morality is adherence to a code of conduct for its own sake. It is the decision or action, not the motive behind it, which is judged to be moral or immoral. From the deontological perspective, any decision involving the possible violation of rules or laws falls within the moral domain.

Utilitarianism, which defines moral behavior as behavior that maximizes people's welfare (Singer, 1999; Unger, 1996), is the best-known consequentialist system. From a utilitarian perspective, the quality of a moral decision is judged by the extent to which the outcomes match those that would be obtained by following a global utility maximization model

In summary, the scope of what is considered a moral or ethical issue differs as a function of philosophical orientation and from author to author. We include in the domain of moral and ethical decision domain to be those decisions that (1) involve the decision maker's sense of right and wrong, (2) involve violations of laws, ethical codes, or societal norms, and/or (3) affect the welfare and well-being of others.

## 1.3 Cognitive and Affective Components of Decision Making

Most theories of choice under uncertainty are strongly cognitive and consequentialist in orientation (Loewenstein, Hsee, Weber, & Welch, 2001). Although non-rational elements may be recognized, these elements tend to be de-emphasized in favor of the rational ones (i.e. Kohlberg's influential model of decision making). However, non-rational elements, such as affect, risk perception, risk preference, personality characteristics, and decision difficulty are important when examining ethical decision making.

Decision researchers have sometimes extended trade-off and preference research to moral and ethical issues. While some experimental situations are considered to reflect real-world social dilemmas, laboratory trade-off research has been criticized for relying on the assumption that these decisions are domain-independent (Blais & Weber 2001; Goldstein & Weber, 1995).

Loewenstein et al (2001) proposed that affect and particular anticipatory emotions felt at the time of the decision (e.g., dread or anxiety) play a strong role in many types of decisions, and that the addition of decision makers' emotions to models of choice may make decisions more predictable.

In the context of risky financial choices, Hsee and Weber (1997) documented that empathy influences decisions. Respondents predicted concrete others would make decisions more similar (i.e., risk averse) to their own decisions than abstract others, suggesting that they attributed the concrete other to have feelings of fear or worry similar to their own (i.e., empathy).

Although Loewenstein et al. (2001) and Hsee and Weber (1997) made these suggestions in the context of risky decision making, many researchers (Casebeer & Churchland, 2003; Haidt 2001; Kagan, 1984; White, 1994) agree that emotions are an integral part of ethical decision making as well. Emotions arise in the context of interpersonal relationships and help form and guide social relationships, including moral evaluations of behavior and character.

Haidt (2001) has suggested that moral judgments are made primarily at the affective level, and that rational arguments are usually no more than post-hoc rationalizations. Moral judgments are made through moral intuition (the sudden appearance of a moral judgment accompanied by an affective reaction such as disapproval) rather than through moral reasoning. In Haidt's research, subjects made immediate and strong moral judgments, but were unable to produce coherent reasons to support their judgments. People's affective response was a better predictor of their moral judgment than was their reasoning about the potential harmful consequences of the act.

According to Kagan (1984) the universal unpleasant emotions are the anticipatory fears of experiencing the following events or feelings: physical harm, social disapproval, task failure, empathy towards people in need or danger, the feeling of responsibility for harming another, boredom with gratified desire, cognitive dissonance, and the feeling of uncertainty from encountering discrepant and difficult to understand events. Virtues are the behaviors or attitudes that prevent the unpleasant emotions, but they may differ from culture to culture. Though cultural expectations and personal beliefs may establish specific rules of morality, these rules are preceded by moral emotions, which may be biologically determined (Kagan & Lamb, 1987, Dunn, 1987).

Decisions are difficult when they involve tradeoffs between qualitatively different dimensions that are difficult to compare, such as the choice between monetary gain and intangible effects on others' goals (Weber, Baron, & Loomes, 2001), or between sacred and secular values (Tetlock, 2003). Decision difficulty may lead to decision aversion.

## **1.4 Decision Modes and Strategies**

Moral philosophers have sometimes offered hypotheses about the internal processes of decision making. Hare suggested that people generally make moral judgments at an intuitive level but can reason more analytically when there is sufficient time, training, or need (Hare, 1981). Intuitions thus seem to correspond to heuristics, which can be followed to produce a decision quickly and easily, but which sometimes require additional analytic examination. In Hare's view, critical analytic thinking is particularly useful for deriving general moral principles, which can then be applied to specific situations.

Kohlberg (1969, 1983) similarly suggested that general moral principles arise from rational processes, and that everyday moral reasoning is a conscious, rational, verbal act. Rest, Bebeau, Bebeau, Narvaez, and Thoma (1999) suggest a somewhat different model, suggesting that moral judgments are schema-based. By contrast, in the view of Turiel, Killen, & Helwig (1987), children make moral judgments by imagining the consequences of actions and performing counterfactual reasoning.

Most social psychology research has focused on the decision itself and choices made by the subject, not on the procedure used by the subject. For a more thorough examination of possible decision strategies, it is useful to turn to the judgment and decision making research tradition.

Goldstein and Weber (1995) identify four general and non-exclusive categories of decision strategies: nondeliberative (determined by factors such as habit or chance, or made according to category-specific heuristics or episodes); associative deliberation (determined after experiencing a

stream of associations); rule-based deliberation (making and following a plan at either a conscious or an unconscious level); and schema-based deliberation (interpreting a situation in light of pre-existing cognitive structures). Casebeer and Churchland (2003) point out that many day-to-day moral judgments are made at the nondeliberative level on the basis of background social knowledge; no reflection is needed to decide on the inappropriateness of jumping a line in front of a handicapped person, for example.

Specific subcategories include intuitive decisions (following a “gut feeling”), seeking advice, making social comparisons, feature-focused processing (an analytic method of comparing alternatives point by point), similarity to an ideal (choosing the alternative that most resembles the internal ideal or standard), and story-based processing (constructing stories about alternatives, and deciding on the basis of the internal coherence and attractiveness of the narratives) (Goldstein & Weber, 1995).

Blais and Weber (2001) offer five somewhat different categories:

*Recognition-based:* Assignment of the decision to a category for which a decision rule is available.

*Analytic:* Conscious computation, integration, and comparison of advantages and disadvantages of the available alternatives.

*Argument-based:* Marshalling of reasons in favor of an alternative.

*Affect-based:* Guided by emotion.

*Story-based or schema-based:* Guided by narratives.

Blais and Weber also examine five more concrete decision strategies: compromise, authority/consultation, decision avoidance/status quo, rational, and emotional. Blais and Weber’s experiment designed to examine the relationship between sex, content domain, risk perception, and decision mode also has implications for moral decision making. As one of five questions, subjects were asked about their decision making process when deciding whether to plagiarize a paper. Most subjects said they would “go with a gut feeling.” It is worth noting that this question also elicited very high perceived risk ratings by the subjects; it seems possible that in situations of high perceived risk, anticipatory anxiety could trigger an intuitive-level decision, eliminating any perceived need to use more time-consuming decision strategies such as rationally examining pros and cons or consulting with friends.

## 1.5 Present Research

We provide an empirical investigation of both cognitive and affective components of people’s reaction to moral and ethical choice dilemmas and their influence on the decision-making process and outcome, in order to shed light on the topic of moral and ethical decision making in military and civilian scenarios.

Decision modes included Recognition-based (Rule and Virtue), Analytic (Care, Consequence and Self-Interest) and Affect-based (Emotion).

We also included a number of items to measure perceived social norms, consequences, difficulty, risk, and a number of emotional (including social emotional) variables for each option presented.

This allows us to examine the effect of these variables on mode use and decision choice, as well as the effect of mode use directly on choice.

## 2 Methodology

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Respondents were contacted by email through their enrollment in Columbia University's Virtual Lab, and agreed to complete a questionnaire for a payment of 8 USD. In addition to demographic and feedback sections, the questionnaire included a series of four ethical scenarios, two with military content and two without.

The surveys were placed on-line with a software package called PHPSurveyor that allowed respondents to complete them via a variety of web browsers. Only those invited to the survey were allowed to participate. The order of scenarios and times were recorded. Respondents were first presented with an informed consent form (a combination of information from the Institutional Review Boards of Defence Research & Development Canada Toronto and Columbia University). Email and phone contacts were provided for the Center for Decision Sciences, in case participants had questions or concerns. In addition, both IRB's protocol numbers, e-mail and phone contacts were provided. To indicate full understanding of the purpose of the study, anonymity of responses (all identifying respondent information, including contact information was being stored on a secure server and in a separate file from their responses to the surveys), and their ability to exit the study at any time, respondents clicked a button at the end of the Informed Consent form. After consent to participate was given, respondents provided demographic background information. All participants then read and answered questions regarding all four scenarios. Half of the participants received military scenarios first and half received the non-military first. Presentation of options for each scenario was also counterbalanced. Participants then filled out a short feedback form regarding the survey.

Respondents took between 7 and 116 minutes to complete the study, with a mean of 35 minutes.

At the end of the study, respondents received information about the payment process. Payment was delivered by Paypal, an internet service company that provides payments in the form of transfers to bank or credit card accounts. They were told to expect to receive their payment in a couple of weeks.

### 2.1 Sample Composition

None of the total 212 respondents who finished the tasks were eliminated from the sample, as the data did not reveal any evidence of non-honest or careless responding. All of the respondents were residents of the United States. There were 121 female and 91 male respondents. The mean age was 47.89 years, standard deviation 7.87. The youngest respondent was 19 and the oldest was 66.

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## **Annex A Summary of Categories of Option Perception**

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### **Categories of Perception**

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#### *Consequential*

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How risky do you think this option is for you?  
How beneficial do you think this option is for you?  
The possible harm to others resulting from this option would be:  
The chances of negative consequences to others occurring:

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#### *Social Norms/Ethics*

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*How well do the following characteristics describe each option?*

Just  
Fair  
Morally Right  
Acceptable to my family  
Culturally acceptable  
Traditionally acceptable  
Violates an unspoken promise  
Violates an unwritten contract  
Most people would consider this option to be

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#### *Emotional*

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*"When you imagine yourself engaging in this option, how much do you experience each of these emotions?"*

Happiness  
Sadness  
Anxiety  
Empathy  
Guilt  
Shame  
Outrage  
Desire to punish someone  
Disgust  
Anger  
Pride  
Fear

## Annex B Modes

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### Calculation-Based

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*General*

Consider whether the ends justify the means  
Contemplate objectives to be achieved or avoided  
Weigh potential benefits against risks

*Self*

Protect your own self-interest  
Act in your own best interest  
Look out for yourself

*Others*

Act out of care for others  
Ensure as little harm as possible is done to others  
Show concern for another person/creature

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### Rule/Role-Based

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*General*

Follow society's laws  
Stick to organizational or social regulations

*Ethical*

Let your roles or obligations determine a course of action  
  
Do what a person of honor would do  
Act with integrity  
Do the "right" thing

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### Affect-Based

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*General*

Trust your immediate affective reaction(s)  
Follow your gut feeling(s)  
React to the emotions involved

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This report summarizes the work completed in contract W7711-037897/A. The purpose of this contract was to conduct an empirical investigation of both the cognitive and affective components of peoples' reactions to moral and ethical choice dilemmas and their influence on the decision-making process and outcome. Respondents were contacted by email through their enrollment in the Virtual Lab of the Center for the Decision Sciences at Columbia University. They responded to a set of two civilian and two military ethical decisions. Their choices, in addition to cognitive and affective components of each choice and the scenario as a whole, were recorded. These scenarios and questions were developed as a result of an extensive literature review performed as the initial task of this contract. Surveys were placed on-line, allowing participants to complete them via a variety of web browsers. The sample consisted of 212 respondents, all of whom resided in the United States. There were 121 female and 91 male respondents. The mean age was 47.89 years, standard deviation 7.87. The youngest respondent was 19 and the oldest was 66.

Le présent rapport résume le travail accompli en vertu du contrat W7711-037897/A. L'objectif de ce projet était de mener une étude empirique sur les éléments cognitifs et affectifs des réactions des gens face aux dilemmes liés aux choix moraux et éthiques et de leur influence sur le processus de prise de décision et sur le résultat. On a communiqué par courriel avec les sujets, lesquels étaient des personnes inscrites auprès du Virtual Lab du Center for the Decision Sciences de l'Université Columbia. Ils ont répondu à un ensemble de questions éthiques, dont deux étaient de nature civile et deux de nature militaire. Leurs choix ainsi que les éléments cognitifs et affectifs de chacun de ces choix et le scénario dans son ensemble, ont été enregistrés. Ces scénarios et ces questions ont été élaborés à la suite d'une analyse documentaire approfondie, la tâche initiale de ce contrat. Les sondages ont été mis en ligne, ce qui permettait aux participants de les remplir par l'intermédiaire de divers navigateurs Web. L'échantillon se composait de 212 sujets, dont 121 femmes et 91 hommes, tous résidents des États-Unis. La moyenne d'âge était de 47,89 ans et l'écart-type de 7,87. Le sujet le plus jeune avait 19 ans, le plus âgé avait 66 ans.

14. KEYWORDS, DESCRIPTORS or IDENTIFIERS (Technically meaningful terms or short phrases that characterize a document and could be helpful in cataloguing the document. They should be selected so that no security classification is required. Identifiers, such as equipment model designation, trade name, military project code name, geographic location may also be included. If possible keywords should be selected from a published thesaurus, e.g. Thesaurus of Engineering and Scientific Terms (TEST) and that thesaurus identified. If it is not possible to select indexing terms which are Unclassified, the classification of each should be indicated as with the title.)

cognitive; affective; moral and ethical; dilemmas; decision-making