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Mette Kjer Kalsoft

*Odense University, mettekjerkalsoft@rsyd.dk*

Jesper Bo Nielsen

*University of Southern Denmark*

Glenn P. Salkeld

*University of Wollongong, gsalkeld@uow.edu.au*

Jack Dowie

*University of London*

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# Towards integrating the principlist and casuist approaches to ethical decisions via multi-criterial support

## **Abstract**

An interactive decision support tool based on Multi-Criteria Decision Analysis (MCDA) can help health professionals integrate the principlist (principle-based) and casuist (case-based) approaches to ethical decision making in both their training and practice. MCDA can incorporate generic ethical principles as criteria; then draw on case-based reasoning as the basis for specifying, in the individual case, the available options, the ratings of each option on each criterion, and the relative weighting of the criteria. This produces a personalised, transparent and decomposable opinion on the merits of each option, as a contribution to enhanced deliberation. As proof of concept and method an exemplar aid adds veracity and confidentiality to beneficence, non-maleficence, autonomy and justice, as the criteria, with case-based reasoning supplying the necessary inputs for the decision of whether a nurse should disclose the poor prognosis of a patient to a close relative of the patient, when asked, on their first encounter.

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# Towards Integrating the Principlist and Casuist Approaches to Ethical Decisions via Multi-Criterial Support

Mette Kjer KALTOFT<sup>a1</sup>, Jesper Bo NIELSEN<sup>b</sup>, Glenn SALKELD<sup>c</sup>, Jack DOWIE<sup>d</sup>  
<sup>a</sup>*Odense University Hospital Svendborg*, <sup>b</sup>*University of Southern Denmark*  
<sup>c</sup>*University of Sydney* <sup>d</sup>*London School of Hygiene and Tropical Medicine*

**Abstract.** An interactive decision support tool based on Multi-Criteria Decision Analysis (MCDA) can help health professionals integrate the principlist (principle-based) and casuist (case-based) approaches to ethical decision making in both their training and practice. MCDA can incorporate generic ethical principles as criteria; then draw on case-based reasoning as the basis for specifying, in the individual case, the available options, the ratings of each option on each criterion, and the relative weighting of the criteria. This produces a personalised, transparent and decomposable opinion on the merits of each option, as a contribution to enhanced deliberation. As proof of concept and method an exemplar aid adds veracity and confidentiality to beneficence, non-maleficence, autonomy and justice, as the criteria, with case-based reasoning supplying the necessary inputs for the decision of whether a nurse should disclose the poor prognosis of a patient to a close relative of the patient, when asked, on their first encounter.

**Keywords.** Ethics; principle-based; case-based; multi-criteria; decision support; nursing

## 1. Introduction

Nurses, other clinicians and all health professionals are regularly called on to make or participate in decisions. The time available varies from a few moments in emergency situations, as in intensive care, to hours or days when there is time to reflect and ‘slow down’ thinking and process information and preferences in a more considered way [1]. The decisions also vary in the extent to which they involve ethical issues. All decisions involve making value judgments as well as processing information, but some are regarded as particularly ethical in character and are referred to as ethical dilemmas.

A disconnect between the Nursing Informatics and Nursing Ethics communities has been observed [2]. This is seen as reflecting the reluctance of both to move beyond supplying inputs to decision makers (high quality information and ethical insights respectively) and to engage with the decisions faced by health professionals, as such. The suggestion that an interactive clinical decision aid could increase cross-disciplinary communication in the context of person-centred care is developed here. The associated aim is to stimulate an enhanced discourse between the principlist and casuistic approaches to ethical decision making, seeking a possible resolution of their conflict at a prescriptive level, rather than either a theoretical or behavioural one.

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<sup>1</sup> [MetteKjerKaltoft@rsyd.dk](mailto:MetteKjerKaltoft@rsyd.dk) Mette Kjer Kaltoft Odense University Hospital – Svendborg Hospital, 5700 Svendborg Denmark

A paper by Page provides adequate background, containing all the necessary citations of the wider ethics literature for which there is not space on this occasion [3]. Her research was motivated by what she saw as the surprising lack of empirical investigation of the four Beauchamp and Childress classic ethical principles, and, in particular, the absence of any quantitative exploration of the *relative* importance attached to them. She sought to remedy this in a research study that had two aims.

The first was to establish how the relative importance attached to ethical principles in the abstract - that is without reference to any particular case - *could* be measured, and then to measure them. Her answer was the pairwise elicitation procedure employed within the Analytic Hierarchy Process. Using this she established the individual weights of her subjects and the group average weights. She had added the principles of veracity (truth-telling) and confidentiality to the classic four. The average (percentage) weights obtained were: Beneficence 15, Non-maleficence 25, Autonomy 16, Justice 16, Veracity 12 and Confidentiality 16.

The second aim was to establish the relationship between the subject's importance weights as measured and their ethical judgments about four specific cases involving competing ethical principles (conveyed to the subjects in the form of scenarios). Finding no significant correlation between the weights and judgements, Page explored the possible reasons for what she characterised as the predictive failure of the principles. She concluded that her findings favoured the casuistic (case-based) approach within ethics over the principlist one and that

"It could be that in terms of predicting ethical outcomes the principles may only be useful when evaluated... in the context of a specific scenario. Perhaps situational information, in all its complexity, is such that it "re-weights" the principles, and general weightings are rendered somewhat arbitrary in the face of new specific case-based information... When participants were faced with these cases they may have used the situational information to derive the importance of the principles (or approximation of) in a more casuistical reasoning manner." [3, pp. 6-7]

Page ends by noting that most attempts to resolve the principlist-casuistic tension continue to be made at a discursive theoretical level, such as Kuczewski [4], but is sceptical that the search for a coherent normative/prescriptive resolution will be successful. She argues that the most likely way forward will involve behavioural modeling of ethical decision making. We agree that the principlist-casuist tension is unlikely to be resolved or reduced within a discursive process. Health professionals will continue to be faced, not only by the need to make ethical decisions, but to decide on every occasion *how* to make the ethical decision. In other words, to decide how to bring together the generic ethical principles that have been heavily emphasised in their training and subsequent courses, with the case-specific considerations that immediately surface in the individual case. However, we disagree, that the search for a coherent prescriptive solution should be abandoned in favour of descriptive modeling, not least because such modelling will require value judgments and these will require prescriptive justification. It may be simply a case of ability to use the principles in the specific case that is the problem, as Page acknowledges.

"[My] results pose some questions for the importance and use of the principles in an empirical and applied sense. Their worth in terms of conceptualising the moral issues in a scenario seems obvious but if they are not actually used, *or able to be used*, in decision making by clinicians then it raises questions about their overall utility and applicability (at least in their current guise)." (italics added) [3, p 7]

If it is *inability*, then decision support offers a possible answer, so long as it addresses the multiple considerations present in ethical dilemmas

There are two broad multi-criteria 'decision technologies' and hence types of decision support. Instantiations of 'multi-criteria decision deliberation' (MCDD) characteristically quantify the magnitude of option performance on criteria and the relative importance of the criteria *verbally* and produce the decision (or opinion) through an *argumentation* process ('making up ones mind after taking the pros and cons into account'). The bulk of existing decision aids fall within this category. In contrast, implementations of multi criteria decision analysis (MCDA) quantify these two magnitudes *numerically*, stressing the importance of arriving at them independently to minimise contamination, then integrate them via an explicit *calculation* process (the simple weighted sum approach.)

Many decision aids provide a structure for the deliberation when it concerns test or treatment decision for a specific condition, but none address the point of decision as such. Support for such MCDD in ethical decisions is in the form of procedural guidelines or checklists, of which Manson's is a recent example [5]. Attempts to apply decision analytic principles and produce computer based decision support for ethical decisions have been explored, mainly in the field of Operational Research. It will suffice for present purposes to note the contributions of Brans [6] and Laaksoharju [7]. They present contrasting views on the role of a technique such as MCDA and on what should be the aim of computerised decision support. Brans presents a case for the use of MCDA as a way to improve ethical decision making and, while we use an alternative implementation of that technique in developing a practical support tool, we are very much aligned with his thinking, especially in arguing that the analysis should produce a result, an opinion.

In contrast, Laaksoharju's computerised decision tool is without theoretical grounding, other than psychological propositions, and with

"the main requirement [being] that it should not be making any decisions and not even supporting any specific solutions: it should not be elevated to an authority. The tool should not even give any directions about the correctness of any conclusion. This will force the user to analyze the problem very carefully. The sole intention should be to help the user to organize and structure a problem at hand. At the same time the problem should not be narrowed down, thus risking oversimplification, but instead be expanded and widened so that the user can appreciate the full impact of a decision". [7, p43]

Laaksoharju concedes that some may see his tool as 'pointless'. That is not our view, but we disagree with his basic position, which is based on the empirically unverified assumption that the decision maker's defective decision making processes can be improved by countering various well-publicised biases [1]. Interestingly, he does not address the fundamental issue of what comparator is to be used in the empirical evaluation of alternative decision support approaches. Whether an MCDA prescription-based aid is better or worse than a description-grounded one requires evaluation undertaken with outcome measures that are not biased in favour of one or other. And the evaluation needs to be in a specific ethical case. Since we see our MCDA aid being deployed within a wider deliberative context and as explicitly accepting the need to balance the analytical and the intuitive, we see no reason why decision makers should not be able to access such a prescriptive aid. It is an alternative,

not a replacement. MCDA requires the arguments and reasons to be subsumed in a model of the decision which clearly distinguishes value and factual judgements using numbers and a calculation algorithm to produce an opinion. Most MCDD aids follow Laaksoharju in being committed to *not* producing such an opinion, leaving the person to ‘make up their mind’.

## Methods

In the sort of ethical dilemma addressed in the literature we conceptualise the multiple generic ethical principles as the *criteria* in an MCDA, with the alternative possible courses of action as the *options*. The performance ratings of the options on these criteria and the weightings of the criteria are both case-based and so the process is a potential way of integrating the principlist and casuist approaches. The recommended sequence in producing the Annalisa© implementation of MCDA for a specific clinical case [8], from the perspective of a single health professional, is to

- determine the generic ethical principles to be set as the criteria
- rate each of the options on each of these criteria in this specific case (e.g. to what degree does an option fulfill the criterion of beneficence?)
- weight the criteria in this particular case (e.g. what is the relative weight to be assigned to beneficence and the other principles?)
- observe the Scores that result of combining the Weightings and Ratings using the expected value (weighted sum) algorithm
- modify the Weightings and Ratings, if desired, but without being able to see the effect on the Scores until the changes are confirmed
- reflect/deliberate on the opinion produced

As proof of concept and method we applied the proposed approach in a specific case. A close relative of a seriously-ill patient asks his named nurse about the prognosis. To keep this illustration simple, we see the nurse having two broad Options, given that she actually does possess valid prognostic information and that this is her first encounter with the relative. She can disclose fully, or she can deny she has 'significant' relevant information.

We take the 6 ethical principles in the study by Page (Beneficence, Non-Maleficence, Autonomy, Justice, Veracity (truth-telling) and Confidentiality) and enter them as the criteria into the Annalisa [3]. Case-based reasoning is used to assess how each Option performs on each criterion. The best option varies with the weights assigned to the criteria, as well as how well the options perform on those criteria.

## Results

The result from entering one hypothetical set of Weightings and Ratings in the decision support tool appears in Figure 1. This example is found at <http://www.cafeannalisa.org.uk/topics/nursing-2014-05-14/> Any set of Weightings reflects particular trade-offs between the criteria and particular case-specific judgements concerning the content and scale of (e.g.) the beneficence and non-maleficence involved. To see these trade-offs and judgments being explored within a reflection-in-action approach, see the illustrative video with hypothetical numbers at <https://www.youtube.com/watch?v=n8SN20wxRGU&feature=youtu.be>

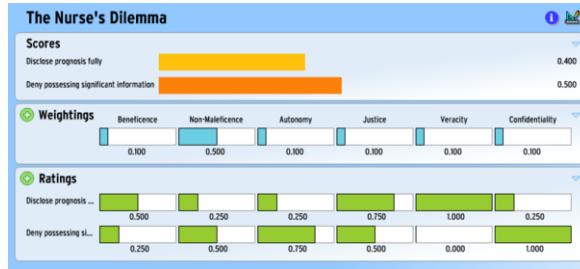


Figure 1: Screen capture of Annalisa© to document the aid opinion at one point

## Discussion

Ethical debate has become increasingly prominent in healthcare as a result of the movements towards Shared Decision Making and Person-Centred Healthcare in clinical practice, as well as wider demographic, economic and technological changes. Since multiple considerations are important to patients - and different considerations to different patients - the personalised assessment of the benefits and harms from alternative courses of action makes case-based reasoning even more essential than in the past, legally as well as ethically. Yet the high-level generic ethical principles remain attractive and are extensively referred to in both clinical training and practice. For both practical and pedagogical reasons it therefore seems important to pursue their potential integration using an analytical approach rarely exploited in ethics. The aim of multiple criteria analysis is precisely to make transparent the trade-offs in the light of the case-specific considerations (e.g. the content and scope of beneficence and non-maleficence) and make clear whose perspective is being adopted in the analysis.

The prescriptive MCDA approach to decision making is offered as valid for use in most healthcare situations. We invite health professionals (and ethics committees) to add this tool to their portfolio of competencies and introduce it in their teaching and presentations, where it can help students and other decision stakeholders visualise and map the link between generic ethical principles and case-specific information.

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