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Under what conditions is euthanasia acceptable to lay people and health professionals?

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Abstract

Euthanasia is legal only in the Netherlands and Belgium, but it is on occasion performed by physicians elsewhere. We recruited in France two convenience samples of 221 lay people and of 189 professionals (36 physicians, 92 nurses, 48 nurse's aides, and 13 psychologists) and asked them how acceptable it would be for a patient's physician to perform euthanasia in each of 72 scenarios. The scenarios were all combinations of three levels of the patient's life expectancy (3 days, 10 days, or 1 month), four levels of the patient's request for euthanasia (no request, unable to formulate a request because in a coma, some form of request, repeated formal requests), three of the family's attitude (do not uselessly prolong care, no opinion, try to keep the patient alive to the very end), and two of the patient's willingness to undergo organ donation (willing or not willing). We found that most lay people and health care professionals structure the factors in the patient scenarios in the same way: they assign most importance to the extent of requests for euthanasia by the patient and least importance (the lay people) or none (the health professionals) to the patient's willingness to donate organs. They also integrate the information from the different factors in the same way: the factors of patient request, patient life expectancy, and (for the lay people) organ donation are combined additively, and the family's attitude toward prolonging care interacts with patient request (playing a larger role when the patient can make no request). Thus we demonstrate a common cognitive foundation for future discussions, at the levels of both clinical care and public policy, of the conditions under which physician-performed euthanasia might be acceptable.
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Introduction

Euthanasia is the active ending of another person's life to prevent that person's continued suffering or indignity (sometimes called "active euthanasia"). It is against the law everywhere except in the Netherlands and in Belgium, but is in fact performed not uncommonly by physicians (as well as by family members and other care givers) (Emanuel, Daniels, Fairclough, & Clarridge, 1998; Meier et al., 1998; Sprung et al., 2003; van der Maas, Pijnenborg, & van Delden, 1995; van der Heide et al., 2003). It is important, therefore, for policy-makers, counselors of ill patients and their families, physicians and other health care providers, medical ethicists, and even judges to understand under what conditions, if any, euthanasia, particularly euthanasia performed by physicians, would be acceptable to lay people and health professionals.

Surveys of public opinion in the US, Canada, and Australia have found that an increasing proportion of people support painless euthanasia of incurably ill patients if they and their families request it from the doctor (Blendon, Szalay, & Knox, 1992; Caddell &

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Newton, 1995; Genuis, Genuis, & Chang, 1994; Rogers, 1996; Singer, Choudhry, Armstrong, Meslin, & Lowry, 1995; Steinberg, Najman, Cartwright, MacDonald, & Williams, 1997; Suarez-Almazor, Belzille, & Bruera, 1997). In the US, this proportion passed from 34% in 1950 to 53% in 1973 and 63% in 1991 (Blendon et al., 1992).

In contrast, fewer members of the medical professions favor euthanasia (Baum & O'Malley 1990; Cohen, Fihn, Boyko, Jonsen, & Wood, 1994; Dickinson, Lancaster, Clark, Ahmedzai, & Noble, 2002; Dickinson, Lancaster, Sumner, & Cohen, 1998; Emanuel et al., 2000; Kitchener, 1998; Kitchener & Jorm, 1999; Kuhse & Singer, 1988, 1992, 1993; Meier et al., 1998; Nilstun, Melltorp, & Hermerén, 2000; Richardson, 1994; Shuman, Fournet, Zelhart, Roland, & Estes, 1992; Suarez-Almazor et al., 1997; Vincent, 1999; Willems, Daniels, van der Wal, van der Maas, & Emanuel, 2000). For example, a survey in 1996 of physicians throughout the US found that, if it were legal, 36% of respondents would be willing to hasten a patient's death by prescribing medication and 24% would provide a lethal injection (Meier et al., 1998).

Physicians in France have been more reluctant than those in the US to advocate interventions by physicians to end patients' lives (Abriven, Chardot, & Fresco, 2000; Glorion, 1999; Michaud, 1999). Nonetheless, even in France, physicians in intensive care units not only withhold or withdraw life-supporting treatments for patients in hopeless conditions (Devictor & Nguyen, 2001; Ferrand, Robert, Ingrand, & Lemaire, 2001) but also occasionally administer drugs with the aim of ending life (Cuttini et al., 2000).

Little is known about the importance and interaction of the various factors that might influence the acceptability of euthanasia. Frileux, Lelièvre, Muñoz Sastre, Mullet, and Sorum (2003) found that, for a hypothetical patient with a life expectancy of only 1 week to 1 month, the patient's age, the level of curability of the illness, the degree of physical suffering despite pain medication, and the extent to which the patient explicitly requested a life-ending procedure had additive effects on lay people's ratings of the acceptability of euthanasia. The patient's mental capacity had no direct effect, but it interacted with request: in the case of no request, acceptability was slightly higher when the patient was mentally impaired. Older participants placed less importance than younger ones on the number of patient requests.

We performed two studies. The first addressed four limitations in the study by Frileux et al. (2003). First, in the 2003 study, the patient was portrayed as able to formulate a request. Since the extent of requesting was the most important determinant of acceptability, we wanted to know what happens when the patient is no longer able to formulate a request—when, for example, the patient is comatose.

Second, we wanted to assess three variables that were not examined in the 2003 study: the patient's life expectancy, the family's attitude toward ending care, and the patient's opinion about organ donation. It has been suggested, but not demonstrated, that the euthanasia is more acceptable when the patient's life expectancy is short than when it is long (Mishara, 1999). Accordingly, a life expectancy of less than 6 months is specifically required for referrals to palliative care through Hospice in the US and for the legal performance of physician-assisted suicide in Oregon (Haley & Lee, 1998; Sullivan, Hedberg, & Fleming, 2000). The family's attitude would be particularly important when the patient is unable to make a request, even when the family is not legally allowed to substitute for the patient in the decision-making process (Meisel, Snyder, & Quill, 2000). Finally, some patients have worried about being prematurely euthanized if they consent to donate their organs; they are aware that organ transplant is more successful when organs are removed before they suffer damage from the dying process (Teisseyre, N., personal conversations with patients, 2002).

Third, whereas Frileux et al. (2003) performed their analyses at the aggregate level, we looked for clusters of participants with quite different ways of responding to the scenarios. We wondered whether some participants would manifest the extreme attitudes frequently encountered in public discussions of end-of-life issues (Curry, Schwartz, Gruman, & Blank, 2000). To allow us to find sufficient people with such attitudes, we gathered a much larger sample of participants than did Frileux and colleagues.

Fourth, we wanted to see if the people's overall judgments of acceptability as well as their cognitive processes—their relative weightings of the different factors in the scenarios and their ways of integrating them when judging acceptability—would be associated with personal characteristics: their values (Cicirelli, 1997), their locus of control (Cicirelli, McLean, & Cox, 2000), and their attitude toward the current laws that prohibit euthanasia.

The aim of our second study was to examine whether health professionals—physicians, nurses, nurse's aides, and health psychologists—would judge the acceptability of euthanasia in the same way as the lay people in the first study.

Methods

The method was an application of the Functional Theory of Cognition (Anderson, 1981, 1996, 2001). The primary aim of Anderson's methodology is to reveal the cognitive rules used by people to integrate information when they make a judgment or decision. It assumes that

people place subjective values on different pieces of information and that they combine these subjective values by means of a cognitive algebra dominated by addition, multiplication, and averaging. It studies how they do this indirectly and functionally, i.e. it infers from people's judgments of the combined value of two or more stimuli (or pieces of information) the cognitive rules used to arrive at these judgments.

In Anderson's methodology, participants evaluate combinations of factors, rather than single factors. Accordingly, we presented our participants with a series of patient vignettes and thereby were able to simulate the way the issue would appear in real life—in the context of concrete patients with particular characteristics. Anderson's methodology requires, in addition, a complete factorial design, so our set of vignettes consisted of all possible combinations of the within-subjects factors. This design not only facilitates the determination of the impact of each factor on the overall judgments, but is also necessary for the investigation of their interactions and of the cognitive rules participants have used in combining them. Furthermore, Anderson found that the true importance for people of each factor and the cognitive rules they employed were revealed better by stable rather than by momentary judgments of combined values. His methodology also requires, therefore, that participants become familiar with the task and with these combinations of variables in a "familiarization" phase before they are given a final set of judgments.

Participants

The participants were unpaid volunteers recruited and tested by one of the authors (NT). For the first study, she contacted 300 people walking along city sidewalks, explained the study, asked them to participate, and, if they agreed, arranged where and when to administer the instrument. Of these 300, 221 (74%) participated. They came from three cities in southern France (Montpellier, Perpignan, and Narbonne). She enrolled an approximately equal number of participants among four age groups: young adults (18–29 years old), adults (30–44 years old), middle-aged adults (45–59 years old), and older adults (60–79 years old).

For the second study, she contacted 300 health professionals working in the main hospitals of Montpellier, Perpignan, and Narbonne. Of these, 189 (63%) participated (36 physicians, 92 nurses, 48 nurse's aides, and 13 psychologists).

Material

The material for both studies consisted of 72 cards containing a story of a few lines, a question, and a response scale. The stories were composed according to a $3 \times 4 \times 3 \times 2$ within-subject factor design: the patient's life expectancy (3 days, 10 days, or 1 month); the extent of request for euthanasia by the patient (no request, unable to formulate a request because currently in a coma, some form of request, repeated formal requests); the attitude of the family (do not uselessly prolong his suffering, no opinion, try to keep the patient alive to the very end); the patient's willingness to undergo organ donation (willing or not willing to donate an organ). Other information was held constant: all patients were 40 years old and were identified as "Mr."; in addition, each questionnaire read, "He is suffering from a serious illness, totally incurable given the present state of medical knowledge. He suffers atrociously; pain medication cannot truly relieve his suffering. He is currently receiving the best possible treatments."

Under each story were a question and a response scale. The question was, "To what extent do you believe that euthanasia would be an acceptable solution in this case?" Participants responded by slashing a 35-cm line somewhere between the left-hand anchor of "Not at all acceptable" and the right-hand anchor of "completely acceptable." Three examples are given in Appendix A. The cards were arranged by chance and in a different order for each participant.

The lay participants also filled out three questionnaires. In the first, they ranked in order of importance the 18 terminal values of the Rokeach Value Survey (Rokeach, 1973): a comfortable life, an exciting life, a world at peace, equality, freedom, happiness, national security, pleasure, salvation, social recognition, true friendship, wisdom, a world of beauty, family security, mature love, self-respect, a sense of accomplishment, and inner harmony. The second questionnaire was the French adaptation of Levenson's internal powerful others and chance (IPC) scale that measured locus of control on the basis of the participants' extent of agreement with 24 statements about internal and external control over their life (Loas, Dardennes, Dhee-Perot, Leclerc, & Fremaux, 1994). Third, the participants reported their age, gender, educational level, attitude toward political parties, religious belief, religious background, belief in life after death, personal experience with the problem of euthanasia, and (on seven-point scales, with completely disagree and completely agree as the extremes) attitudes toward the decriminalization and legalization of euthanasia.

The health professionals filled out only the third questionnaire about demographics, beliefs, and attitudes.

Procedure

The site was, for the lay people, either a vacant classroom in the local university or the participant's

private home, and for the professionals, it was a vacant room in the hospital. Each person was tested individually. The session had two phases. In the familiarization phase, the researcher explained what was expected and presented each participant with 36 stories taken from the complete set. For each story, the participant read it out loud, was reminded by the researcher of the items of information in the story, and then made an acceptability rating by putting a mark on the response scale. After completing the 36 ratings, the participant was allowed to look back at his or her responses and to compare and change them. In the experimental phase, each participant gave ratings for the whole set of 72 stories, working at his or her own pace, but was no longer allowed to look back at and change previous responses. In both phases, the researcher made certain that each subject, regardless of age or educational level, was able to grasp all the necessary information before making a rating.

The participants took 30–60 min to complete both phases. None of either the lay people or the professionals complained about the number of vignettes they were required to evaluate nor about the credibility of the proposed situations. They then completed the questionnaires.

Data analysis

The data were analyzed at the group level by performing analyses of variance (ANOVAs) and by constructing graphs (using Statistica 5.0).

In the first study, the $4 \times 2 \times 3 \times 4 \times 3 \times 2$ design of the ANOVA included participant's age $\times$ gender $\times$ life expectancy $\times$ extent of request $\times$ family's attitude $\times$ organ donation. Educational level was excluded because preliminary analyses showed that it had no significant main effect or interaction. In light of the many comparisons, the level of significance was set at 0.005.

A complementary analysis of covariance (ANCOVA) was also conducted with the participant's attitude toward the liberalization of euthanasia as the between-subjects factor; life expectancy, extent of request, family's attitude, and organ donation as the within-subject factors; and age as the covariate. The attitude toward liberalization was calculated by summing the highly correlated responses to the questions about decriminalization and legalization of euthanasia. Complementary ANOVAs were also performed for each of the Rokeach values with the locus of control (internality/externality) score as the between-subjects factor and life expectancy, extent of request, family's attitude, and organ donation as the within-subject factors. Finally, a cluster analysis was conducted on the raw data.

In the second study, the $4 \times 3 \times 4 \times 3 \times 2$ design of the ANOVA included participant's professional group $\times$ life expectancy $\times$ extent of request $\times$ family's attitude $\times$ organ donation. A complementary $2 \times 3 \times 4 \times 3 \times 2$ ANOVA included the variables lay people vs. health professional $\times$ life expectancy $\times$ extent of request $\times$ family's attitude $\times$ organ donation. The level of significance was set again at 0.005. Finally, a cluster analysis was conducted.

Results

For each of the 72 scenarios, the distance was measured between the left anchor and each slash mark made by the participant on the response scale. All subsequent analyses were based on these measures of distance.

First study

The overall mean value of all the ratings was 22.37 cm. The highest mean response, 30.92 cm, was still very distant from the possible maximal answer, 35 cm. There was thus no ceiling effect to complicate the interpretation of results.

Characteristics of participants

There were 53 young adults between 18 and 29 (22 women and 31 men) with a mean age of 22.5 years; 58 adults between 30 and 44 (41women and 17 men) aged 37.6 years; 60 middle-aged adults between 45 and 59 (40 women and 20 men) aged 53.3 years; and 50 older adults between 60 and 79 (28 women and 22 men) aged 65.9 years.

Fifty-nine percent of the participants were women, 54% had completed secondary education, and 49% lived in a rural setting and 51% in cities. All reported that they were in good health. Twenty-five percent were politically leftists, 52% centrists, and 23% rightists. Sixty-six percent were religious believers and 34% non-believers, although only 10% were churchgoers. Sixty-three percent grew up in the Catholic tradition, 13% in the Protestant tradition, 3% Islamic, 1% Jewish, and 20% did not report growing up in a religious tradition. Thirty-five percent believed in life after death, 26% in no life after death, and 38% did not know. Thirty-eight percent knew someone who had been confronted with the problem of euthanasia, and 6% had personally confronted it in connection with someone close to them. Sixty-one percent favored the legalization of euthanasia, 7% did not, and 32% were undecided. Fifty-nine percent favored the decriminalization of euthanasia, 8% did not, and 33% were undecided.

Main effects

Each of the four within-subject factors had a significant effect. The lower the patient's life expectancy (22.39–21.39 = 1.00 cm between 3 days and 1 month, $F(2,422) = 18.88$, $p < 0.0001$), the more repetitive the patient's request for euthanasia (29.23–15.24 = 13.99 for repeated requests vs. none, $F(3,633) = 331.09$, $p < 0.0001$), the more favorable the family's attitude toward not prolonging useless care (24.45–19.67 = 4.78, $F(2,422) = 186.86$, $p < 0.0001$), and the greater the patient's willingness to donate his or her organs (22.64–21.11 = 1.53, $F(1,211) = 60.06$, $p < 0.0001$), the more acceptable did the participants find euthanasia. Patient request clearly had more impact than the other factors. The family's attitude had some effect and the other two variables only a little.

Post hoc analyses using the Sheffe tests of the difference between each pair of variable levels showed that, for the life expectancy variable, only the difference between 3 and 10 days was significant ($p < 0.005$) while for the request and family's attitude variables, the differences between each pair were significant (p's < 0.001).

None of the two between-subjects factors (age and gender) had a significant effect.

Interactions

Several significant interactions were observed. Two of them involved the participant's gender and the participant's age and are shown in Fig. 1. In the top panel the four patient's request levels are on the horizontal axis, the mean judgments of acceptability are on the vertical axis, and the curves correspond to the two genders. The curve for males is steeper than the curve for females, $F(3633) = 10.99$, $p < 0.001$. Thus the extent of the patient's request had a greater impact on men's ratings than on women's. Post hoc analyses conducted at each level of the request factor showed that gender difference was significant at the levels of no request ($p < 0.001$) and coma ($p < 0.005$).

The center panel is constructed in the same way as the top panel except that each curve corresponds to one of the age groups of participants. The four curves are ascending: the more insistent the request, the more acceptable the act of euthanasia. The curves corresponding to the two youngest groups are steeper than the curves corresponding to the oldest participant groups, $F(9,633) = 5.25$, $p < 0.001$. Thus the extent of the patient's request had a greater impact on the judgments of younger participants than on those of older ones. Post hoc analyses conducted at each level of the request factor showed a significant age difference only at the no request level ($p < 0.005$).

Another interaction involved two within-subject variables, request and family's attitude, and is shown in bottom panel of Fig. 1. The three levels of the family's attitude toward providing care are on the horizontal axis, and each curve corresponds to one level of the request variable. The three full curves represent situations in which the patient is conscious. They form a fan-shaped graph slightly open to the left, showing that the effect of the family's attitude was stronger in the case of no patient request than in the case of repetitive requests. The dotted curve represents the situation in which the

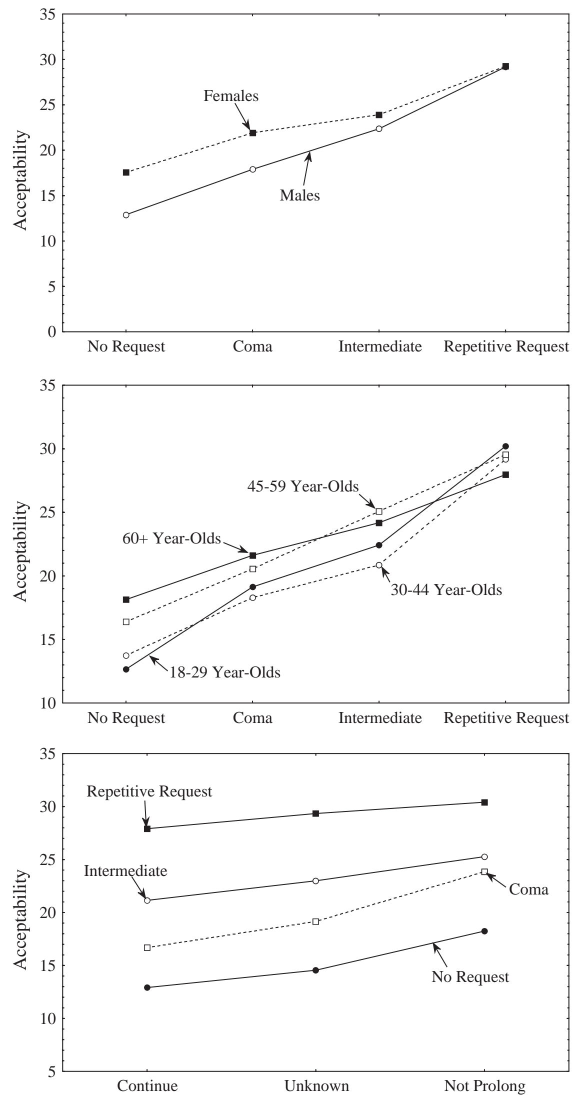

Fig. 1. Effect on lay participants' judgments of the acceptability of euthanasia of participant and family factors and the patient's request for euthanasia. The mean judgments (in centimeters along the 35-cm response scale) of the acceptability of euthanasia in relation to the extent of the patient's request for euthanasia and to the participant's gender (top panel), the participant's age (middle panel), and the attitude of the patient's family (bottom panel).

patient is in coma. As shown by the steepness of the curve, the effect of the family's attitude was strongest in this case, $F(6, 1266) = 32.22$, $p < 0.001$. Post hoc analyses showed that the slope of the coma curve was significantly different from the slopes of the three other curves ($p < 0.001$) and that the slopes of the other curves were not significantly different from each other.

Complementary ANCOVAs and ANOVAs

The complementary ANCOVA showed one significant main effect. Among participants more favorable to liberalization (i.e., to the legalization and decriminalization of euthanasia), the overall mean acceptability score was higher ($M = 24.75$) than among participants less favorable to it ($M = 19.50$), $F(1,211) = 26.66$, $p < 0.001$. There was, however, no interaction involving liberalization and any of the four within-subjects variables. As shown in Fig. 2, the effect of the request variable was the same for both those who supported and those who opposed legalization and decriminalization; the only difference was the position of the curves in relation to the vertical axis.

The complementary ANOVAs showed three significant interactions. Two of them involved values from the Rokeach questionnaire. One is shown in Fig. 2; the other has exactly the same form. The more the participant valued an exciting life or pleasure, the weaker was the effect of the request variable, $F(3,651) = 8.23$ and 12.50, respectively, $p < 0.001$. Post hoc analyses conducted at each level of the request variable showed that the only significant differences were at the no request level ($p < 0.001$). The third interaction involved the Belief in god variable. As also shown in Fig. 2, among believers, the effect of the request variable was weaker than among non-believers, $F(3,633) = 4.38$, $p < 0.005$. Post hoc analyses conducted at each level of the request factor did not, however, show significant differences.

Cluster analysis

The cluster analysis identified a three-cluster solution, as shown in Fig. 3. The first cluster ($N = 40$) was called *always acceptable*, the second ($N = 16$) *never acceptable*, and the third ($N = 165$) *depending on circumstances*. The mean acceptability ratings were 33.44, 4.93, and 21.65, respectively, $F(2,216) = 205.60$, $p < 0.001$. The other significant differences between these clusters were the mean age of the participants (51, 50, and 42 years, respectively), $F(2,218) = 5.94$, $p < 0.005$, and their attitudes toward legalization and decriminalization (70%, 6%, and 55% favorable, respectively), $F(2,218) = 10.14$, $p < 0.001$. The analyses reported above were repeated using as subjects only the majority cluster; the same effects and interactions were significant.

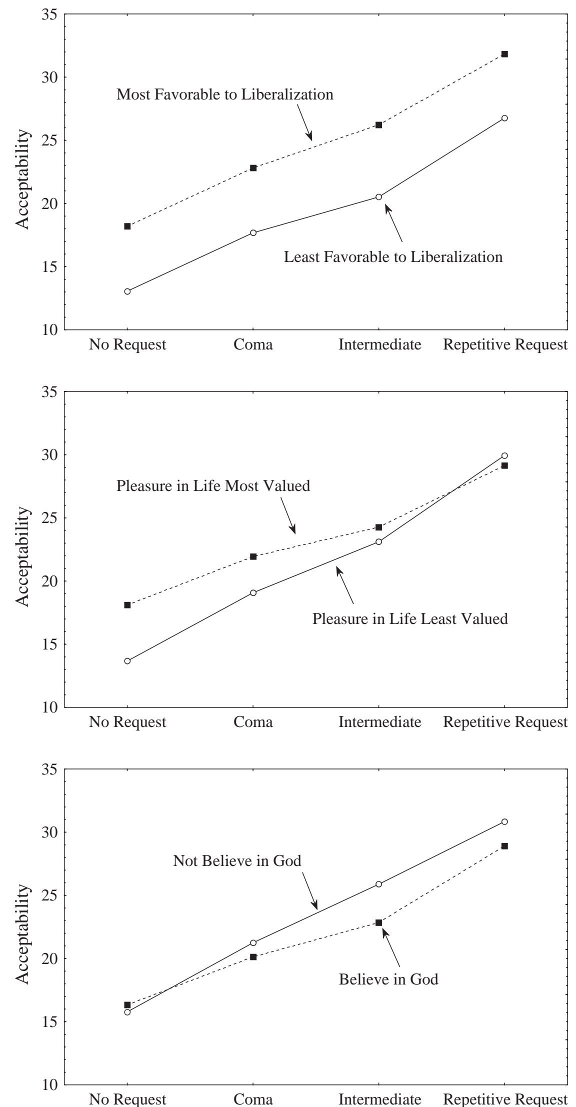

Fig. 2. Effect on lay participants' judgments of the acceptability of euthanasia of the participant's ideas and the patient's request for euthanasia. The mean judgments (in centimeters along the 35-cm response scale) of the acceptability of euthanasia in relation to the extent of the patient's request for euthanasia and to the participant's attitude toward liberalizing the laws about euthanasia (top panel), the participant's valuation of pleasure in life (middle panel), and the participant's belief in god (bottom panel).

Second study

Characteristics of participants

Age ranged from 19 to 60 years ($M = 37.60$). Seventy-five percent of the participants were women, and none were currently in bad health. Thirty-three percent were

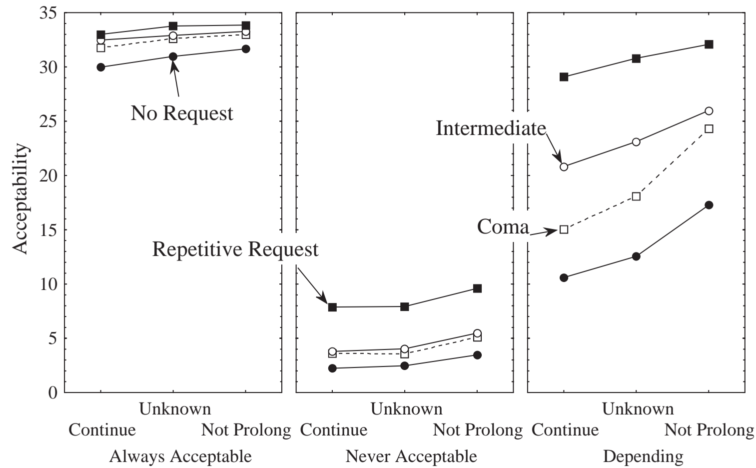

Fig. 3. Results of the cluster analysis conducted on the lay people's judgments. The mean judgments (in centimeters along the 35-cm response scale) of the acceptability of euthanasia in relation to the extent of the patient's request for euthanasia (the four curves, from no request to repetitive request), the family's attitude (on the x-axis, continue, unknown, and not prolong), and the cluster of lay participants (the three panels).

politically leftists, 16% rightists, and 51% centrists. Fifty-eight percent were religious believers and 42% non-believers, although only 6% were churchgoers. Sixty-nine percent had grown up in the Catholic tradition, 1% in the Protestant, 2% in the Islamic, and 1% in the Jewish tradition; and 27% gave no response. Twenty-nine percent believed in life after death, 29% in no life after death, and 42% did not know. Sixty-six percent knew someone who had confronted the problem of euthanasia, and 28% had personally performed euthanasia (38% of the physicians and 38% of the nurses). Fifty percent favored the legalization of euthanasia (26% of the physicians, 42% of the psychologists, 53% of the nurses, and 60% of the nurse's aides), 11% opposed it (43% of the physicians, 17% of the psychologists, 10% of the nurses, and 6% of the nurse's aides), and 35% were undecided. Fifty percent favored the decriminalization of euthanasia, 8% opposed it, and 42% were undecided.

Main effects and interactions

The ANOVA conducted on the raw data showed that three of the four within-subject factors had a significant effect: life expectancy, $F(2,370) = 7.44$, $p < 0.001$; request, $F(3,555) = 154.86$, $p < 0.001$; and family's attitude, $F(2,370) = 74.00$, $p < 0.001$. The effect of organ donation was not significant. Post hoc analyses using the Sheffe tests showed that the differences between each pair of levels of both the request and the family's attitude variables were significant ($p < 0.001$); no differences between pairs of levels were significant for the life expectancy variable.

The request × family interaction was significant, $F(6,110) = 18.60$, $p < 0.001$. It is shown in Fig. 4, for each group of participants. Post hoc analysis showed that the slope of the coma curve was significantly different from the slopes of the three other curves ($p < 0.001$) and that the slopes of the other curves were not significantly different from each other.

No other interaction was significant. The non-significance of the remaining interactions involving two or more within-subject variables means that the health professionals, like the lay people, combined these variables in an additive fashion. The non-significance of the interactions involving the variable of professional group means that the effects of the four within-subject variables were the same among the four groups of professionals.

Fig. 4 shows that the sets of curves for the four professional groups were at different positions in relation to the vertical axis. The overall acceptability ratings were, starting with the highest group, nurse's aides 22.51, nurses 18.52, psychologists 15.63, and physicians 15.33, $F(3,185) = 15.98$, $p < 0.001$. Post hoc analyses with the Sheffe tests showed that the differences between the nurses' aides and both the physicians and the psychologists were significant ($p < 0.002$ for each).

The complementary ANOVA conducted on the two samples of health professionals and lay people (from Study 1) showed that, apart from the main effect of the group factor ($22.37–18.73 = 3.64$, $F(1,405) = 19.70$, $p < 0.001$), the only significant effect was the group × organ donation interaction, $F(1,405) = 16.06$, $p < 0.001$. Organ donation has an impact, even if minimal, on lay people (study 1), but not on health professionals (study 2).

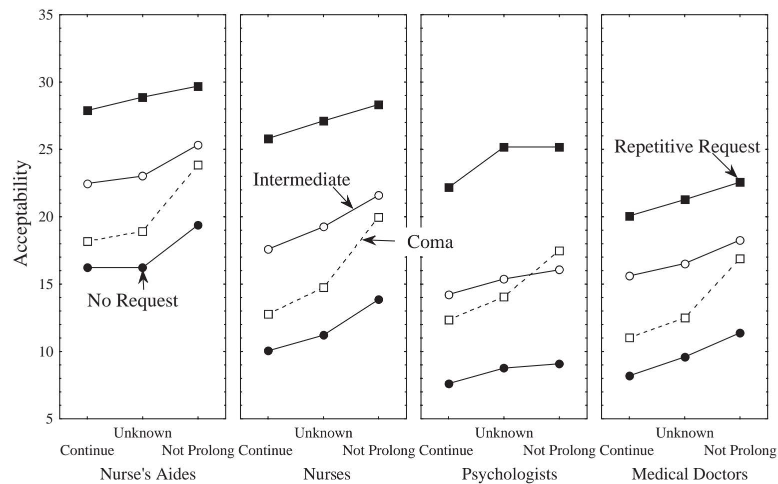

Fig. 4. Effect on health professionals' judgments of the acceptability of euthanasia of the family's attitude and the patient's request for euthanasia. The health professionals' mean judgments (in centimeters along the 35-cm response scale) of the acceptability of euthanasia in relation to the extent of the patient's request for euthanasia (the four curves, from no request to repetitive request), the family attitude (on the x-axis, continue, unknown, and not prolong), and professional status (the four panels).

Finally, the cluster analysis revealed three different groups of participants, just like those found in Study 1. For 26 participants—12 physicians (33% of the physicians), nine nurses (10%), three nurse's aides (6%), and two psychologists (16%)—recourse to euthanasia was always acceptable for the hypothetical patients (mean rating 32.43). For 18 participants—two physicians (6%), five nurses (5%), and 11 nurse's aides (23%)—it was never acceptable (mean rating 3.42). For the remaining 145 participants—22 physicians (61%), 78 nurses (85%), 34 nurse's aides (71%), and 11 psychologists (85%)—the acceptability of euthanasia was a function of the circumstances, i.e., of the particular combination of within-subject variables ($M = 19.77$).

Discussion

Acceptability for lay people

In the first study, we found, as expected, that all the information studied—the patient's life expectancy, the extent of the patient's requests for euthanasia, the family's attitude toward prolonging care, and the patient's willingness to donate organs—had significant effects on lay participants' ratings of the acceptability of euthanasia for hypothetical patients. The nature of these effects differed considerably.

The request information was, as in our previous study (Frileux et al., 2003), the most important. The new level we tested—in which the patient is comatose and, therefore, unable to make a request—produced, as expected, an acceptability rating intermediate between those for no request and some request. People are thus willing to permit euthanasia for patients without the capacity to request it. This contrasts with laws in, for example, the state of New York, according to which a person without capacity must be provided with life-sustaining care unless that person has previously appointed a health care proxy or has left explicit directives to the contrary (New York State Task Force, 2001). We confirmed (Frileux et al., 2003) that the extent of request has a stronger impact on acceptability ratings among younger than among older people and also found that it has a stronger effect on men's than on women's judgments.

The patient's life expectancy had only a weak impact on acceptability. This implies that euthanasia even of a patient with a much longer life expectancy than examples used in this study (3 days, 10 days, and 1 month) might be considered acceptable by many people (especially if this patient were to ask for it insistently). Further investigation of the impact of longer life expectancies is needed.

Other studies have demonstrated that people often rate living with severe cognitive impairment as worse than death (Fried, Bradley, Towle, & Allore, 2002; Lockhart, Ditto, Danks, Coppola, & Smucker, 2001; Patrick, Starks, Cain, Uhlmann, & Pearlman, 1994; Sorum, 1995; Sorum, Muñoz Sastre, Mullet, & Gamelin, 2001) and that people find physician-assisted suicide and euthanasia more acceptable when the patient is cognitively impaired (Frileux et al., 2003). When the patient was in a coma in the current study, the effect of the family's opinion about prolonging treatment was, as expected, greater than when the patient was able to

formulate a request. It appears that, in this case, the family's opinion is taken as a partial substitute for the patient's request. This information had, however, a limited impact: it ranked second in importance to request, but far behind it. Even when the family's attitude was favorable to treatment cessation, the acceptability rating was still much lower than when the patient made repetitive requests.

The effect of the patient's willingness to donate organs was minimal even if statistically significant. Our participants did not share the concern of some patients (Teisseyre, N., personal conversations with patients, 2002) that they run the risk of being prematurely euthanized if they have consented to donate their organs.

When the participants integrated the different pieces of information about a particular hypothetical patient to make an acceptability rating, they combined the factors of life expectancy, request, and organ donation in an additive way. The only interaction between the four within-subject factors was, as we expected and as is described above, the interaction between the family's attitude toward prolonging care and the extent of patient request for euthanasia.

The cluster analysis showed three distinct groups. The participants in the majority cluster (75% of participants), who were relatively younger than the others, considered all four factors as relevant to the issue of the acceptability of euthanasia. The participants in the two minority clusters considered all four factors as irrelevant to this issue. One of these groups (7% of participants), composed of participants relatively older than those in the majority cluster, always judged euthanasia as unacceptable, irrespective of circumstances. The other group (18%), composed of participants who were also relatively older than those in the majority cluster, considered euthanasia as completely acceptable in all the situations depicted in the scenarios. The majority group is, of course, the group to which the debate, policies, and laws about euthanasia need to be directed.

The finding of two clusters of participants with extreme views about the acceptability of euthanasia is important methodologically. It implies that the technique used—an application of Anderson's Functional Theory of Cognition—did not force the participants to respond in a predetermined way. It was able to reflect extreme views (strong pros or cons) as well as nuanced ones that depended on the circumstances of the case.

We also examined the way in which participants' personal characteristics (values, locus of control, and attitude toward the current legislation prohibiting euthanasia) were related to their ratings of the acceptability of euthanasia. Contrary to our expectations (Cicirelli, 1997; Cicirelli et al., 2000), none of the 18 classical values (Rokeach, 1969, 1973), including pleasure, comfort, exciting life, freedom, and self-respect, was associated with the overall acceptability judgments. Furthermore, for only two values—pleasure and an exciting life—did participants who strongly endorsed the values give more importance to the request information than participants who less strongly endorsed these values. Thus personal values—at least as measured by a psychometric device like Rokeach's—did not appear strongly to determine attitudes toward euthanasia. This may not be surprising since a person's position on a concrete and emotionally charged question like euthanasia for a particular individual surely depends on a complex interplay of multiple values, experiences, and constraints. For example, the importance of freedom may, for one person or in one circumstance, imply that euthanasia should be supported as an ultimate expression of the patient's freedom or opposed as the definitive curtailment of this freedom. The relation between personal values and attitudes toward euthanasia needs further study.

Similarly, contrary to our expectations again (Cicirelli et al., 2000), locus of control had no connection with attitudes toward euthanasia. Unlike the many seriously ill patients who want access to physician-assisted suicide "so that they can control the manner and timing of their death" (Wineberg & Werth, 2003), our participants did not seem to act as if making judgments about euthanasia for others was related to their own degree of internality/externality.

Finally, it is not surprising, of course, that participants who wanted to liberalize the current legislation about euthanasia gave higher ratings of the acceptability of euthanasia for the hypothetical patients than did those who opposed liberalization. What is surprising is that the participants' attitude toward legislative change did not affect their cognitive integration of the information. We expected those favoring liberalization to put more emphasis on the request information, but in fact the relative weights and the way of combining information did not differ between those who supported and those who opposed the decriminalization and legalization of euthanasia. The biases were thus global—as if the supporters merely decided to concentrate their ratings on the right side of the response scales and the opponents on the left side, regardless of the specifics of the scenarios.

Acceptability for health professionals

The second study examined whether physicians, nurses, nurse's aides, and psychologists would judge the acceptability of euthanasia in the same way as lay people. As expected, the overall acceptability rating of the nurse's aides was close to that of the lay people (22.51 vs. 22.37), the overall ratings of the psychologists (15.63) and physicians (15.33) were considerably lower, and that of the nurses was in the middle (18.52). The

patient information had effects on the health professionals that were, surprisingly, as strong as those on the lay people except that the patient's willingness to donate organs, which had a minimal effect on the lay people, had no effect on the health professionals (contrary to the fears of some patients [Teisseyre, N., personal conversations with patients, 2002]). In addition, the interaction found in the first study between the extent of patient requests and the family's attitude toward prolonging care was, as expected, also found among the health professionals. In sum, at a cognitive level, physicians, nurses, psychologists, nurse's aides, and lay people integrated the information in the patient scenarios in almost the same way.

Furthermore, the same three clearly interpretable clusters found in the first study were also found among the health professionals. A few of the health professionals (especially among the physicians) were opposed to euthanasia in all circumstances, and a few judged the recourse to euthanasia always acceptable. Most of them, however, rejected these extreme positions and judged the acceptability of euthanasia as a function of the particular elements in each situation; they gave prime important to the extent of patient requests for euthanasia, but had to rely on the family's attitude toward prolonging care when the patient was in a coma.

Conclusions

In our two studies, we showed that lay people and health care professionals disagree greatly among themselves, and somewhat between groups, about the acceptability of physician-performed euthanasia. The large majority of both lay people and health care professionals are, however, very similar in the way they think about the issue. They structure the information in the patient scenarios in the same way: they assign most importance to the extent of requests for euthanasia by the patient and least importance (the lay people) or none (the health professionals) to the patient's willingness to donate organs. They also integrate the information from the different factors in the same way: the factors of patient request, patient life expectancy, and (for the lay people) organ donation are combined additively, and the family's attitude toward prolonging care interacts with patient request (playing a larger role when the patient can make no request). Thus we have demonstrated a common cognitive foundation for future discussions, at the levels of both clinical care and public policy, of the conditions under which physician-performed euthanasia might be acceptable to the majority of lay people and health care professionals in France and elsewhere.

Our findings must, of course, be applied with caution. First, we studied only some of the factors involved in judging the acceptability of euthanasia; our methodology did not permit us to study a larger number of factors at the same time. Second, the patient's life expectancy may have played a larger role if longer options had been included. Third, our samples, though large, were convenience samples and, therefore, may not be fully representative of the French public and French health professionals, much less of people in other cultures and societies (van de Vijver & Leung, 1997). We hope researchers elsewhere will use our methods to study the way these other people judge the acceptability of euthanasia.

Appendix A

Examples of scenarios

Mr. Arnaud is **40 years** old.
He is suffering from a serious illness, totally incurable given the present state of medical knowledge.
He is currently receiving the best possible treatments.
He suffers atrociously; pain medication cannot truly relieve his suffering.
According to his doctors, his life expectancy is about **3 days**.
He has **never** expressed a wish for euthanasia.
His family has clearly expressed the wish **not to prolong** his suffering uselessly.
In addition, Mr. Arnaud has declared he is **in favor of donating his organs**.

To what degree do you think that euthanasia is an acceptable solution in this case?
Not at all acceptable o—o—o—o—o- 35 cm –o—o—o—o—o—o completely acceptable

Mr. Bertrand is **40 years** old.
He is suffering from a serious illness, totally incurable given the present state of medical knowledge.
He is currently receiving the best possible treatments.
He suffers atrociously; pain medication cannot truly relieve his suffering.
According to his doctors, his life expectancy is about **8 days**.
He has asked **clearly and repeatedly** to receive euthanasia.
His family has not expressed any particular wish.
In addition, Mr. Bertrand has declared he is **opposed to donating his organs**.

To what degree do you think that euthanasia is an acceptable solution in this case?
Not at all acceptable o—o—o—o—o- 35 cm –o—o—o—o—o—o completely acceptable

Mr. Bissey is **40 years** old.
He is suffering from a serious illness, totally incurable given the present state of medical knowledge.
He is currently receiving the best possible treatments.
He suffers atrociously; pain medication cannot truly relieve his suffering.
According to his doctors, his life expectancy is about **1 month**.
He has **sometimes expressed a wish** for euthanasia.
His family has cleared expressed the wish to do **everything possible** to keep him alive.
In addition, Mr. Bissey has declared he is **opposed to donating his organs**.

To what degree do you think that euthanasia is an acceptable solution in this case?
Not at all acceptable o—o—o—o—o- 35 cm –o—o—o—o—o—o completely acceptable

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