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STUDIES IN LOGIC, GRAMMAR AND RHETORIC 64 (77) 2020

DOI: 10.2478/slgr-2020-0042

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Semantic, Logical, and Ethical Considerations of Patients' Decisions in the Resolution of Moral Dilemmas

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Abstract. Decision-making procedures in medical practice are often analysed by both philosophers of science and ethicists, as well as statisticians, clinicians and methodologists. The paper focuses on decisions made by patients in situations of moral dilemma. The main purpose is to analyse the strategies used in resolving such dilemmas. First, the concept of a 'situation of moral dilemma' is clarified. Then, two types of strategies for resolving such situations are distinguished. The first strategy requires revising the patient's belief system or moral orientation. The second one includes a group of non-revision beliefs strategies (NRB). The authors argue in support of the thesis that NRB strategies are, in fact, the patient's first choice when it comes to resolving moral dilemmas. The paper analyses situations where the NRB strategies may prove effective, as well as situations where they fail and where the solution of the moral dilemma must be addressed by revising the accepted belief system. The findings will help to better understand patients' decision-making processes.

Introduction

Decision-making procedures in medical practice are often analysed by both philosophers of science and ethicists, as well as statisticians, clinicians, and methodologists. Much less attention is paid to the rationality of decisions made by patients. Yet, the patients are those who face the problem of making decisions to undergo specific medical procedures. In many cases, such decisions are not obvious, and often assume the form of a moral dilemma. From both a bioethical and an epistemological perspective, it seems important to determine the process of resolving the moral dilemmas faced by patients. Is it possible to identify any typical strategies for resolving such situations? Do such decisions require the patient to revise his or her system of beliefs or moral orientation? Answers to these questions

can provide a better understanding of both the scale of the problems concerning the rationality of choices made by patients and the mechanisms of resolution of moral dilemmas.

This paper focuses on decisions made by patients in situations of moral dilemma. The chief aim of the paper is to demonstrate the strategies used in resolving such dilemmas and to identify their limitations. To achieve this, first a clarification of the concept of a 'situation of moral dilemma' is proposed, followed by a distinction made between two types of strategies for resolving such situations. The first strategy requires revising the patient's accepted system of beliefs or moral orientation. The second includes a group of non-revision strategies. The authors argue in support of the thesis that NRB strategies are, in fact, the patient's first choice when it comes to resolving moral dilemmas. The conclusions provide a starting point for further analyses, i.e. a proposed clarification of the concept of 'bioethical disagreement'.

Any analysis of problems concerning the resolution of bioethical disagreements should consider two issues. First of all, there is no doubt that conclusions formulated in these disagreements may affect the choices made by individuals facing situations of moral dilemma. On the other hand, one should be aware that a situation of moral dilemma experienced by an individual fundamentally differs in terms of emotional involvement from the speculative and theoretical reasoning of the participants of a bioethical disagreement, who may represent opposing or even extremely different moral orientations.

The authors of this paper argue in favour of the thesis that the insolvability of bioethical disagreements results from ambiguities of meaning of several concepts that are of key significance to the disagreements in question. Due to the performative character of these concepts, the participants of bioethical disagreements have different solutions at hand. However, the insolvability of moral disagreements between representatives of extremely different moral orientations does not relieve an individual, i.e. a specific patient, from choosing such solutions in a situation when he or she is the direct subject of the moral dilemma. When choosing a solution, the patient must choose between the numerous layers of meaning of a concept or a group of concepts that constitute the bioethical disagreement. The authors believe that the patient can achieve this by using one of the NRB strategies presented herein.

It should be stressed that not all moral dilemmas which the patient experiences can be resolved based on NRB strategies. Further in the paper, an attempt is made at identifying the situations of moral dilemmas which

require a revision of belief systems or moral orientations to resolve such dilemmas.

The author's opinion is that the findings presented herein will allow for a better understanding of problems related to the rationality of patients' decisions and will become a starting point for more detailed analyses considering both complex situations of moral dilemmas and more complex strategies for resolving such dilemmas.

Two Dimensions of Decision-making Processes in Medicine

In very general terms, analyses of decision-making procedures assume that a subject acts rationally when, for the purpose of achieving a preferred outcome, he or she chooses an action which in the light of what they know, gives them the best chance of achieving the outcome. The problem, of course, is that a patient's knowledge of the effectiveness of the various actions that can produce a given outcome is not scientific; moreover, it can evidently stand in contradiction with the established scientific knowledge. Subsequently, can the patient's decisions based on their non-scientific knowledge be seen as rational?

Modern scientific knowledge in the field of medicine is based on research procedures established in compliance with EBM postulates. In the case of evaluating the effectiveness and safety of a therapy, these postulates define the hierarchy of evidence credibility in terms of how it is obtained (through meta-analyses, randomised controlled trials, cohort studies, case-control studies, casuistry, basic sciences, etc.) (Jaeschke et al., 1998). In the case of evaluating diagnostic procedures, data is available that determines the credibility of information obtained through diagnostic tests (i.e. their sensitivity, specificity, or likelihood ratio) (Moons et al., 1997). Thus, medical decisions concerning both the diagnostics and the therapy are made by means of reasoning based on sentences that comprise scientific knowledge in light of research procedures accepted as credible. It is worth noting that determining a hierarchy of data in the context of the credibility of the applied research procedures is a very controversial postulate from an epistemological perspective, often debated by philosophers in the broad literature on the subject (Cartwright, 2010; La Caze, 2013; Worrall, 2002).

One of the main criticisms of the EBM concept formulated in the late 20th century concerned the issue of objectifying patients who, in the light of its recommendations, became excluded from the decision-making processes

that, in fact, concern them personally. As a consequence of this criticism, it was accepted that medical decisions must have two dimensions: the medical dimension that must include indications based on biomedical knowledge in compliance with EBM standards, as well as the dimension that must consider the patient's preferences.

The methods of formulating decision-making algorithms that determine medical indications are widely debated both in philosophical and biomedical literature. To develop these algorithms, new types of formal apparatuses are used, which transcend statistical analysis. These may include non-standard set theories, e.g. the fuzzy set theory or the rough set theory, which provide the basis for generating decision-making algorithms (Pawlak, 2001; Rzepiński, 2014). However, the process of making decisions by patients is far less acknowledged in analyses both in the field of decision theory and philosophy.

The reasoning inherent in patients' decision-making processes may obviously, be reconstructed using various formal apparatuses: from classical logic to various types of non-classical logic. There is no doubt, however, that these analyses are insufficient for understanding why a patient makes one and not another decision in specific problem situations.

One should note that all reasoning activity, including that at the centre of decision-making procedures, is directed towards a specific outcome, determined by culture. Reasoning is thus based not only on a set of theoretical and empirical assumptions stemming from scientific research, but also on philosophical, religious, and worldview assumptions that comprise the value system accepted by a subject (Zamiara, 2011). The knowledge of the patient who makes decisions (the so-called 'common-sense knowledge') is an extremely complex belief system (BF), where the axiological and cultural dimension predominates over the scientific perspective. The consequences of this situation are significant as the predomination of the cultural dimension in the patient's belief system puts his or her decision-making process in a situation of moral dilemma.

Situations of Moral Dilemma

Decision-making processes in situations that create moral dilemmas are, undoubtedly, at the core of most analyses in the field of ethics. This is extensively described in literature (Arystoteles, 1938; Kant, 1971; Kant, 2001; Mill, 1979; Plato, 1930; Price, 1974; Sartre, 1957; Singer, 1993). The topic is especially important in bioethics as medical practice generates the most complex situations of moral dilemma (Baum et al., 2015). The most fre-

quently analysed situations of moral dilemma are those that emerge in the decision-making processes of doctors and other health professionals. The significance of situations of moral dilemma in the decision-making processes of patients, however, is discussed on a much narrower scale.

For the purpose of describing the situation of moral dilemma presented in this paper, a distinction is made between a belief system (BF) and moral orientation (MO). The following approach is adopted: it is assumed that sentences of the MO system are sentences that express either obligations of an ethical nature or the logical consequences of such sentences. No decisions are made regarding their structure or prejudice whether an obligation is conditional or unconditional (Sadegh-Zadeh, 2012; Świrydowicz, 1995). MO system sentences may include sentences such as 'Patients should give their consent to take part in phase 2 clinical trials' as well as 'Patients should give their consent to take part in phase 2 clinical trials, provided they are suffering from condition D and the criteria for including them in the trials are met'. In the first case, the sentence is unconditional; in the second case, it is conditional.

Next, it is assumed that a BF system includes all the sentences that are not of an obligatory nature. It is accepted that there are three main types of sentences in the system: first-order sentences, evaluating sentences, and problem-identifying sentences.

The first class of sentences includes simple descriptions of reality, observational sentences, scientific claims (that are both hypotheses and scientific laws), outcomes of scientific experiments, and personal experience. It also includes non-confirmable metaphysical presuppositions providing foundations for research programmes, as well as elements of religious beliefs, ideology, and political and social views. All of these sentences create a set of first-order claims that contribute to a subject's system of beliefs.

The role of sentences from the first class has often been addressed in philosophical reflections on science. The following can be mentioned as examples: the neo-positivist concept of observation sentences (Carnap, 1937), analyses of the status of a scientific hypothesis status within the French conventionalism (Duhem, 1991; Poincare, 1994), Mehlberg's conclusions on non-confirmable presuppositions of science (Mehlberg, 1966), the concept of statements creating the hard core of a research programme as described by Lakatos (1977), or analyses concerning the structure and types of scientific laws (Hempel, 1965; Nagel, 1960). Owing to these analyses, it is now known that many initial views and intuitions regarding the structure and function of statements in science turned out to be wrong. Nonetheless, such analyses made it possible to better understand the restrictions of us-

ing knowledge-generating procedures in science, namely those procedures that create the most credible part of our systems of beliefs. The problem is, however, that analyses conducted by philosophers of science do not provide us with knowledge about those elements of belief systems that express the broadly-understood cultural and social aspect of these systems and which have a significant impact on the course of the decision-making processes. In this paper, it is accepted that these types of sentences of a social, religious, or ideological nature exist within and affect patients' belief systems to a greater extent than elements of scientific knowledge as deliberated by philosophers of science.

The second important element of BF systems are sets of meta-sentences used to evaluate first-order claims. Such claims are used by scientists to evaluate the validity of hypotheses; by physicians to evaluate the effectiveness of therapeutic interventions; by psychologists, sociologists, and politicians to evaluate the actions of individuals or societies; and in all other situations where there is a need to evaluate actions or the outcomes of actions. Meta-sentences, therefore, express the axiological element of a system of beliefs. Their formulation in science is associated with evaluation processes aimed at falsifying or confirming a given first-order sentence. Both these elements have been often considered in philosophical reflection on science. Analyses from the first half of the 20th century made it possible to determine the ambiguity of the falsification procedure (Duhem, 1991; Quine, 1951). On the other hand, reflections on the issue of confirming scientific claims drew attention to the necessity of extending the concept of probability beyond its classical mathematical definition. This paved the way for a logical (Carnap, 1950; Keynes, 1921), propensity-based (Popper, 1957), or finally, personalistic interpretation of probability (Savage, 1973), which determined new trends in the discussion on the problem of justification of scientific statements. In particular, the latter type of interpretation gained importance in the context of the development of the decision theory and in justifying the use of Bayesian analysis in biomedical sciences (Joseph et al., 1995; Rzepiński, 2018).

Analyses conducted by philosophers mainly focus on procedures of justification of scientific statements. There are much less philosophical findings concerning procedures for justifying beliefs of a popular nature, originating from the broadly understood cultural layer.

A subject's belief system containing only the two types of sentences, i.e. first-order sentences and meta-sentences, would be a static one as established evaluation methods would stabilise the belief system at a certain stage, preventing any further modification. Therefore, the authors believe

that the third essential element of any belief system are sentences that identify problem situations, assuming that questions are the linguistic representation of problem situations. Such a solution is commonly accepted in philosophical reflection, providing a point of departure for the development of various concepts of question logic that make it possible to analyse the procedures for seeking solutions to problem situations (Hajduk, 1986; Wiśniewski, 1990). Thus, questions such as: (i) 'Will it be safe for me to participate in a clinical trial?'; (ii) 'Should I agree to undergo invasive diagnostics?'; or (iii) 'Should I agree to the removal of my organs after my death?' are all questions which identify a problem situation a particular patient experiences, whose solution requires the patient to make specific decisions.

It should be noted that the last question identifies a particular type of a problem situation, which can be described as a moral dilemma. It should also be noted that the auxiliary verb 'should' suggests obligation, in other words, a sentence from the MO set. Thus, question (iii) formulated under the accepted BF system initiates a situation of moral dilemma when the subject formulates his or her doubts towards the obligations expressed in the MO. Subsequently, question (iii) is generated based on the set of sentences that are part of the MO system.

The above conclusions make the concept of 'situation of moral dilemma' clearer. A general description of such a situation makes it possible to say that a moral dilemma happens in such a situation Z (or a class of situations) that requires act x or its omission to be resolved. In situation Z, certain moral motivations suggest that act x is a morally preferred act, whilst other moral motivations suggest that it is morally unacceptable. Hence, the motivations behind act x belong to a different moral orientation than the motivations behind its omission. The moral dilemma is, therefore, identified by the question: 'Which of the moral orientations should be chosen in situation Z?' But the problem is that the arguments in favour of act x and those against it are not unequivocally resolvable on the basis of the subject's accepted belief system, i.e. on the basis of a set of first-order sentences and evaluating sentences (Baum, 2010).

As far as the ontological aspect is concerned, a situation of moral dilemma can be described in terms of general semantic findings perceived as a set of objects and the relationships between these objects. It is then convenient to distinguish the main element of this situation: the subject involved in the resolution of a given dilemma. Let it be noted that the authors do not prejudge whether the subject is the direct or indirect subject of the moral dilemma. The difference is obviously important as different so-

lutions can be expected if the subject is the direct subject of the dilemma, for example, a patient who is to give consent to participate in a clinical trial, compared to when the subject is an indirect subject, for example, a bioethicist considering the legitimacy of the patient's consent to take part in the trial.

The general description presented above may provide the basis for identifying a number of issues that are interesting from an epistemological perspective. First of all, it should be noted that according to this description, the subject's BF system can be complemented by different moral orientations. It is acceptable for the BF system to be complemented by a certain set of MO sentences containing sentence A, which acknowledges act x as moral, and a set of MO sentences containing a non-A sentence, which acknowledges act x as immoral. A situation of moral dilemma, therefore, arises when the class of BF sentences is incomplete because of some of the sentences that constitute the moral orientation.

The non-resolvability of a certain class of sentences (MO) within the accepted BF system does not relieve the subject from the obligation to make a decision. Most situations of moral dilemma, especially in the field of medical practice, need to be resolved, both when the problem concerns the decision-making procedures involving health professionals and when it concerns the decisions made by patients. In this situation it is possible to ask about the possible methods of reaching solutions of moral dilemmas by the subject. To answer this, two main strategies for resolving moral dilemmas will be identified. The first is referred to as 'deductive strategy'; the second as 'evaluation strategy'.

Strategies for Resolving Moral Dilemmas

Moral dilemmas can be resolved either by evaluation of the obligations arising from a given moral orientation (within the acceptable BF system), or by revising the belief system. The first case concerns NRB strategies, while the second concerns strategies for the revision of a belief system. This paper focuses on strategies for resolving moral dilemmas, without looking at strategies for the revision of beliefs. In the authors' opinion, NRB strategies are the most basic ones used, first and foremost by a subject facing a moral dilemma. The issue of revising beliefs is a very complex one and would require a separate analysis (Lechniak, 2011).

The deductive strategy is the simplest method for resolving a moral dilemma by trying to show that there is at least one A-sentence within

a given moral orientation that is not acceptable within the BF system or, more specifically, that it is in contradiction with the BF system. It is possible to use this strategy due to the fact that the above description of the situation of moral dilemma is highly idealised. It assumes that the subject has knowledge of all the consequences, deductively entailed from the sentences that constitute a given moral orientation. However, this is obviously not the case. In most cases, subjects are aware of only the main principles of a given moral orientation. Therefore, when a situation of moral dilemma occurs, the subject first tries to consider whether one of the optional moral orientations contains such logical consequences that he or she has not taken into account and which are in contradiction with his or her system of beliefs. Let it be noted that this strategy is widely used in disputes over situations of moral dilemma. Representatives of antagonistic solutions usually try to draw attention to the thus far unrealised consequences that are accepted by their opponents of different moral orientations. In this case, the reasoning is as in the following argument, leading to reduction to absurdity or contradiction (*reductio ad absurdum*):

$$(\mathrm{BF} \wedge \mathrm{MO} \rightarrow \mathrm{C}) \wedge (\mathrm{BF} \wedge \mathrm{MO} \rightarrow \neg\mathrm{C}) \rightarrow \neg\mathrm{MO} \vee \neg\mathrm{BF}$$

The non-C formula represents a consequence the subject was not aware of and whose presence, on the basis of the above law of logic, exacts the rejection of either the BF system or the MO (or both).

Bioethical disputes conducted by representatives of different moral orientations are a good example of the application of the reduction to absurdity strategy (Daigle, 1991). However, it should be stressed that its effectiveness, consisting in its ability to resolve moral dilemmas, is manifested mainly in the case of reasoning performed by individual subjects, such as a specific patient or a specific doctor facing a specific moral dilemma. The effectiveness of this method is much lower in the case of moral dilemmas causing bioethical disagreements between representatives of opposing moral orientations. Section 9 discusses why the effectiveness of this strategy in this type of bioethical dispute is negligible.

However, the strategy for identifying the consequences of a given moral orientation that are in contradiction with the BF system is not always helpful even for individual subject. Despite his or her efforts, an individual is not always able to point out such logical consequences of a given moral orientation that would be in contradiction with their accepted system of beliefs. In such a case, it can be said that the situation of moral dilemma is not resolved by means of reducion to absurdity.

In line with the previous remarks, one should assume that situations of moral dilemma in the area of medical practice must be resolved. If this cannot be done by means of a deductive strategy using the reduction to absurdity method, other options need to be considered. It should be noted that there are two main versions of the evaluation strategy. Let the first version be called the 'quasi-substitution strategy', while the second, the 'prospective coherence strategy'. Let us briefly consider an example illustrating the first one.

Let us consider the situation of a patient for whom a certain medical procedure to treat his or her condition is unacceptable based on their accepted BF system and MO (e.g. blood transfusion, organ transplantation, or an onerous therapy). However, the patient evaluates that both the potential therapeutic effect and the very fact of undergoing therapy is important to his or her loved ones. In resolving the situation of the moral dilemma, the patient decides to accept the rules of action which result from resolving the moral dilemma on the basis of his loved ones' beliefs. Hence, the patient makes a quasi-substitution for his loved one's beliefs. This action is of a quasi-substitutional nature because the patient does not fully accept such beliefs. The patient accounts them instrumentally, as a set of motivations, which makes it possible to derive rules of action that are in line with the expectations of his or her family. The patient makes a choice of therapy or a way of life without being convinced to do so, and he or she only does this because of his or her loved ones. An example of such a situation is when a patient undergoes an arduous treatment, even though in his or her opinion, a better option would be to give up the treatment and use the remaining time in a different way. Such a situation can also be observed in the case of underage gynaecological patients (between ages 16 and 18) who need their parents or legal guardians' consent to use hormonal contraception. Moreover, in the case of pregnancy as a result of a prohibited act (Ustawa z dnia 7 stycznia 1993 r. o planowaniu rodziny, ochronie płodu ludzkiego i warunkach dopuszczalności przerywania ciąży, 1993), the victims cannot decide for themselves whether to terminate or keep the pregnancy. The most dramatic situation, however, is the case of women in sub-Saharan Africa, where female genital mutilation is still taking place.

Both the BF and MO systems can be the subject of quasi-substitution. Acknowledging the claim that 'Clinical trials x prove a reduction in overall mortality in the group of people with condition D' is an example of the substitution of elements of the BF system. In turn, the phrase 'You should not give up, no matter how difficult the treatment is' may, in some situations, constitute an element of the MO.

Quasi-substitution of beliefs is a relatively simple mechanism for resolving a moral dilemma. It does not, however, make it possible to resolve a moral dilemma when the patient's belief system and accepted moral orientation do not differ from those of his or her loved ones. In this case, the quasi-substitution of beliefs, although possible, is pointless as it does not lead to any new rules of action. Yet the requirement to resolve a moral dilemma still exists. In such a situation, the second version of the evaluation strategy is realised, namely the prospective coherence strategy.

To return to the general model of a moral dilemma situation, such a situation occurs when it is acceptable to complement a given BF system with both a certain set of MO sentences containing sentence A that sees act x as moral, and an MO set containing a non-A sentence that sees act x as immoral. The subject is, therefore, unable to make a choice based on the principle of not allowing contradictory beliefs to emerge, because both BF$\cup${A} and BF$\cup${$\neg$A} are non-contradictory. However, the consistency of sentences A and non-A with the BF system does not mean that A and non-A are equally acceptable. It should rather be considered that in a moral dilemma, the subject evaluates which of the sentences, A or non-A, will be more coherent with the other sentences of the BF system.

It should be noted that both in the case of the substitution version and the prospective coherence version, the subject's acceptance of certain meta-rules is considered. In the first case, the rules permit quasi-substitution of a certain subclass of sentences from another belief system. In the second case, however, the rule permits a dilemma to be resolved by arbitrarily evaluating which of the sentences, A or non-A, is more coherent with the subject's (the patient's or the health professional's) system of beliefs.

Significance of the Non-revision Beliefs Strategy

It should be noted that the identification of a moral dilemma situation by a subject involves two aspects that must be clearly distinguished. On the one hand, the identification of a moral dilemma is, indeed, indicative of an ethical reflection on the part of the subject, who evaluates certain types of obligations and considers their ethics. One may even agree that doubts about certain types of actions suggest, in a broad sense, the subject's spiritual and moral development. On the other hand, it is apparent that a situation of moral dilemma results in a certain kind of indecisiveness on the part of the subject, who is unable to decide unequivocally and without any doubt which optional action would be appropriate. At the same

time, failure to act within a certain timeframe may have adverse practical effects. This type of situation may include the following: the need for a very quick decision concerning blood transfusion to be made by a member of Jehovah's Witnesses; accepting an organ by a person opposed to transplantation; or the termination of a pregnancy in order to save the mother's life. Such situations may also include the choice between withdrawal from sporting activities or the risk of injury that may make a professional athlete disabled.

Strategies for resolving moral dilemmas in relation to medical practice are, therefore, of great significance, not only in terms of ethics, but also because the effectiveness of certain medical procedures and their safety depend on how quickly the situation of moral dilemma is resolved. One of the theses of this paper is that NRB-type strategies are first-line strategies when the subject faces a real situation of moral dilemma. A situation of moral dilemma is a particular example of broadly-understood problem situations, i.e. those that emerge both in science and everyday life. The subject always tries to resolve such situations using those resources that are the most easily available. This is an attitude of specific epistemic economy, which requires problems to be solved on the currently acceptable basis. The process is well-acknowledged in the philosophy of science. As it turns out, in situations of conflict between theory and observation, scientist search, first of all, for opportunities to save the endangered theory (Kuhn, 1962; Quine, 1951). In a situation of moral dilemma, the subject acts similarly.

NRB strategies are first-line strategies because they ensure epistemic economy, making it possible to resolve a moral dilemma without changing the subject's belief system. If the subject, through self-reflection, does not find a solution to the moral dilemma within a certain timeframe, only then he or she can undertake to revise their belief system by changing their moral evaluation of the obligations they have so far accepted or excluded. In the authors' opinion, however, such solutions of moral dilemmas only take place once the subject has exhausted all the other possible solutions that constitute developments or modifications of NRB strategies.

NRB strategies are, therefore, the basic tool for resolving situations of moral dilemma. They make it possible to generate rules for decision-making and to take certain types of action much quicker than strategies related to revising belief systems or changes in the accepted moral orientation. Obviously, it is not always possible to make decisions on the basis of these strategies.

Situation of Bioethical Disagreement

It can be observed that a situation of moral dilemma may concern an individual whose belief system does not make it possible to unequivocally determine which moral orientation provides the right foundation for resolving a moral dilemma. This might also concern a group of people. So far, the first of these cases has been considered; the second one is discussed below.

A situation of moral dilemma concerning group G of people is when a subset of these people accepts an MO, opting to accept sentence A that describes act x as moral. The other members of the group accept the MO', opting to accept sentence A', which describes act x as immoral, whereby for sentences A and A' the condition $\neg(A \wedge A')$ is fulfilled. It should be noted that in both groups the belief systems are consistent with the accepted sentences A and A'. The moral dilemma, therefore, does not concern the choices made by an individual, but rather the reaching of a consensus, i.e. the appropriate moral attitude accepted by the social group or its representatives: specific patients, doctors, clinicians, or other health professionals. The situation where the subject of a moral dilemma is not an individual but a group of people who are patients or other health professionals is thus referred to in this paper as a 'situation of bioethical disagreement'. Hence, it can be stated that a set of bioethical disputes is a proper subset of situations of moral dilemmas.

In the light of the authors' findings, it is clear that from the perspective of the representatives of opposing stances, their bioethical disagreement does not identify a moral dilemma for the individual members of the particular group. Indeed, each group involved in the disagreement accepts a specific moral orientation that does not create a moral problem for its members. Antagonists from each group believe in the decision-making rules generated within the accepted MO. However, it should be remembered that apart from the dogmatists in both groups, who believe that only their moral orientation is the right one, there are also individuals for whom the choice between optional moral orientations is not at all obvious. Therefore, it is these individuals that are the subjects of the core part of arguments formulated by representatives of the opposing views.

Thus, the question that needs to be answered is as follows: What should the arguments in favour of different solutions to a bioethical disagreement include? In answering this question, first the causes of bioethical disagreements should be identified. Why is it that one can distinguish between groups of people in society who accept fundamentally different decision-

making rules on ethical issues in their approach to the same phenomena of medical practice and their acceptance of similar methods of argument and substantiating their claims? In the authors' opinion, the answer to this question lies in the semantic vagueness of concepts involved in bioethical disagreements.

Semantic Aspects of Bioethical Disagreements and Performativity of Concepts

In the section "Strategies for resolving moral dilemmas", it is noted that the deductive strategy does not always (or in fact, extremely rarely) lead to the resolution of a moral dilemma between representatives of different moral orientations. This is so despite the fact that it is a relatively effective strategy for resolving moral dilemmas faced by individual subjects: patients or health professionals. There is no doubt that an individual using this strategy is able to obtain an unequivocal solution to a moral dilemma, as long as he or she manages to indicate a consequence of the given moral orientation that they will not find acceptable. Why then, does this method not work equally well in the case of a bioethical disagreement? In the authors' opinion, the reason is the semantic vagueness of the concepts that constitute the key terms in bioethical disagreements.

The concepts involved in bioethical disagreements have no uniform meaning. Each concept can be assigned a 'set' of meanings which depend on value systems, contexts, and worldviews. Articulated words carry emotional weight, in addition to their lexical meaning. Concepts that are subject to moral disagreements have a cultural and emotional superstructure due to which their primary (lexical) meaning becomes secondary. The problem is commonly recognized in subject literature (Butler, 2010). The concepts whose different layers of meaning are responsible for the formation of bioethical disagreements are referred to in this paper as 'rule concepts'. These concepts define the perspective for evaluating actions of a medical nature.

The way in which rule concepts are essentially understood determines the range of medical outcomes that a patient accepts. Rule concepts stimulate a specific action, i.e. they have the power to cause it. Arguments and reasoning involving these concepts are burdened with convention and tradition, as well as potential future applications. This indicates the performative character of the concepts (Butler, 2010).

The notion of 'performativity' was introduced within the framework of John Austin's classical Speech Acts Theory, which demonstrated a relation-

ship between speaking and acting (Austin, 1993; Derrida, 1992). Furthermore, the issue of 'performativity' of language, including its concepts, has become the subject of in-depth philosophical analysis and discussion, where an important role is played by the bioethical concept of 'cultural gender' (Butler, 2010).

In the most general terms, the performativity of language is understood as a particular feature of concepts, which not only represent reality, but also alter it. By acknowledging the performativity of language, we maintain that it impacts the constitution of reality in a significant way. A subject produces his or her utterance, communication, or argumentation in a particular context (Jakobson, 1976), but they do not have total control over these linguistic acts. This is due to the fact that the concepts used in these acts do not have a meaning that is established once and for all, since language conventions are subject to constant change, imposed by changes in value systems (Butler, 2010). Hence, the acknowledgment of the performative nature of language eliminates the dichotomous distinction between language that is supposed to be a passive representation of reality and reality itself, represented by that language. In this regard, the concepts employed when using language in specific contexts co-create reality.

The issue of the performativity of concepts becomes particularly interesting in situations when they are 'bioethically sensitive', i.e. entangled in arguments in bioethical disagreements. The performativity of those concepts that are entangled in bioethical disagreements explains the fact that such disagreements do arise. Their participants, representing different moral orientations, cannot mutually accept the arguments and are not able to make decisions due to the differences in the meaning of the concepts used in argumentation. The same terms are understood differently, and the way they are understood brings forth incompatible images of the world in the respective parties of the disagreements.

Concretisation of a Moral Dilemma

Bioethical disagreements involve representatives from different backgrounds. It should be observed that, in a sense, the disagreements are of a theoretical and speculative nature, conducted from the perspective of groups with firmly ingrained moral orientations. It must be remembered, however, that such disagreements become an expression of an individual's actual moral dilemma only when he or she must make a choice, a decision leading to irreversible personal consequences of a practical nature. In many

cases, the individual has not previously been a declared supporter of any of the solutions advocated in the disagreement. The individual's previous involvement in the disagreement is usually a speculative one, with no thorough self-reflection on a situation where one would have to make a choice. The transition from a situation where the individual has certain vague ideas about the arguments formulated as part of a bioethical disagreement to a situation of a specific moral dilemma that directly affects them or their loved ones is referred to in this paper as the 'concretisation of a moral dilemma'.

As a result of the concretisation, the subject evolves from a passive participant in a bioethical disagreement to a direct subject of a moral dilemma situation. This changes the ontological status of the subject, who is placed within a completely different grid of relationships with the elements of a situation of moral dilemma. As the direct subject of the moral dilemma, the individual discovers that it is actually he or she, or their loved ones, who have become components of the situation, rather than the other subjects, represented only in general terms.

A situation of moral dilemma that has been concretized differs fundamentally from a situation of bioethical disagreement in the degree of the subject's emotional involvement. Concretisation of a moral dilemma makes the subject aware of the superficiality of earlier, theoretical and speculative, solutions based on analyses of argumentation and the deductive strategy. The problem situation and the necessity of making a decision forces the subject to become more involved, not so much in the logical analysis of the argumentation, but rather in the moral evaluation of the potential actions. In this context, evaluation strategies (quasi-substitutive and prospective coherence) for resolving moral dilemmas, where the subject focuses on the axiological dimension of actions, predominate over argumentative strategies. By applying a different perspective on the problem, which the subject previously knew only theoretically, he or she evaluates which of the obligations postulated in the particular moral orientation are more coherent with their accepted system of beliefs.

Performativity of Concepts and the Problem of Concretising Moral Dilemmas

This section examines various examples that illustrate the authors' findings. The examined situations of moral dilemmas concern cases that strongly engage public attention. The aim is to demonstrate the specific problems concerning the concretisation of a moral dilemma.

In medical practice, one of the issues of bioethical disagreements is abortion. The question of the criteria for the admissibility of this procedure generates controversy not only among bioethicists, philosophers, and doctors; it has also become a focus of the media, involving a significant proportion of the public. This case is a representative example of a bioethical disagreement where a moral dilemma arises because different moral orientations are accepted by different groups of people. As regards the accepted belief systems, supporters of the pro-life moral orientation (Ślipko et al., 2010) acknowledge vastly different kinds of obligations than supporters of the pro-choice orientation (Hołówka, 2001; Różyńska, 2008; Singer, 2007; Środa, 2009). The problem lies in the fact that within these opposing orientations, the term 'abortion' is assigned entirely different meanings.

As far as the term 'abortion' is concerned, Judith Butler notes that for pro-life activists the term includes a certain element of 'obscenity' (Butler, 2010). Although the term 'abortion' refers to a medical procedure which consists of a certain sequence of actions, its meaning is interpreted by pro-life and pro-choice advocates quite differently. For these groups, the layers of meaning of the term differ to an extent that not only makes it impossible to reach any consensus in a bioethical disagreement, but also excludes the validity of any argumentation that would be accepted by the opposing party. This is clearly evident in the application of the deductive strategy to resolve this moral dilemma by trying to reduce the opponents' views to a contradiction. As stated previously, the deductive strategy follows the general formula below:

$$(\mathrm{BF} \wedge \mathrm{MO} \rightarrow \mathrm{C}) \wedge (\mathrm{BF} \wedge \mathrm{MO} \rightarrow \neg\mathrm{C}) \rightarrow \neg\mathrm{MO} \vee \neg\mathrm{BF}$$

Let us assume that we accept the (BF ∧ MO) system, the consequence of which is sentence C that promotes respect for human life. At the same time, we acknowledge that abortion is acceptable in special cases, such as pregnancy as a consequence of rape. For an opponent of abortion, consent to the admissibility of such a procedure, regardless of any additional reasons (e.g. rape, endangered life of the mother or foetal malformation) will entail sentence non-C. On the basis of the above model, the proponent of the pro-life movement will, therefore, argue in favour of eliminating the contradictions present in the BF and MO systems. The system as a whole cannot, in their view, at the same time contain claims of respect for life and a lack of the same respect inherent in the consent to abortion.

It should be noted that in this case the disagreement does not actually concern the course of the argumentation, but rather the choice between the

layers of meaning of the term 'abortion'. The difference is of a semantic nature. Representatives of the pro-choice movement accept that the subject of abortion is not a human being, but rather a human foetus, as a human being is not formed before the end of organogenesis. This is seen differently by the pro-life supporters. As a result, the opponents, while agreeing on the details of the procedure, differ in the assessment of what is basically the subject of the procedure. Therefore, the pro-life advocates' argumentation, although it follows a deductive scheme, cannot be accepted by a pro-choice advocate.

The bioethical disagreement over the presented situation of moral dilemma, i.e. performing an abortion, is a good example of a theoretical and speculative disagreement seen from the perspective of groups representing different moral orientations. This disagreement becomes an expression of a real moral dilemma for a particular individual only when they are faced with the need to choose and make decisions with practical personal consequences. This is when the moral dilemma becomes concrete and the individual is put in a completely new ontological situation. The individual changes his or her approach to the problem, which he or she previously knew in theory only, and by doing so, he or she evaluates which of the obligations postulated within different moral orientations are more coherent with their accepted system of beliefs. However, to do this, the individual has to decide which of the layers of meaning of the term 'abortion' is the most consistent with their preferred system of beliefs. Hence, he or she is, in fact, implementing the strategy of prospective coherence.

A similar situation concerns the bioethical disagreement over euthanasia. From the perspective of medical ethics, the term can be understood as bringing relief from suffering (Naczelna Izba Lekarska, 2003), but from another perspective, for example the precepts of religion, it is unacceptable to assist a patient in committing suicide. Subsequently, there are different layers of meaning of the term 'euthanasia'. Each option is a choice between opposing visions of the world. It should be noted that the outcome, whatever it may be, is evaluated from the point of view of these opposing visions of the world as doing good. One of them sees assistance in and consent to euthanasia as a good deed that relieves an individual from suffering. By contrast, the opposing orientation sees a refusal to perform euthanasia as a good deed, because it prevents a bad deed from being committed.

In analysing the solutions to the moral dilemma of performing euthanasia, it is necessary, as in the previous case, to distinguish between the theoretical and speculative layer of a bioethical disagreement and the situation of moral dilemma faced by a specific patient or their relatives who

have to make the decision to perform euthanasia. It can be assumed that in the area of a theoretical and speculative disagreement, the nature of a certain part of the formulated arguments is that of an attempt to reduce the opponents' claims to contradiction. However, the situation of the moral dilemma of euthanasia does, in fact, always involve a specific patient and/or their family.

The patient's moral dilemma regarding the performance of euthanasia can only be resolved if he or she remains conscious. The solution they reach may, obviously, be incompatible with the moral orientation of their relatives. However, the most controversial situations are those where euthanasia is to be decided on by the relatives of a patient, who, due to his or her lack of consciousness, cannot make the decision on their own. In this case, it seems that the situation of moral dilemma is resolved by using a quasi-substitute strategy, i.e. the patient's loved ones take into account his or her belief system and moral orientation, even if they do not share them. The patient's presumed wishes then become an essential determinant in the process of formulating decision-making rules by his or her relatives.

The analyses above exemplify common situations of bioethical disagreement, where solutions of patients' specific moral dilemmas in concrete situations are achieved using one of the identified evaluation strategies (i.e. quasi-substitute or prospective coherence). However, in the context of the authors' findings, it is also important to discuss in more detail those situations of moral dilemma where evaluation strategies are not applicable.

The Limits of Evaluative Strategies

The aim of this section is to discuss those features of situations of moral dilemma that make strategies of the evaluation type (EV) inapplicable, as well as situations where the solution of the dilemma requires a revision of the belief system. However, it must be stressed that the actual procedure for revising the actual belief system is not a subject of the present analysis due to the complexity of the topic.

In the authors' opinion, organ transplantation is a field that provides good examples of situations of moral dilemma that cannot be resolved using evaluation strategies. Medical practice related to decision-making procedures concerning transplantation arouses a great interest among health professionals, bioethicists, and the public alike. There are many aspects to the bioethical disagreement over organ transplantation. Nonetheless, the ensuing discussion focuses on general findings, not limiting the reflections

to any particular transplantation procedure, even though a more in-depth analysis would certainly be recommended to distinguish such procedures in terms of the degree of dysfunction, the patient's quality of life, and the rate of survival, as well as the risk of failure of a procedure.

As in the previous examples, the validity of distinguishing between two aspects of the moral dilemma associated with transplantation procedures is claimed. In the first case, a bioethical disagreement that is speculative and theoretical is considered, conducted by advocates of different moral orientations. The second case involves specific subjects who are faced with real moral dilemmas that concern them directly, and who are in a specific situation where they must make a choice to generate unequivocal decision-making rules. The authors' opinion is that in the case of a situation of moral dilemma associated with the transplantation procedure, it is not possible to generate such rules without first revising one's belief system. In other words, EV strategies are not sufficient to resolve the particular type of situation of moral dilemma.

What is, therefore, the difference between a transplantation-related situation of moral dilemma and other situations, which can be solved using EV strategies?

The fundamental difference between the examples discussed previously and moral dilemmas concerning transplantation is that in the process of concretising the latter, the individual is not the only direct subject of the dilemma due to the fact that the outcome of the concretisation of this dilemma creates two dimensions, i.e. the moral dilemma of the recipient and that of the donor. These two dimensions of the moral dilemma constitute different ontological statuses for both the direct subjects of the dilemma. In addition, each of the two dimensions of the moral dilemma differs from the moral dilemma considered on the basis of a speculative and theoretical bioethical disagreement. The differences concern both the degree of emotional involvement and the meanings of the rule concepts of the moral dilemma in question. Such terms as 'risk of transplant failure', 'quality of life', and 'payment for transplanted organs', as well as issues concerning the advancement of pre-implantation genetic therapies, and the so-called 'liberal eugenics' are only a few selected examples illustrating the semantic differences between the concepts within both the dimensions. The performative nature of these concepts leads to the constitution of different views of the world on the part of the direct subjects of the dilemma. In this context, the possibility of using one of the previously distinguished evaluation strategies to resolve the moral dilemma of transplantation procedures is analysed below.

Let us assume that the direct subjects of a certain moral dilemma share the relevant meanings of concepts. For a uniform system of beliefs, applying the strategy of prospective coherence may be then considered. If the direct subjects of the moral dilemma share a belief system, they can both choose the A-sentence, which they consider the most consistent with their accepted belief system. However, in the case of the discussed transplantation procedures, the process of concretising the moral dilemma leads to the two dimensions that differ in the meaning of their key concepts. Subsequently, it is not possible to identify a sentence determining an obligation that would meet the condition of maintaining the greatest coherence with the belief system of both the donor and the recipient. An obligation indicated on the basis of one of the belief systems as being the most coherent with that system would probably raise objections from subject representing the other dimension of the situation of moral dilemma. An attempt to choose one of the alternative solutions would require a revision of the belief system or a revision of the moral orientation of the person representing the other dimension of the moral dilemma.

The effectiveness of a quasi-substitution strategy in resolving this dilemma also seems doubtful. As stated previously, in this strategy, an individual who is the direct subject of the moral dilemma performs a quasi-substitution of elements of the belief system or moral orientation of his or her loved ones, although they are not fully convinced of these solutions of the dilemma. The subject does so only because of his closeness to the people for whom it is important to adopt specific solutions for the moral dilemma. But if those transplantation procedures where the recipient and the donor are connected emotionally are eliminated from the considerations, it is rather difficult to rely on the assumption that the strategy of quasi-substitution can be applied effectively. Resolving a moral dilemma in such a situation requires the subject's much stronger emotional involvement in the other dimension of the dilemma, i.e. in the situation of the other subject of the dilemma. However, if such a moral involvement is not possible from the outset, a revision of the belief system or a revision of the moral orientation accepted so far are undoubtedly required.

Conclusion

The problem of making decisions in the field of medical practice has been the subject of many studies. Still, the issue is usually considered in literature in the context of decision-making procedures concerning quali-

fied health professionals with specific scientific knowledge, based on EBM guidelines. The decision-making processes on the part of patients are considered less frequently. Yet, the specific nature of the processes in question is completely different from that of the decision-making performed by doctors, diagnosticians, nurses, and other broadly understood health professionals. What makes these processes different is, above all, the fact that patients' decisions are to a much lesser extent, if at all, based on scientific knowledge. This lack of knowledge, concerning not only the effectiveness of the therapy or its risk, but above all, the scientific methods of justifying the claims that actually determine the effectiveness or risk of the therapy, means that patients' decisions are based to a greater extent on belief systems predominated by ideological, cultural or religious aspects. Consequently, the decision-making process is significantly slowed down by moral dilemmas arising precisely in the area of cultural beliefs. Regardless of the weight of the dilemmas, patients must resolve them as quickly as possible. Therefore, understanding patients' decisions requires the knowledge of how to resolve moral dilemmas. It is precisely this issue that is at the heart of the analyses presented in this paper. These are based on the simplest – and thus easiest to analyse – examples, where the situations of moral dilemma can be well understood, and there is no doubt as to the existence of such dilemmas, or their social importance.

In the paper, the authors maintaine the thesis that attempts to resolve a situation of moral dilemma are made, first and foremost, using strategies that take into account the subject's specific epistemic economy. In the first place, the patient tries to resolve situations of moral dilemmas on the basis of an accepted system of beliefs and accepted moral orientation. This is the group of strategies of the NRB type, where one can distinguish between the *reductio ad absurdum* strategy and two evaluation strategies. The paper analyses situations where these strategies may prove effective, as well as situations where they fail and where the solution to the moral dilemma must be addressed by revising the accepted system of beliefs.

The authors not consider the classification of the strategies proposed herein to be exhaustive. It is quite possible that in some situations of moral dilemma hybrid forms of NRB strategies would be applicable, combining the types of strategies identified in this paper. It is also possible that further analyses will expand the proposed typology. Moreover, the presented findings may provide a starting point for further studies of much more complex moral dilemma situations experienced by patients.

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