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Author(s)	Rose, David Edward
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Debts and Duties of Patients Who Benefit from Medical Research with Reference to Arthroplasty

David Edward Rose

Newcastle University

Abstract

The following article concerns the ethics of the treatment of cadavers and the duty that some agents may have with respect to the furtherance of knowledge via medical research. According to the argument which follows, a patient who benefits from medical treatment has an imperfect (or general) duty to contribute to the furtherance of medical knowledge and, in the specific case of treatment, a perfect (or defined) duty to allow one's body to be the object of research which will contribute to that technique or intervention. The intention is to open a discussion which may lead to various applications of consent and recognitions of related duties being applied to the acceptance of joint replacements and, eventually, other interventions. The decision to begin with arthroplasty is due to the felt need to improve joint replacement prostheses which currently stands at more or less 150,000 interventions a year and 30 to 40,000 revisions per year. With an ageing population, the frequency of such interventions will only increase. Research on cadavers is required in both successful and failed replacements in order to improve the technology of artificial joints to achieve the non-controversial medical goals of alleviating suffering and restoring function to a patient. At present the objects of research are mostly the failed joints which are then revised and not the successful joints leading to a skewed data set for the improvement of such joints. The argument, though, may have wider appeal.

Key words: patient duties, medical research ethics, Kant, arthroplasty

Introduction

Patients who undergo prosthetic replacements and revisions benefit directly from embodied knowledge, practice and technology which has been improved by medical research. There is an urgent need to improve joint replacement prostheses which currently stand at approximately 150,000 hip and knee joint replacements and 20-30,000 revisions annually in the UK. (Ollivere, Wimhurst, Clark, & Donell, 2012) The incidence of such continues to rise inexorably consequent upon higher functional demand and an older population and

is predicted to increase by 40% (in the USA) in the next thirty years. (Birrell, Johnell, & Silman, 1999) Research on cadavers is required in both successful and failed replacements in order to improve the technology of artificial joints to achieve the non-controversial medical goals of alleviating suffering and restoring function to a patient. At present, the objects of research are mostly the failed joints which are then revised and not the successful joints leading to a skewed data set. A patient who benefits from medical treatment has a broad duty to contribute to the future research and, in the specific case of joint replacement, a defined duty to allow one's body to be the object of research. The duty can be met by consenting to research on his or her body after death.

1 I would like to acknowledge the contribution of Professor David Deehan, the members of the philosophy unit at Newcastle University and the anonymous referees in improving this paper.

The Use of Cadavers

The difficulty of engaging in medical research on cadavers is constituted by the central tenet of all human societies that the dead are moral objects deserving of respect. There are, to which one shall presently turn, obvious cases where such respect can be overridden by other factors or moral commitments. The respect afforded to the body in virtue of being a dead person is negotiable, but reasons have to be offered to justify the taking of body parts or the use of the cadaver as an object which, all things being equal, generally constitutes a violation of this respect.

Obviously religious reasons to respect the dead are the most immediate, but these are no longer homogeneous in a plural society and cultural attitudes are susceptible to change. However, there are also good moral reasons for affording respect to cadavers beyond the traditional cultural attitudes of a society and, if an argument for the broader use of cadavers in medical research is to be mounted, it must appeal to the more robust and universal reasons which appeal to all agents, no matter their religious, traditional or background values.² The reasons for affording respect to cadavers is grounded in the moral relationship of care and respect between human beings -- the body is (or represents), in life, identity and, after death, the body remains the focus of care and value -- and so one can offer good legal reasons for respecting human cadavers. One's expressed wishes prior to death are to be executed by those in whom one has placed trust and these persons protect the cadaver from arbitrary interference by the state or powerful institutions. (Barilan, 2006)

Of course, there are obvious cases where the executor of the cadaver's will may be overruled by institutions: the need for forensic autopsy in the case of suspected crime, for example. Skegg seems to suggest that there are resources in New Zealand law for the use of cadavers in broad, meliorist practices. (Skegg, 2001) Yet, such a move would be controversial undermining trust in institutions as the Alder Hey case did in the UK. (Davies, 2007) Such an undemocratic and problematic move is just not necessary in arthroplasty because Skegg's argument generally concerns infant cadavers who are

unable to give consent whereas here we are dealing with the patients offering consent and ensuring that their will is respected by relatives in charge of the disposal of the body. Individual consent alleviates the problem of trust in large institutions on the part of the public. If an argument for the broader use of cadavers in medical research is to be mounted, it must appeal to the more robust, universal reasons which appeal to all agents, no matter their religious, traditional or background values so that consent to participation in research can be procured.

More significantly, there are obvious medical instances when the violation of the cadaver's integrity is morally justified to most reasonable sections of society.³ The paradigmatic instance when the violation of the cadaver's integrity can be morally justified to most reasonable sections of society is to donate an organ to save a life. (Diethelm, 1990; Thomsma, 1992) If the donor (or the family) were to be asked to explain the reasons for consenting, one would assume the most immediate response would be an appeal to consequential welfarism: when we take an organ from a cadaver to donate to another, there are "significant life enhancements" that can be measured and are observable. The act of donation in this case results in measurably greater welfare for the recipient than the distress caused to those who are aware of the violation of the physical integrity of the cadaver. The value of the cadaver is weighed against the value of very much improving another person's life. Welfarism is not the only justification (or even the best), but the process of engaging the practical reasoning of the patient and his or her family in order to procure their consent to the future intervention is most immediately expressed in terms of welfarism. It is important to note here that I am not proposing that organ donation is only justified by an appeal to welfarism. Whether one is Kantian and believe the right to physical integrity to be inalienable or Hegelian and see it as a constructed institution, consent is a required condition for intervention (it transforms a violation into a legitimate action). The claim is more concerned with how the practical reasoning of the patient and his or her family would in most probability be convinced and hence how we can rationally and legitimately elicit consent. The argument offered is a tool for medical practitioners to elicit (or, more strongly, assume) consent from reasonable patients by engaging with their rational motivational sets.

2 Legislation and policy will of course take into account individual preferences, arbitrary choices and comprehensive backgrounds (whether religious or not) in order to build an overlapping consensus agreement on the treatment and use of cadavers. Here the aim is merely to show that moral reasons can be given to a rational agent that justify the idea of a debt to medical research that can be fulfilled by a duty. The consent required by the duty will also include an opt-out clause as discussed below.

3 Agents whose moral commitments are driven by deeper (usually) religious reasons are not "reasonable" in the sense required here. Such agents will be tolerated and respected by most communities and their liberty to live by their beliefs will not be violated in a liberal society. The minimum requirement to respect such liberty is the presence of an opt-out clause in the tacit consent agreement proposed below.

The Use of Cadavers in Medical Research

Here, though, the argument for the use of cadavers is for the purposes of furthering medical knowledge and improving technology, so the recipient of a prosthetic joint should agree that, after his or her death that an investigation into the joint and his or her body can be carried out to improve both technology and practice for future recipients. It is not possible to use a consequential welfarist argument such that all agents ought to leave their bodies to medical research. It might be empirically true (although it would have to be proved!) that if all bodies became the property of the medical profession at the point of death, more and better research could be carried out that would increase medical knowledge and, therefore, benefit present and future generations. It is not obvious to the particular individual that his or her personal action would result in significant life enhancements, even if he or she were able to admit that consequent general blanket research may well do so. For those consenting to the use of theirs or other bodies, the moral value of the cadaver is not so easily negated in this case because the positive consequences are not immediate, can very easily fail, or the research could just be a waste of time or be abused by the institution.⁴ Trust that the moral action contrary to one's immediate wishes is worthwhile requires either robust trust in the institution or evidence of "making a difference." Colloquially, one donates an organ to save a particular life, not to further some abstract, vaguely defined goal and the evidence of making just such a difference generates the trust required. It is easier to procure rational consent for organ donation than participation in medical research (even if more costly to the individual) due to this appeal to "making a difference" and its force as an element in one's subjective motivational set.

In order to procure consent from arthroplastic patients to use their cadavers, one cannot appeal to the welfarist considerations of furthering medical knowledge or improving technology. It is contentious whether such blanket research would result in significant life enhancements as the value of medical research is based on a general promise of an increase in welfare, rather than an observable outcome, and such a promise is a too weak a justification to overcome the moral commitment to respect cadavers. Moreover, such a general moral commitment to medical research politically rests on

4 One knows it would be a good to donate to a children's charity in general, but this would not be as binding as helping the particular, distressed child we encounter, due to the force of appeal to our subjective motivational set. One immediately understands the impact of one's possible actions.

trust for large institutions, private organizations and government that is obstructed by the shadow of a "slippery slope." The simple objection asks what else such a welfarist approach could feasibly justify. Moral principles such as the intrinsic value of human life and respect for the dead in a secular liberal society serve as very good moral boundaries for the protection of the integrity of individuals against the abuse of power by large institutions and governments. Such boundaries need to be respected in order for trust in large institutions to be maintained. The possibility of asking for consent to investigate the cadavers of joint replacement patients after their deaths requires a simple moral argument that would seek the agreement of rational agents such that they acknowledge it is a duty which can override the social and moral commitment to respecting the integrity of bodies.

So, in order to consider the possibility of asking for consent to investigate the cadavers of joint replacement patients after their deaths, a simple moral argument needs to be generated that would seek the agreement of rational agents such that they believe it is a duty which can override the social and moral commitment to respecting the integrity of bodies. Consent of the patient overcomes social and religious attitudes (which may forbid the violations of cadavers) as well as maintaining trust in large institutions.

Viable consent here takes two forms. The ideal situation is that patient when receiving a replacement joint gives consent for research after death (required consent) and this is reinforced by familial consent both at the time and after death. Such consent would present the strongest case when considering legal and policy issues of such a request. Such consent can be explicit (a signed document) or it can be tacit, as long as the patient (and family) are informed at the time of the original operation that by agreeing to the operation they agree to research on the cadaver. Presumed consent is not viable simply because we live in a plural society and so the assumption that the patient in receiving the replacement commits to undergoing research after death does not respect the liberty of the individual to do what they wish with their own bodies. There must be, if not a written agreement to commit to medical research, an option for the patient to opt-out which is made explicitly at the time. So, either the patient on receipt of the joint agrees explicitly (in writing) that they are prepared for their body to be an object of research or they are made aware that they must explicitly express that their body must not be used for research after their death.⁵

5 The present paper does not explicitly argue which form of consent should be the norm and, one feels, it would depend on the actual practices of organ and blood donor of the particular country where the policy is enacted. My

The Argument

The sorts of moral reasons needed to motivate an individual to donate their body to research can be neither welfarist (a consequential benefit to another person or persons) nor can it, when one considers publicly funded health systems, be based on legalistic arguments about state ownership of replacement parts. The former argument, as has been said above, suffers from the “slippery slope” worry and fails to respect persons as moral agents. The latter argument could at best justify the recovery of the body part, but no further violation of the cadaver for the benefit of research which is the overarching aim of such interventions.⁶ The types of moral reasons that need to be offered to a patient in receipt of a replacement joint are Kantian in flavour and make reference to the debts and subsequent duties of the patient.

Kantianism, as a deontological theory, concerns the type of intentions agents act upon. (Kant, 2012)⁷ Actions are either morally forbidden (lying), morally required (keeping one’s promises) or simply amoral and permissible (playing football in the park). The taxonomy of action is due to the intentions that bring them about. In this case one is seeking reasons that require the recipient of medical intervention to commit to the goals of medical research. The second point to make is that Kantianism as a moral theory is committed to the rational agent and hence an intrinsic respect of the person and, one feels, by extension the physical integrity of the body. Respect for the body is kept central to the argument and not sidelined or negated as it is in the welfarist argument. Third, the respect for the agent as a rational being means that the reasons offered make an appeal to his or her rationality and hence, if applicable, form the basis of a consensual agreement such that, if one acknowledges the validity of the reason, the agent could deny his or her duty to medical research only at the cost of his or her own rationality (which is permissible so long as it does not directly harm others).

One possible interpretative objection to the reliance on Kant may be his insistence that the use of body material (teeth) is not permissible for the moral agent in the second part of his *Metaphysics of Morals*. (Kant, 1996: 177) In response, it is worth noting that Kant

personal feeling is that legally the former is more robust, but that practically the latter is preferable, but an argument is required to justify these intuitions. Such an argument, due to the exact focus of the present piece, is not here forthcoming for which I apologize.

6 In a longer article, I would have given better explanations of these rather dismissive stances.

7 See Korsgaard (1996), O’Neill (1990) and Wood (1990).

has no problem with vivisection because the animals are not autonomous nor amputation to serve the ends of self-preservation. One would assume that Kant would agree a corpse is not autonomous and hence the sorts of mutilation “of oneself” are of one’s rational being embodied in a body, not one’s corpse. If Kant does not then there are religious echoes corrupting the purity of his assertions and he needs to argue for these.

Morally forbidden actions are those motivated by reasons which involve the agent using other persons as tools for his or her purposes and are identified when a reason for action, if applicable to all agents at all times and in all places, involves a contradiction. To discern such contradictions, the agent must not act on reasons which violate the categorical imperative: “I ought never to proceed except in such a way *that I could also will that my maxim should become a universal law.*” (Kant, 2012: 4:402) Kant distinguishes between two types of contradiction: a contradiction in conception (whereby your reason for action cannot be thought of as a universal law without contradiction) and a contradiction in will (whereby your reason for action can be thought of as a universal law, but not imposed as a universal law without making one’s purpose unattainable). These two contradictions are set as tests for the agent: articulate your reason for action as a universal law covering general behaviour (as a *maxim*) and see whether it is coherent. If it fails the first test, it fails the second. If one, for example, makes a false promise in order to get out of trouble or to alleviate hardship, the agent is aware of what promising involves but acting contrary to the meaning of his utterance when he says “I promise to pay back my debt” because he knows he will not be able to do so. In essence, he is promising with his fingers crossed behind his back and thus not promising at all. And his action will only succeed if he makes himself an exception to the rule of promising: everyone ought to keep promises except me in this situation, thus it cannot be a universal law because for him to achieve what he wants there has to be at least one exception (him). Such contradictions in the meaning of actions, as such, lead to specific, perfect duties such as “Don’t break promises” and “Don’t commit suicide”, for example. (Kant, 2012: 4:422-423)

It is possible, though, that some maxims do not exhibit a conceptual contradiction, but are still ruled out by the demands of morality. The argument which one finds in Kant which is most appropriate to the current discussion is the broad duty to help others. An agent here could very well will the maxim not to help others at all and there is nothing forbidden in such action. Kant discusses an agent:

... who is prospering while he sees that others have to struggle with great hardships (whom he

could just as well help), thinks: what's it to me? May everyone be as happy as heaven wills, or as he can make himself, I shall take nothing away from him, not even envy him; I just do not feel like contributing anything to his well-being, or his assistance in need! (Kant, 2012: 4:421)

However, if such an agent imagines what such a world would be like where no one helped others, he would quickly realize that he would be unable to take for granted his own well-being, as Kant continues:

For a will resolved upon this [course of action] would conflict with itself, as many cases can yet come to pass in which one needs the love and compassion of others, and in which, by such a law of nature sprung from his own will, he would rob himself of all hope of the assistance he wishes for himself. (Kant, 2012: 4:423)

And so, the agent expects others to help him but not to help them in return and such a project of action treats others in such a way as to make oneself a special case (like the promising example above). Such an agent knows that his future happiness is not a gift from Heaven, but due to the cooperation and beneficence of others. People depend on other people and to deny helping others in a general way, is to not fulfil one's moral duty.

In the case of medical research, the knowledge which is produced, transmitted, and utilized by the medical tradition is a benefit to agents. At some point in our lives, we will all benefit from such knowledge and expertise. The agent who states that he will not help others but expects to be helped is well aware that his welfare depends on treating others as tools and his own life as a special exception. If one is to benefit from medical research, then one ought to contribute to medical research; otherwise one is in the same position of the agent who does not will to help others. If all agents denied to contribute to medical research and knowledge, then there would be no medical knowledge from which to benefit.

In most cases, the duty to contribute to medical research is an imperfect one: there is no strict course of action prescribed (as in the case of "Don't break promises" which is pretty unequivocal). One can contribute to medical research through donations, volunteering, choosing a career in the medical profession, perhaps even paying one's taxes. As long as one admits there is an imperfect duty for all agents to contribute to the furtherance of medical knowledge and techniques, then the agent recognizes it is rational for him or her to act according to such a duty.

And this is where we make a second step in the

argument. For a patient in general, there is a broad, imperfect duty to contribute to medical research. We all, as recipients of the benefit of medical knowledge, have such a duty. Harris seeks to offer a general duty to contribute to scientific research by rejecting those moral reasons which seek to deny it. (Harris, 2005) The current argument seeks to offer a moral reason to contribute, but does not fall foul of the objection that Harris is only able to offer a general requirement with no specific action entailed. (Shapshay & Pimple, 2007) In the specific case of arthroplasty, there seems to be a very specific way in which such a moral contribution can be made. Of course, a particular patient or relatives of a particular patient may recognize the moral debt but argue to fulfil it in another way: through becoming a medical professional, donating a large amount of money, agreeing to volunteer and so on. However, there is some aesthetic symmetry to the agreement to participate in research which overcomes the indeterminate nature of imperfect duties. It also appeals to the practical reason of the individual to generate his or her consent in a way that requiring an indeterminate action does not and it more likely to be met with agreement. The receipt of the artificial joint is to benefit from a specific piece of knowledge, technology and expertise. One receives the benefits of medical knowledge and expertise and therefore has a debt to contribute to its furtherance. It is based on a rational obligation. Yet, if one denies a debt there is an obvious contradiction. I will benefit from medical research because it prolongs my life, restores function or alleviates suffering, but I do so without contributing to medical research. If everyone, though, who benefits from medical research refuses to contribute to medical research, then there will be no medical research and my purpose would be frustrated. Here I have benefitted from a particular piece of technology which my body is now in an ideal position to improve for future recipients, just as other agents have improved it for me at this time. I have the obligation, on acceptance of this embodied knowledge, to allow tests to be carried out on the joint during my lifetime and beyond which could reasonably contribute to the improvement in techniques, knowledge and technology. Although, the requirement may seem quite radical implying that anyone who has had specific medical treatment should allow tests related to that specific treatment to be carried out during their lifetime, it would require in most cases no more than what patients actually do: allow a medical profession to monitor the effectiveness of a treatment and ensure that the cure is permanent. To not pay this debt by fulfilling my duty is to make of myself a special case.

If the agent refuses to consent to contribute to medical research, the agents' wants and needs are still satisfied but at the cost of using others as tools for his own purposes and making himself an exception to a rule

from which he benefits. Making oneself a special case demands justification. If we all sit in a traffic jam on the motorway, we realize that there is an obligation to leave the hard shoulder free. Such action, although not in our individual and private interest (we would reach home much more quickly if we merely drove down the hard shoulder past all the queueing cars), is rational because we know that the hard shoulder is required for emergency situations. Should one of us use the hard shoulder no damage would be done, but if we all used it, it would quickly become just another queue of traffic. And, if in that case we wished to benefit because we found ourselves in trouble, we could not. Our action here rationally involves the recognition that if everyone acted similarly, we would have to take the responsibility of frustrating our own aims and motives (to be a possible recipient of emergency assistance).

Of course, if we see a car zooming down the hard shoulder, we demand justification. Is it a police car or an ambulance? Is the passenger pregnant and about to give birth? There are cases to make oneself a special exception and so with the case of consent to donate one's body to specific research; for example, if one has strong religious beliefs.⁸ However, the onus is perhaps on such agents to contribute to medical research but in an alternative way. Given, though, that there will be quite acceptable cases where the donation of the cadaver to research will be vetoed by the particular agent, consent cannot in this case be presumed, it must be avowed consent whether that be explicit or tacit (with a fully explained opt-out clause).

The advantages of this approach are myriad. The onus is now on the patient to explain why he or she will not contribute to medical research rather than the doctor to persuade the patient to contribute. Significantly, by framing the obligation as a moral duty, the patient has a present motivation all things being equal to consent to contribute because it appeals to his or her rationality: just as, one ought to wear a seatbelt to protect oneself from harm in the event of a crash, one ought to contribute to medical research to restore function or alleviate suffering in the event of having to benefit from medical knowledge. Moreover, the "one" who is to contribute is a universal agent and so the reason applies equally to the patient and their immediate family.

As long as one admits there is an imperfect duty for all agents to contribute to the furtherance of medical knowledge and techniques, then the agent recognizes it is rational for him or her to act according to such

a duty. The duty to contribute to medical research is an imperfect one: there is no strict course of action prescribed. One may argue that one can contribute through donations, volunteering, choosing a career in the medical profession, perhaps even paying one's taxes. The requirement of broad duties, given its non-specificity, runs two risks: (1), it is too demanding and does not even require consent; and, (2), it is too weak and is easily fulfilled by tax contributions.

(1) Evans puts forward the argument that patients who benefit from medical expertise have an obligation to allow their treatment to form part of systematic research and that such participation does not require consent. (Evans, 2004) But, he has in mind small obligations and harms such as attending clinics and having blood tests. The non-voluntarist nature of his obligation is mildly problematic in such cases, but most policy makers would balk at the demand for patients to undergo serious harms, to take untested drugs and to undergo invasive procedures. (Perna, 2006) Politically, it would be unreasonable to expect agents with comprehensive commitments concerning the value of their bodies, the use of certain chemicals, the spiritual cleanliness of certain animal derivatives, to be expected without consent to participate in research that may contradict such beliefs. Evans does not agree with this and he uses the example of the Maori who perceive "large body sizes" as admirable being urged to comply with patient duties to not be obese. (Evans, 2007) One wonders whether the example of a Muslim being urged to comply with tests which uses material derived from pigs would be as simple and why there is a difference, if there is one. Consent, in a plural, liberal democracy, remains the required legitimization of the patients' contribution to medical research

(2) Certain patients already donate their bodies to both research and teaching and many more make them available for donation in the case of transplantation, but these are supererogatory actions. Normal agents fulfil their duty through the payment of tax. Putting aside the problem of private health care, the argument is a non-starter anyway. The general undercurrent of the discussion in these pages, though, concerns the very relationship between those, including patients, who cooperate in the National Health Service specifically and health systems in general. There is a required sea change in both the patients' expectations, medical practitioners' ability to communicate and governmental policy concerning the very nature or ontology of health organizations. The current paper lays the foundation for the patients' realization of their ability and requirement to contribute, the doctors' and nurses' ability to communicate what would be the right thing to do and also the government's needs to think again about the nature of the Health Service. The real problem seems to

⁸ Personally, I feel any religious system which allows one to receive the replacement but not contribute to research has an awful lot of explaining to do. Jehovah's Witnesses, for example, are not required to give blood because they do not wish to receive a transfusion.

reside in the belief that as one pays tax, one has a “right” to healthcare; that is, the metaphysical error of regarding the NHS as its title suggest as a “service.” One pays tax to fund the traffic system of roads and therefore has a “right” to use, but the payment of tax does not exhaust one’s duties: there are still the duties of respecting others, helping others and obeying the regulations. It is unreasonable, for example, to claim that the payment of one’s taxes permits one to use the hard shoulder because one has paid for it. The traffic system is not a “service” but a cooperation which we -- as a community -- see as rational and fund through taxation. The amount one pays in tax is never equivalent to the service you actually receive, if one were to pursue such an argument, one perhaps ought to consider the economics of post-privatization utilities.

Once we have the ball rolling, though, one could reasonably ask why the duty to cooperate does not include other areas of research: people with hereditary lung diseases would have a duty to participate in lung research, children would have a duty to participate in paediatric research and elderly people with cognitive deficits would have a duty to participate in Alzheimer and dementia research. And this is where we make a second step in the argument. For a patient in general, there is a broad, imperfect duty to contribute to medical research and this can be satisfied in a number of ways. We all, as recipients of the benefit of medical knowledge, have such a duty. However, in the specific case of arthroplasty, there seems to be a very specific way in which such a moral contribution can be made. The receipt of the artificial joint is to benefit from a specific piece of knowledge, technology and expertise and the patient is in a very explicable position to improve this defined practice. The doctor then can show the causal connection quite easily in this case thus maintaining trust in the institution. In the other examples, the execution of one’s duty is (presently) ill-defined because one is researching the ailment or property of the patient (which one did not receive through treatment) but the treatment through the technology and knowledge.⁹

9 The adverb “presently” here carries much weight. In the case of lung disease, for example, once a particular and specific piece of technology (pharmaceutical, transplant, artificial part for example) has been used, then the same argument can be applied. What the paragraph is at pains to stress is that being a child (or old) is not grounds for participation in paediatric (or geriatric) research beyond the normal monitoring and measuring which occurs when one visits for a health check or is cared for.

Conclusion

In a nutshell, the reason why recipients of joint replacements have a moral duty to donate their bodies to further medical research is about duties and debts. One receives the benefits of medical knowledge and expertise and therefore has a debt to contribute to its furtherance. It is based on a rational obligation. If everyone who benefits from medical research refuses to contribute to medical research, then there will be no medical research and the wants of the patient would be frustrated, or if one agent benefits but refuses to contribute, his or her wants are satisfied at the cost of using others as mere tools and making himself or herself an exception to a rule from which he or she benefits. The first part supplies a motivation to contribute, the second a moral justification to contribute to medical knowledge. The duty then, on receipt of medical research, is to contribute to medical research, in some specific cases this will involve an agreed, strict duty.

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