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# Non-Ethically Relevant Emotional Content Affects Decision In Difficult Ethical Dilemmas

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Non-ethically relevant emotional content affects decision in difficult ethical dilemmas

A Thesis Submitted to the  
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Degree of Doctor of Medicine

by  
Brian Marcus

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Abstract:

Non-ethically relevant emotional content affects decision in difficult ethical dilemmas

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Objective: To evaluate the cognitive and affective factors which contribute to ethical evaluations by members of ethics committee (EC).

Method: A total of 70 EC members at 4 large medical centers were given clinical vignettes and asked to make judgments. Each vignette had two versions and each EC member was randomly assigned one of the two versions to evaluate. The two versions differed only in affective content (likeability of agents) which had no bearing on the ethical issues. The EC members were then asked, using a 7-point Likert scale, to make an ethical judgment, and give an analysis as to what ethical principles they used in making their decision.

Results: In two pairs of clinical ethical dilemmas, positive affect influenced the ethical evaluation in favor of the agent portrayed positively, and negative affect resulted in the opposite effect. In the clinical vignettes where there was no significant difference in any affective response to the agents of the evaluator, no difference in ethical decisions were seen between different versions of the vignette.

Emotional content also had an effect on which ethical principles were used by EC members to explain their evaluations.

Conclusion: Ethical evaluations by EC members are effected by non-ethically relevant emotive content of clinical scenarios. Emotional biases may play a significant role in the evaluation of ethical dilemmas, even though EC members may not be explicitly aware of them. Bioethical principles are used to rationalize these judgments after decisions have been made.

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## **Introduction**

How do health care providers make ethical decisions? What is the explicit reasoning methods used and how much do they depend on ethical theories, established norms or rules? To what extent does ethical intuitions and emotion play in the decision making process? How does the emotional content of clinical narratives affect the decision making process of hospital ethics committee members? Does emotional response affect the choice of biomedical principles used in making ethical decisions.

Hospital ethics committees (EC) are consulted to help resolve difficult conflicts and other ethical dilemmas arising in the hospital settings. Once an ethics consult is requested, the EC will convene, usually with the parties involved in the issue or disagreement. After hearing from the parties involved, members of the committee have a chance to ask questions of the parties present.

When the joint meeting is over, the ethics committee members will convene to discuss the case among themselves. Theoretically, during this discussion period, individual members of the committee will decide on their opinions. Most of the discussion involves particular facts of the case, and the application of the appropriate bioethical principles and theories which may be relevant. Alternate recommendations are considered, and, at the end of the discussion, members are polled as to their opinions.

### **Ethical basis of decision making**

Theoretically, decisions are based on the medical, social and other facts of the case weighed against an ethical framework. A typical framework for medical ethics is

summarized well by Gillon R in 1994 (1). He discusses the four main principles of medical ethics that seem to dominate in the United States. These four principles are autonomy, beneficence, non-maleficence, and justice.

### **Autonomy**

"Autonomy-literally, self rule, but probably better described as deliberated self rule" the definition used by Gillon in 1994 still holds true today, however the principle of autonomy is ever evolving. Autonomy could be defined as a patient's ability to direct care in a way that is in line with their wishes (2). A broad definition may be important because in modern medicine we encounter situations where our autonomy may not mean we directly self-rule, but that someone may rule on behalf of us holding our wishes in mind.

In a simple aspect autonomy "requires us to consult people and obtain their agreement before we do things" the reason why consent is required for surgical procedures. In a more broad aspect autonomy is respecting a patient's ability to dictate their own care. Which is especially important as we continue to shift away from a paternalistic medical model, which had been the model used classically in medicine in the United States up until the 21st century. Paternalism allowed the physician to dictate care, if the physician believed that a certain order of care is correct than regardless of patient preference the doctor engages in that line of care. Paternalism became distasteful to patients the general populace as they learned more about the workings of medicine around the turn of the century (3). And the pendulum swung all the way over

to autonomy. Now even if the physician disagrees with the patients judgement the physician still will proceed with care in line with the patients wishes. Now when the patients wishes seem so out of line with what is best for the patient in certain situations the physician can overrule. The famous cases of course being the medical treatment of Jehovah's witnesses in their ability to deny blood for themselves; however, it was deemed unethical for them to deny blood for their children. The parent's autonomy only extended so far until the principle, which we will discuss in the next section, beneficence, doesn't allow us to withhold blood from the children.

However, in modern medicine occasionally we want to preserve a patient's autonomy; however, if the patient is unable to speak for him or herself we must use some other type of model in order to make a decision. In the United States we use substituted judgment. Substituted judgment is where an 'other' may rule on the patients behalf not knowing exactly what you want in a given situation, but weighs the patients values and wishes and then directs medical care in line. An exemplar of when substituted judgment is necessary would be when a young individual whose specific end of life wishes are not known undergoes a traumatic event and a family member must step in and direct care (4). The family member instead of using their judgment uses the patients in a substituted fashion and therefore preserves the patient's autonomy. Another example of this could be an unexpected anesthetic or operating procedure where the patient could not be consented, but required additional procedures while under in the operating room.

The principle of substituted judgment alludes to the short-comings of any bioethical framework used in a practical clinical setting. No matter, what sort of framework one may create, it seems that nature seems to find a way to push us into an ethical corner. The Jehovah's witness case being a prime example, which is the importance of having not just one bioethical principle in mind and allow for evolution of the principle over time.

### **Beneficence**

Beneficence is a seemingly simple principle; however, commonly comes into play when there is disagreement as to the direction of care. Beneficence literally means actions taken to help prevent or remove harms or to simply improve the situations of others (3). A Beneficence can be defined as the goal of modern medicine and healthcare is to provide the best possible health to our patients from emergency surgeries to primary care. Munyaradzi argues that beneficence is the primary principle obligation that "should always be acted upon unless it conflicts on a particular occasion with an equal or stronger principle."

Common times for beneficence to conflict are as we alluded before in the Jehovah's witness case. Typically when a patient comes into the hospital hemorrhaging blood a doctor's first instinct is to give the patient blood, support them, save their life. It is a basic primal instinct to many physicians, we work to save lives. So when a patient bleeding, dying in front of us says no thank you, I cannot accept blood for religious reasons it jars us. We know the principle of autonomy, we understand that we should

respect the patient's wishes, but our beneficence principle kicks in. We want to do what we think is good, we want to save a life. And in the case of the Jehovah witness the courts ruled that patient autonomy was more important than beneficence and we should not transfuse these patients (4). However, the court ruled oppositely for children of Jehovah witnesses. We may consider that perhaps the autonomy of the parent went up against the beneficence of the child and the court ruled that we must do right by the child even though we are going against the parent's autonomy. A principle similar and as with autonomy always clashing with beneficence is the third bioethical principle non-maleficence.

### **Non-maleficence**

Gillon describes non-maleficence in 1985 simply as "primum non nocere" or avoiding harm to the patient. He tackles some of the principles inherent in medicine especially taking risks, causing harm, is often necessary to obtain therapeutic benefit. Chemotherapy is perhaps the modern example, where patients have been asked to undergo round after round of chemotherapy, weeks of nausea, vomiting, diarrhea, inability to sleep, inability to eat, tired all the time, in the hope that we can eradicate that last cancer cell. That we can destroy the cancer before we destroy the host. Much of palliative care is based on the principle of non-maleficence, often the do-everything is not the approach we want to take. Physicians often battle with the principle of non-maleficence, our want to comply with beneficence when a procedure or treatment is too risky or too painful for a patient to endure. One of the difficult aspects on do-no-

harm is that patient's perception of pain or the harm of various treatments or procedures can be vastly different which forces us to continually judge if this patient is undergoing too much suffering, is it time to press on, or is it time to stop.

## **Justice**

Justice is perhaps the most complex of the four bioethical principles of modern medicine, but Gillon describes it as "fair distribution of scarce resources (distributive justice), respect for people's rights (rights based justice), and respect for morally acceptable laws (legal justice)...[and] equality is at the heart of justice."

Distributive justice refers to the fact that everything in medicine is a finite resource. It is the reason that we choose the cheaper generic drug instead of the brand name, why we don't obtain that extra set of labs. Everything in medicine is a resource and while not directly, indirectly every resource spent on a patient is a resource that can't be spent on another patient. An example would be bumping a non-critical patient to the next day because a critically ill patient needs the operating room. There is a finite resource, the operating room, and distributive justice determines it should go to the more critically ill patient as the lesser of two harms is to have the non-critical patient wait a day and save the critical patient's life.

Rights based justice and Legal justice refer to the respect for the basic rights that we ascribe to all humans and patients and that we adhere to all laws that we deem morally fit. Often these two things overlap as in modern times rights are often determined in the court of law. Rights based justice compels the emergency physician to

provide life saving care for the patient with no insurance. We've deemed it from also not only ethically right, but legally right to help a patient in this scenario. Even in scenarios, such as when working with criminals, where a physician may not want to provide care, occasionally legal justice and rights based justice may compel us to provide lifesaving care for a less than reputable individual.

### **Blending the four**

When considering the four principles (autonomy, beneficence, non-maleficence, and justice) it is important to weigh all of them when considering a complete ethical framework. In certain ethical scenarios some principles may be more important and some may not be relevant at all; however the four principles work in tandem with each other as a framework for guiding thought. However, because ethical scenarios are complex and perhaps occasionally emotional some have argued certain other ethical frameworks should be utilized.

### **Utilitarian ethics**

Utilitarian ethics is a model based on consequence and that whether or not an action was good relates only as to whether or not the consequence is good or bad. In medicine basically this boils down to whether or not the treatment was successful or not. Unfortunately in medicine often the utilitarian model does not account for the reality and practicality of modern medicine. Often recognition that there is at least a reasonable likelihood of failure is innate to almost every medical treatment and procedure. If we simply allowed for a consequence based view then when a procedure

has a complication or a treatment fails then it was immoral or unjust to provide that specific treatment. A statement which again we know to be false is medicine.

Occasionally even very safe procedures have complications and treatments have only modest success rates. Yet, we continue to offer the patient the procedure that has a 75% success rate and a 2% complication rate because using the principles of beneficence and non-maleficence allow us to take the risk of failure and the risk of complication in mind that even if those consequences occur it was still 'correct' to proceed. However, from a public health perspective often a utilitarian model is utilized because success is seen as a positive consequential outcome. Often, even if a public health initiative has a solid ethical framework, if it fails, the project is considered a failure under a utilitarian ethics framework.

### **Deontological Ethics**

In the exact opposition of Utilitarian Ethics, deontologic ethics dictates a reasoned based approach, which perhaps more mirrors what we use in modern medicine. Immanuel Kant's *Groundwork for the Metaphysics of Morals*, 1785 laid the groundwork for medical deontological ethics. It focuses on the reasoning and thought process and ignores the consequence. It perhaps is the reason why some physicians walk away from a code feeling good even when the patient dies because at least the code was run well, we did everything we possibly could in line with the patient's wishes. Of course deontologic ethics falls short we recognize the importance of the public health perspective, the importance of the consequence. We can't aim to just do good, at

some point we must actually do good. This phrase is perhaps most exemplified in modern medicine by the shift away from expert opinion and on to evidence-based medicine. For years we used expert reason to dictate clinical ethics and sort of ignored the clinical outcomes. However, in the modern era of evidence based medicine, there has been a shift towards using researched evidence versus well thought out reason in order to dictate clinical care, again because outcomes are important. On a singular level, for that one patient, a reasoned based approach using evidence based medicine can make sense because failure is inevitable, but from a societal perspective a consequence based approach is absolutely necessary.

### **Virtue Ethics**

Virtue ethics approaches ethics from a different perspective, putting the individual decision maker at the center. Virtue ethics emphasizes the individual's ability to determine what is right or wrong without emphasizing either the consequence, as in utilitarian ethics, or the decision itself, as in deontological ethics. Virtue ethics refers to the fact that we as humans within human society learn how to become moral agents through growing up under parental and societal rule, having relationships with others, having primal emotions when witnessing other's actions. Basically, virtue ethics refers to the fact that the individual actor's moral character dictates what is right and what is wrong and not the outcome or decision itself.

### **Humian ethics**

In direct opposition with Deontological Ethics, Hume's main three principles are: (1) Reason alone cannot be a determinant (2) Morality is not derived from reason not reason (3) Moral distinctions are derived from the moral sentiments of spectators and whether they approve or disapprove on an action. Hume seems to allude to the fact that morality is not a rational construct, but an emotional one. We are not driven by reason, but by emotion, we derive our morality from our emotions and we test our morality versus others by seeing how others view our actions. Hume stands out because of the seeming lack of emotional sentiment in modern bioethics and especially in utilitarian and deontological ethics. To Hume it is not a rational step-by-step process to determine what is the right or the wrong. To Hume it is the gut, the raw emotion that determines morality, that determines how we know what is right and wrong. By and large we tend to dismiss Humian ethics in modern bioethics because we tend to view cases from a clinical perspective. We tend to believe that we catalog the clinical facts and keep the clinically irrelevant emotional content aside.

### **Which ethical theory is best**

Many different theories have been proposed as to how an ethics committee should or ought to analyze a given case. There may be a discussion of the type of ethical reasoning which applies (i.e. utilitarian, deontological, virtues, etc). However, there is often a strong emotional response from the committee members to these emotion laden narratives. The general model of ethical decision making tends to put aside such emotional responses as potentially distorting and prejudicial. Theoretically, decisions

should be based on the social and medical facts of the case and the relevant biomedical ethical principles involved. Some suggest that emotional response should not be part of the moral calculus at all, which should be based on sound rational principles and reasoning. However, if we were to include others, such as Hume, he would feel that moral evaluations are made from the “passions” and reason has little to do with our moral evaluations, and are more like rationalizations after the fact. If the latter is true, it is certainly possible that emotional content of narratives and personal emotional responses to the agents involved independently plays a significant role in ethical decision making. These personal and emotional responses might then affect which biomedical principles will be used to justify ethical decisions. And perhaps even more importantly, if we are able to affect one's emotional response with irrelevant facts, then are we also able to affect the previously thought rationalized step-by-step response.

### **Priming Effect**

It has been well known since the seminal experiments by Meyer and Schvaneveldt(1) in the early 1970s that exposure to one stimulus influences the person's response to a following stimulus. In the original experiments Meyer and Schvaneveldt were able to demonstrate that respondents more quickly recognize that a string of letters was a word when they were primed appropriately. For example participants more quickly recognized NURSE when it was preceded by DOCTOR than if it was preceded by BREAD.

In the field of positive psychology the effect of Kindness priming since the seminal experiments by Teasdale and Fogarty in 1979 where participants were induced into

either a happy or depressed mood state, given a happy or sad emotional stimulus, and then asked to recall items. The study demonstrated that in the happy state participants were more likely to recall happy stimuli and that in a depressed state participants were more likely to recall depressed stimuli.

However, these priming experiments were in a tightly controlled experimental setting, so in 1988 Neuberg(3) decided to see whether he could impact behavior during the prisoner's dilemma game by, what he describes, as "information presented out of conscious awareness." In his study he primed participants with either competitive or neutral words before the supposed game had started in a way to prime them without awareness and then had subjects play the Prisoner's Dilemma Game. In short, the game poses a situation where two players, or prisoners, have to make a decision whose outcome is entirely dependent on the simultaneous choice of the other, e.g. deciding whether to confess to a crime. The model of cooperation and conflict was originally framed by Merrill Flood and Melvin Dresher and in 1950, formalized by Albert W. Tucker and given the name "Prisoner's dilemma." Neuberg's addition was that he was able to significantly influence the competitive nature of the participants using subliminal primes. Competitive subjects played more competitively when exposed to competitive primes.

Now in all of these structured priming experiments single word subliminal primes were used in order to alter the subjects response and it is not totally clear how that sort of micro, subliminal priming compares to the obvious priming that may have influenced

participants in this study. However, it is worth considering whether the priming effects here are more subliminal than one may realize due to our belief that ethical decision making is a rigorous step-by-step process. If ethics committee members believe that they are resistant to non-relevant emotionally charged information, it is possible that while the variable agents beliefs and actions are read and understand that the conscious discounts them, but the subconscious allows it to affect our decision making in much of the same way that the subliminal priming was done in Neuberg's Prisoner's Dilemma.

However, if this priming effect is real and ethics committee members, including staff from many roles within the hospital from attending physician to students, then it must be considered not only relevant to research, but also to clinical ethics. In an era, where survey methodology is commonplace, it does bring into question unintentional priming by the author as affecting the survey results. While we intentionally affected the emotional state of our participants, we must be cautious when using emotional content within cases when asking for responses, as it seems possible that small changes from the authors can significantly impact study results.

Additionally, in the clinical word, this priming effect may be all the more relevant. Over the last decades as we've shifted form a paternalistic clinical model to a more patient centered autonomy one, we tend to more and more present information to a patient and then ask them to make a decision. We attempt to present the data in a unbiased way and give the pros and cons of each choice, but if priming can affect ethics

committees members in our controlled experimental setting it does make one wonder whether or not priming plays a significant role in clinical practice.

It is well known that how providers communicate with their patients can influence the patient's decision making, patients were much more likely to enroll in a clinical trial when patient's felt a sense of alliance and were provided support for managing adverse affects, but it seems that we allude to something a little different, and much more subtle. It seems that not only can we affect how patients respond to clinical scenarios, but how providers respond, even in tightly controlled setting where one imagines the laws of ethics are governing.

### **Statement of Purpose:**

The main objective of this study is to investigate:

1. How ethics committee members, and other members of the medical community think about their medical ethics decision making process, and what that involves.
2. To what extent, if any, the emotional response independent of the objective facts of the medical narrative affect the decision making process.
3. How emotional response affects the choice of rationalization using biomedical principles

Hypothesis:

1. Ethics committees members decisions will not be affected by clinically non-relevant ethically charged content

### **Methods:**

#### **Case Creation**

The three cases included here are de novo and written by the authors. They are meant to represent challenging ethical scenarios that health care employees may face in the course of daily normal work within the hospital. Each case was additionally meant to have a variable agent in which that character's emotional response to the situation would be changed between the two various cases, which will be called positive(+) and negative(-) case versions. A great deal of effort went into ensuring that the actual ethically challenging clinical scenario did not vary between the positive and negative cases, while still allowing the variable agent to significantly change his emotional behavior. To allow for case diversity the decision was made to have a different variable agent in each case e.g. it would not be the physician each time that acted in a variable way, but in case 2 the variable agent is a hospital administrator and in case 3 a family member.

### **Variable Agent**

In order to ensure that the variable agent did not change the contents of the case only the emotional response each case was written in the same structured format. There was an opening paragraph which started the clinically relevant information to the case and provided enough information to the reader to allow their own clinical judgment. Then there was a closing paragraph where the variable agent behaved in either a positive or negative manner. In each case the variable agent makes the same decision i.e. to not pursue surgery; however, the proposed reasoning and feelings around the decision are vastly different between the positive and negative cases. For example, in case one the

surgeon recommends not to intervene because of a 25% chance surgical mortality and is concerned that it may not be in the child's best interest to survive; however, in the negative case he backs up his reasoning by stating that he does not to be blamed for the death of have the death negatively impact the image of the cardiac surgical service instead of focusing on patient centered factors such as do-no-harm.

### **Participant Selection**

Participants were asked to be part of the study via a formal email sent to the Ethics Committee chairs at four large institutions: Yale New Haven Hospital, Hopkins, Hopkins Bayview, and Columbia. The Ethics Committee chairs were asked to distribute an introductory email asking for confidential and voluntary participation to their ethics committees. A total of 164 ethics committees members were selected by this process.

### **Survey Creation**

Each case provided basically the same four questions to the participant after the case text. Questions one, two, and four were likert 1-7 scaled questions. Whereas, three was a categorical yes or no. Question one asked the respondent "On a scale of 1 to 7, what would you recommend?" 1- strongly not in favor of the procedure; 4 - neutral, no feelings either way; 7 - strongly in favor of the procedure. Question two asked the respondent to comment on the bioethical principle at play here. The authors chose which bioethical principle to inquire about and the respondents were asked "On a scale of 1 to 7, how much did the bioethical principle of autonomy (case one - autonomy, case two - justice, case three - beneficence) play in your decision" (1 - not at all, 4 - neutral, 7

- very important). The third question asked if the reader believed in the sincerity or justification of the variable agent (yes or no). The fourth question asked the respondent about his or her feelings toward the variable agent again on a likert scale 1 - dislike the most, 4 - neutral, 7- like the most.

### **Demographics**

In addition to the survey, a brief demographic questionnaire was added on to the end of the survey. In addition to gender, participants were asked to categorically state their age by decade; whether they had "no formal training," "some formal training," or "a graduate degree in ethics;" and what his or her role was within the healthcare system, several roles were provided for selection including nurse, attending, resident, fellow, mid level provider, social work clergy, legal, child life/psych, student, community member, with an additional other box that allowed for a free text response.

### **Survey Distribution**

Qualtrics was the platform used to create and distribute the survey. The survey was distributed in a confidential matter and allowed participants to answer as many or as few of the questions. Two parallel qualtrics surveys were used one with the positive agent cases and one with the negative agent cases. Half of the list was randomized to receive the positive version of the case and half of the list was randomized to receive the negative version. This was blinded both to the authors as well as the participants as it was not in the introductory email that were two different versions of each case being circulated. After the initial participant list was assembled. The survey was initially sent

out to the entire group with an introductory letter explaining voluntary and confidential participation and explaining the survey: starting it was brief 10-15 minutes and included three short clinical scenarios involving ethical decision making. After two weeks a reminder was sent out and after another week a final reminder was sent out to encourage voluntary participation.

### **Statistical Analysis**

Frequencies and percentages were used to describe the demographic information of the responders. We plotted the data using box plots (likert scale: questions 1, 2, and 4) or bar graphs (dichotomous outcome: question 3). Since the scenarios were varied, each were analyzed separately. A linear model was used for questions 1, 2 and 4, while logistic regression was used for question 3. We looked at whether there was a significant difference between those receiving the positive versus negative surveys. In order to correct for multiple testing, we set the overall type I error rate for each of the 4 questions at 0.05, and used the Bonferroni correction across the 3 scenarios. Therefore, we tested each question at a type I error rate of 0.0167. No information, besides institution, was available to compare respondents to non-respondents.

However, a secondary analysis was also used by collapsing the parallel questions. Meaning that question number one for case one, two, and three was analyzed as a group; the same was done for the second third and fourth question. One student, two-sided T-TEST were used to determine the statistical significance of the mean variance between the positive and negative cases. Analyzing the cases in this parallel fashion allows to see if there is any question specific interaction without respect to the case.

## Results:

### Participant Completion

One hundred and sixty four survey were sent to ethics committee members at the four institutions: Yale n=66, Hopkins n=20, Hopkins Bayview n=33, and Columbia n=66.

Approximately half of the respondents received the positive survey (n=83) and half received the negative survey (n=81). Seventy individuals partially completed or completed the survey, which was a response rate of 42.7%, of which 51.4% (n=36) returned the negative survey and 48.6% (n=34) returned the positive survey. Although the response rate was higher at Columbia, there was no significant difference in the response rate between the four institutions ( $p=.0927$ ).

### Demographics

There was no significant gender differences in the positive and negative survey 59% female in positive, 60% female in negative. Both the positive and negative surveys had a varied age distribution <30 to 60+ with no significant differences in the age distribution between the two parallel surveys. The level of ethics training between the two surveys had a similar distribution with 34% and 29% no formal training; 59% and 65% some formal training; and 6% and 6% graduate degree in ethics in the positive and negative surveys, respectively. As far as role within the healthcare system, there was some non-statistically significant variability, 6% and 15% nursing, 34% and 44% attending, 16% and 3% resident, 13% and 3% mid level provider, 13% and 3% social worker, 3% and 3%

community member in the positive and negative to give a few exemplars. There were no clergy or legal participants included in the study.

### **Case by Case Analysis**

#### **Case Number One - Variable Agent Surgeon**

We found significant differences on questions 1 ( $p=0.0011$ ), 2 ( $p=0.0101$ ) and 4 ( $p=0.0004$ ) of scenario 1. Question 3 ( $p=0.0230$ ) did not reach significance at the Bonferonni corrected value of 0.0167.

#### **Case Number Two - Variable Agent Hospital Administrator**

There were no significant differences between the positive and negative survey for this case in any of the questions (all  $p$ -values  $>.15$ ).

#### **Case Number Three - Variable Agent Patient Family Member**

There was a significant differences on question 3 ( $p=0.0100$ ) and question 4 ( $p<0.0001$ ). However, there was no significant differences for either question one or two in this case.

### **Parallel Question Analysis**

#### **Question Number One - Support Intervention**

Likert mean for the question one in the positive and negative was 3.82 and 4.66, respectively with a mean difference of .84, this did approach statically significance ( $p<.0167$ )

**Question Number Two - Utilization of bioethical principle**

Likert mean for question two in the positive and negative was 5.17 and 5.59 respectively, which failed to reach statistical significance  $p > .03$ .

**Question Number Three - Justified in actions**

There was no statistically different significance  $p > .03$  between the positive and negative surveys with respect to whether the variable agents was justified.

**Question Number Four - Feelings toward the variable agent**

Likert mean for question four in the positive and negative surveys was 4.66 and 3.75 respectively, which reached statistical significance  $p < .0001$

**Discussion:****Emotionally charged clinical decision making**

When considering the hypothesis of whether or not clinical decision making is able to be affected with clinically non-relevant, but emotionally charged content it seems the answer is yes. While only achieving statistical significance in case one in the by-case analysis, the first question, whether to support the intervention or not, seemed to differ between the positive and negative cases. This is perhaps best seen in the by-question analysis which demonstrates a statistically different effect when you compress of all the cases first questions together. It seemed that ethical clinical decision making could be altered by emotionally charged content.

This, result, in and of itself, is surprising as the ethics committee members respondents seemed to be affected by the emotional content included in the case because many believe that ethics is governed by a set a rules, and not a set of emotions. Many believe that we go through a somewhat rigorous step-by-step thought process to make our ethically challenge decision making. However, this result points in the other direction. If presenting a case in a negative or positive fashion can sway ethics committee members it speaks to perhaps an alternative thought process going on when making ethically challenging decision. Perhaps there is a knee-jerk heuristic response to these scenarios, or more so than we had originally thought. Perhaps providers can be primed by emotion to alter their decisions.

### **Likability**

When delving deeper into considerations of if and how respondents were primed it is important to discuss the Likability question first, because this served as our internal control. It seemed that for both case one and case three the variable agent produced the desired emotional response e.g. positive agent was more likeable, negative agent less. However, for case two there was no difference in the likability of the variable agent in the positive and negative scenario.

Because the likability of the variable agent was unchanged between the positive and negative case, it calls into question whether or not that was the reason that there was no observed statistical significance in any of the questions for case two. If the difference in likability of the variable agent is thought of as differential priming (positive versus

negative) of the participant then it would make sense that there should be no significant difference in any of the questions because the priming was the same, we can consider the positive and negative versions of case two, in actuality the same, perhaps both are negative. We further conjecture whether for case two both versions were in actuality negative versions, because the likability in the positive case two was below or at the average of the likability of the negative versions of both case one and three. However, even in this double negative scenario the trend is that for the positive case, or perhaps here less negative case, that the respondent tended towards agreement with the variable agent.

This difference with case two calls into question, why there was no observed likability difference in the variable agent. There most likely explanation seems to be that the unlikability of a hospital administrator denying care from a young boy was such an overwhelming emotional response that the small changes the positive administrator made when delivering the news were toppled by the situation at hand. However, future studies should consider the difference a person's perceived role within the healthcare system has on communication, delivering news, and ethical decision making. It is possible that the surgeon in case one and the family member in case three are emotionally charged subjects that can sway us more effectively than the hospital administrator.

### **Agreement and Disagreement**

Specifically here in this study all the variable agents were recommending against the intervention, which becomes a key point when we ask how do we determine if we were able to affect clinical decision making with priming. Given that the variable agent already made a decision, what we end up also end up measuring is whether or not the respondents agreed or disagreed more with the positive or negative variable agent in the parallel cases. And while only statistically significant in case one, there is a strong trend that respondents were more likely to recommend against intervention and agree with the variable agent positive cases and more likely to recommend against intervention and disagree with them in the negative cases. It seems that positive priming led to agreement while negative priming led to disagreement between the respondent and variable agent.

### **Justification**

The priming differences are perhaps best seen when examining the justification question. Examining cases one and three we can see that in the positive cases not only did respondents tend to agree more with the variable agent, but that respondents also felt that the variable agent was more justified in his or her decision making process. It is important here to remember that the variable agent's concrete justifications were the same among the positive and negative. Though presented differently the facts were the same e.g. in case one, patient is a trisomy 18 patient with limited life expectancy and surgery has 25% mortality risk. However, when the variable agent was positive, when the respondent was more likely to make a decision in line with the agent, the

respondent also believed that the variable agent was more justified in their actions. It seems that by priming respondents with a positive affect caused them not only to align their clinical decision with the variable agent, but also to believe that the variable agent was more justified in his or her own decision making process.

### **Ethical Principle Utilization**

As expected there was belief that the ethical principle was modestly to very important in nearly all of the cases; however, it is worth noting that the trend was that the bioethical principle was more important when the variable agent behaved in a negative manner. One may explain this difference by when the variable agents behaved in a positive way the respondent was primed to agree thus their explanation was accepted the ethical principle was skipped for a heuristic process; however, when the variable agent was negative, the respondent was primed for disagreement and thus required the respondent to consider why he or she disagreed and thus increased the perceived importance of the bioethical principle at play. It calls into question whether agreeing and disagree are two distinct processes here and that perhaps when in agreement clinicians are more likely to use a knee-jerk response to clinically challenging scenarios and when they are in disagreement more likely to use a rigorous step-by-step analysis.

If there is a difference between agreement and disagreement with the proposed clinical outcome than it calls into question how healthcare providers communicate within the hospital. When a challenging ethical scenario is presented, does it change the respondents thought processes from knee-jerk to step-by-step when the person

presenting the information then gives his or her own feeling's on the subject. Perhaps if we agree, we accept the gestalt, and it is only when we are in disagreement that we go to our ethical principles and logically think about the problem.

### **Is step-by-step versus knee-jerk better?**

If it is truly possible that one can shift a respondent into a knee-jerk vs a step-by-step thought process, it calls into question which sort of thought process is better. Bioethical principles, virtue ethics, and Kant seem to think that a rigorous approach is best. They stem from basic values and use logic to argue what is the correct response. However, Hume, who believes that one's passion should guide morality may agree that a knee-jerk reaction is one's true ethical response. Hume may argue that one's initial emotional response is the most true response and one should allow that to guide morality.

And while it may never been known how we truly derive ethical principles and in what way we use them to solve ethical problems. It may be possible that respondents can be shifted from the step-by-step to the knee-jerk and vice, versa based on priming. This ability to sway respondents to shift from one way of thinking to another again alludes to the importance of how we present challenging ethical scenarios to our other healthcare providers and our patients.

### **Considerations for clinical practice**

As we've shifted away from paternalism on to a patient centered autonomy model we've shifted the burden of choice more and more onto the patient and patient's

family. More and more are clinicians providing the risks and benefits of the various options to patients and then asking them to make a choice. Studies such as this call into question exactly how we present scenarios to patients as it seems that small, what we may consider irrelevant, content conveyed to the patient during these discussions could cause patients to change their thought process or potentially their ultimate choice.

There are plenty of studies looking at patient communication preference (5,6), general barriers to communicate(8), and challenges in specific situations, such as end-of-life decision making (7), but this study seems to examine a different question. But what these data seem to allude to is that it is important to consider not only the flow of information from doctor to patient and vice-versa, but to also consider that while communicating the doctor may be influencing the patient's thought process and the patient's decision.

If we could push patients into a knee-jerk vs a step-by-step thought process then we must be considering everything that we are conveying when discussing a challenging clinical scenario with them, we must consider the actual information we are conveying and how we are conveying it, but also the emotional valence of the information we are conveying as well. Furthermore, if we believe that the goal of clinical communication is to provide the patient or family with the potential options and allowing them an unbiased response then we may want to consider what is the best way to convey information to a patient, highly positive, highly negative, or neutral. While we may never know whether a knee-jerk or step-by-step ethical process is better clinicians still

must be cognizant of ways that they are potentially affecting their patients decision making processes.

## **Limitations and future directions**

### **Surveys only given to half the respondents**

A limitation innate to this sort of methodology is the inability to have a cross-over after the initial survey. Ideally each respondent could be presented with both the positive and negative surveys and then the data could be examined not only in a between respondent manner, as it was done here, but also a within respondent manner.

However, because respondents would be acutely aware of the parallel, but different positive and negative surveys, it was thought that there could be major confounders. If a cross-over was done then each individual respondent would serve as internal control and thus one could more precisely measure the effect of the positive and negative surveys. Because this could not be done only a between respondent analysis is done which conflates the true positive and negative survey differences. However, that is the reason why respondents were randomized to either the positive or negative survey and that statistical post-hoc analysis was done demonstrating the similarities in the groups given the positive and negative surveys.

### **Parallel Surveys**

While the authors went to great lengths in order to ensure that the positive and negative surveys are indeed parallel and equal in regards to the specific clinical criteria it

does remain possible that there is more than simply an emotional difference between the two. The goal was to have the same concrete clinical criteria in both of the negative and positive surveys; however, it is possible that some of the respondents felt that some of the emotional content intended to be non-relevant actually changed how they viewed the clinical scenario and that difference is what swayed the change in clinical decision making and not the difference in the emotional valence of the cases.

### **Low Number of Respondents**

One of the major limitations in the study is the in general low number of respondents. Depending on how the survey is conducted different overall response rates can be expected(11). With the email survey to clinicians methodology used here typical high quality response rates are around 65-75%(9,10). The overall response rate in this study was 42.7%, while not low enough to raise red flags for generalizability, it did decrease the power of the study to the point that statistical significance was only achieved in a few specific areas.

One of the reasons for the low overall n is that ethics committee members were specifically targeted with this survey. Ethics committee members only were selected in the study because, while they may not all have formal training in ethics or bioethical principles, they would at least have some exposure to concrete bioethical principles. However, a recent series of manuscripts published by Marcus, Venkat et. al examined how respondents with and without ethics training and respondents at small community vs large tertiary academic centers responded to challenging clinical ethical scenarios. It

was found that clinicians with and without ethics training and clinicians at small, medium, and large side practices tended toward agreement when presented with challenging clinical ethical scenarios. These papers argued that ethics committee members do not have specialized ethical knowledge not available to all clinicians, but that ethics committee members provide an external prospective and are expert communicators. If we hold these findings to be true, then a follow-up to this study would be to broaden the initially asked respondents from ethics committee members to any and all healthcare practitioners. Increasing the total number of respondents would allow the ability to detect smaller differences in the likert scale.

### **Significant skew on some variables**

This effect is perhaps most easily seen in the bioethical principle utilization question. Nearly all respondents in both the negative and positive surveys viewed the bioethical principle as either neutral to very important with only a few respondents in the negative surveys that considered the bioethical principles to be considered not important. With the data skewed so toward the high end of the likert scale the ability to detect a statistically significant difference between the positive and negative surveys vanishes. In a follow up study one could consider either changing to a 5 point likert scale or even coding them as categorical variables. One would expect that lowering the resolution of the scale would either make the effect size larger, if indeed there was one; otherwise it would wash out the effect if indeed it did not exist.

### **Conclusions**

Given the low degree of statistical significant and somewhat conflicting data, the results seem a little unclear; however, the trends shown here certainly will inform future projects and direct further lines of inquiry as the strong trends seems to demonstrate one thing: It may be possible that emotional content that had been previously seen as inconsequential and not a part of the standard clinical scenario does seem to affect people's clinical decision making. This seemingly simple point forces us to open our minds as to how we present cases to patients, to our students, to our co-workers. Those small emotional points that you choose to include or not include to either humanize the case or to make the case brief and clinical could be affecting the clinical decision. And if indeed the clinical decision can be swayed so easily then again we are reminded of the importance of communication in modern medicine.

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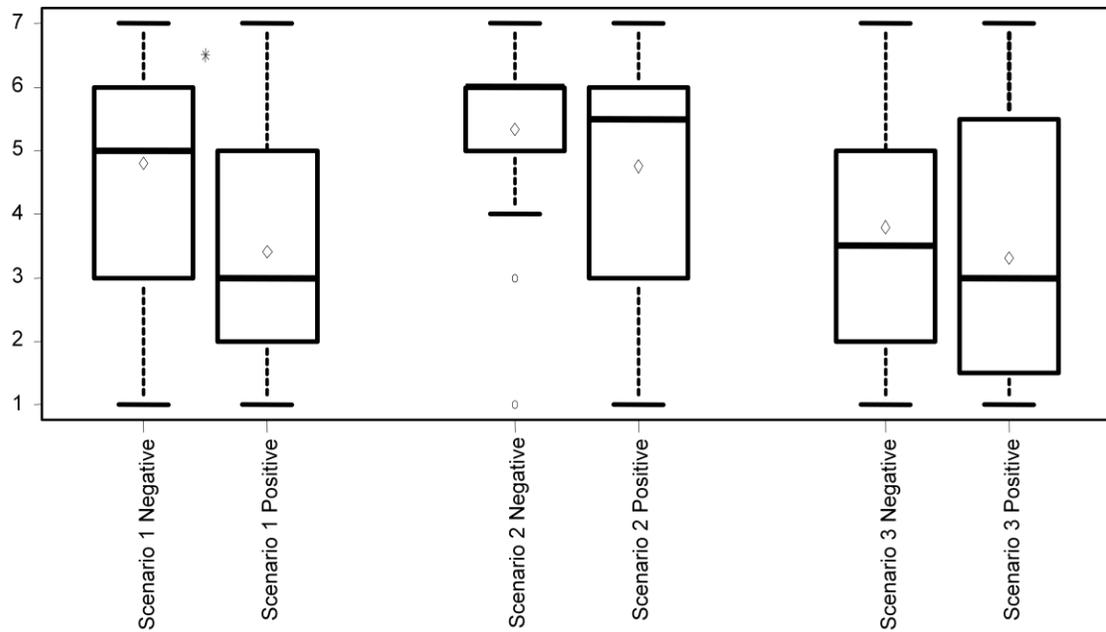
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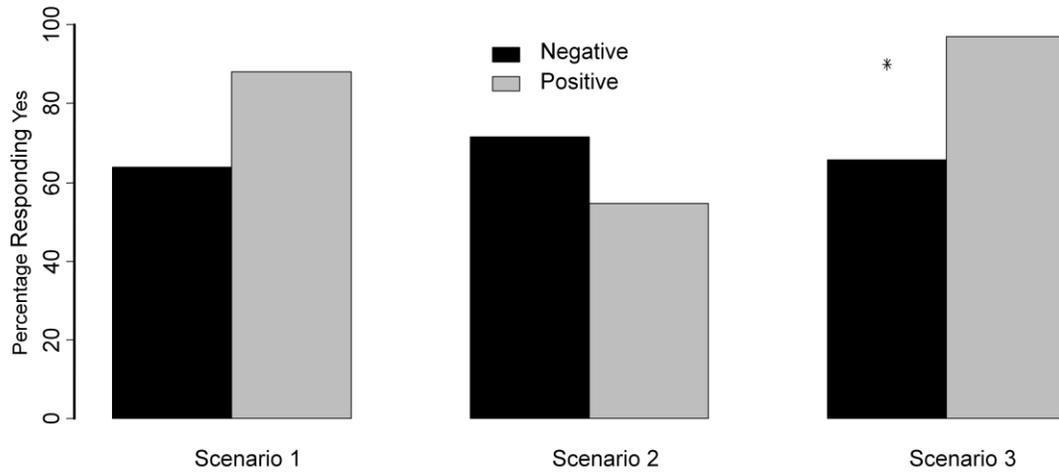
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## Figures

Figure One, Clinical Decision Making

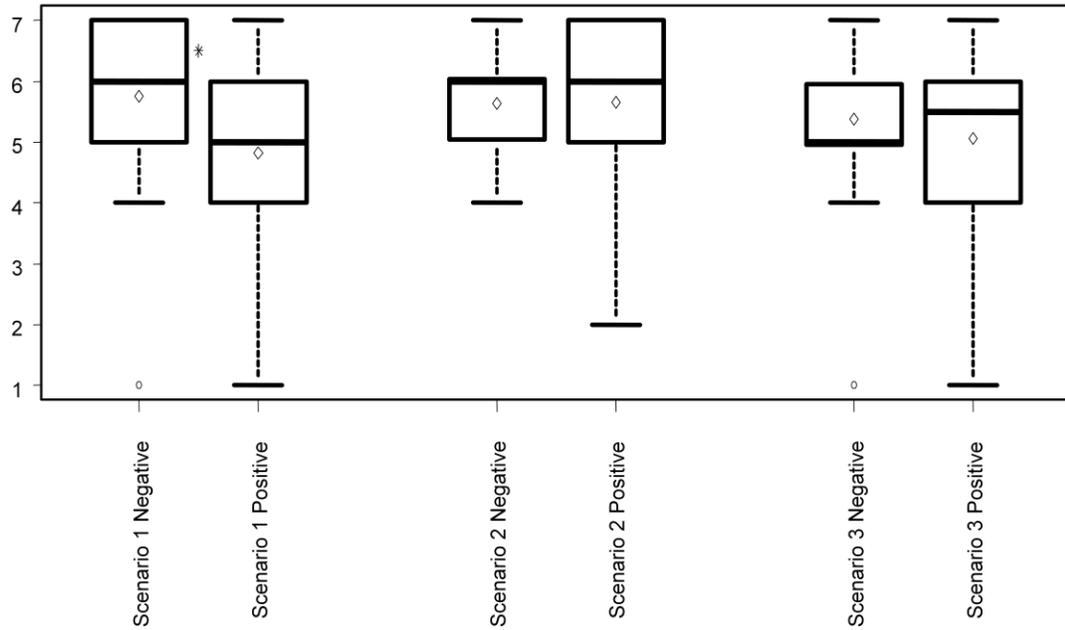


Likert scale 1-strongly not in favor to 7-strongly in favor of the procedure

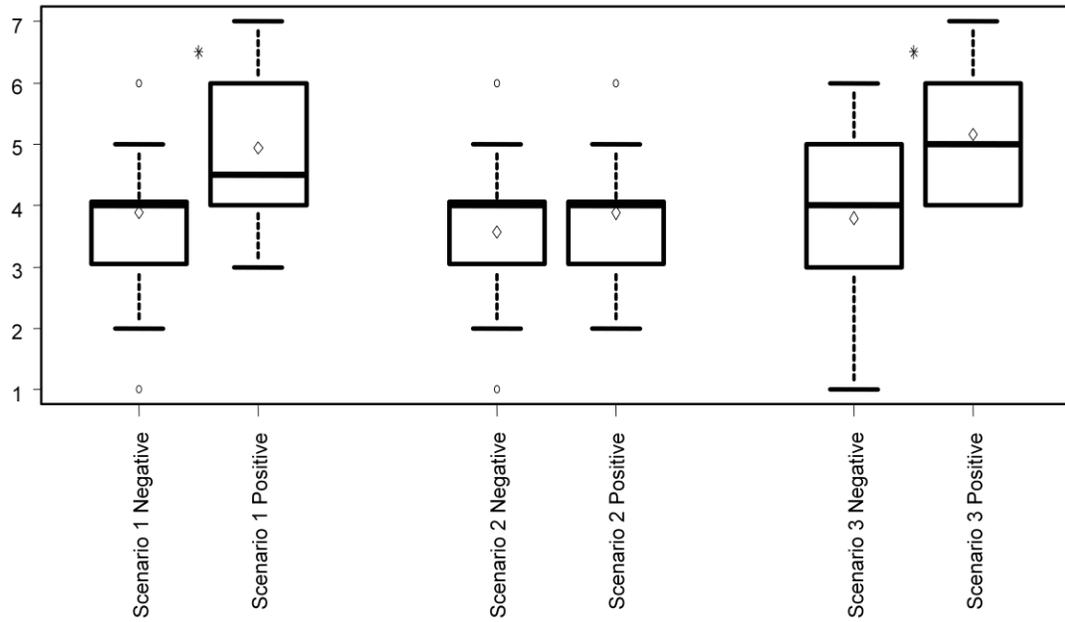
**Figure Two, Justification**

Binary scale yes/no was the agent justified in her actions

**Figure Three, Ethical Principle Utilization**



Likert scale 1-ethical principle not at all to 7-ethical principle very important

**Figure Four, Likability**

Likert scale 1-strongly dislike to 7-strongly like the variable agent

## Figure Five:

### Exemplar Case, Positive and Negative Case One

#### Vignette #1 Variable agent : Surgeon

As a member of the ethics committee you've been asked to consult on a 6 week old infant girl with Trisomy 18 that is suffering from congestive heart failure and would need open heart surgery to correct a congenital heart defect in order to prolong the baby's life. Trisomy 18, the committee is told, has a very poor prognosis in general, with few patients living beyond 1 year of age, and very few living beyond 4-5 years. Infants with Trisomy 18 have severe cognitive and physical handicaps, do not acquire any language ability and need constant care. The parents have three other children. They love this baby very much, have become very attached to the baby in the hospital and have been at the bedside constantly. They want to take the baby home. The parents want to have their baby, regardless of any handicaps the baby might have, as long as possible. A cardiac surgical consult was called.

#### Version 1: Likable surgeon:

The surgeon says he will go along with ethics committee recommendations, but feels that surgery is not warranted due to the poor prognosis, limited quality of life and high risks involved in operating on a infants with Trisomy 18. He is very sympathetic to the parents, and understands their desire to take the baby home, but feels the pain and suffering as a result of the surgery is not worth the benefits, since the prognosis is so poor. He feels it is in the best interests of the child not to be put through this painful operation. He says the surgery carries a 25% risk of mortality and is worried about the infant dying in surgery

#### Version 2: Unlikable surgeon:

The surgeon says he will go along with the ethics committee recommendations, but advises against the surgery. He thinks not only is it risky, but also it is a waste of time and money to operate on a handicapped baby with a poor prognosis when the baby already has limited cognitive function and is unable to lead a productive life. He also says the mortality rate is very high, about 25%, and that he is worried that if the child does not survive he will be blamed for the death, and it would adversely impact the image of the cardiac surgical service.