

Judgments of Moral Responsibility in Tissue Donation Cases

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If a person requires a tissue donation in order to survive, many philosophers argue that whatever moral responsibility a biological relative may have to donate to the person in need will be grounded at least partially, if not entirely, in the biological relations the potential donor bears to the recipient. Such views tend to ignore the role played by a potential donor's unique ability to help the person in need and the perceived burden of the donation type in underwriting such judgments. If, for example, a sperm donor is judged to have a significant moral responsibility to donate tissue to a child conceived with his sperm, we argue that such judgments will largely be grounded in the presumed unique ability of the sperm donor to help the child due to the compatibility of his tissues with those of the recipient. In this paper, we report the results of two main studies and three supplementary studies designed to investigate the comparative roles that biological relatedness, unique ability to help, and donation burden play in generating judgments of moral responsibility in tissue donation cases. We found that the primary factor driving individuals' judgments about the moral responsibility of a potential donor to donate tissue to someone in need was the degree to which a donor was in a unique ability to help. We observed no significant role for biological relatedness as such. Biologically related individuals were deemed to have a significant moral responsibility to donate tissue only when they are one of a small number of people who have a relatively unique capacity to help. We also found that people are less inclined to think individuals have a moral responsibility to donate tissue when the donation is more costly to make. We bring these results into dialogue with contemporary disputes concerning the ethics of tissue donation.

Keywords: biological relations, moral responsibility, tissue donation, experimental philosophy

Introduction

What grounds the moral responsibility that biological parents have to donate tissues to their offspring when the offspring require such donations in order to survive? Several philosophers claim that *biological relations* provide at least a partial explanation for judgments of moral responsibility in these cases. According to this perspective, independently of whatever voluntary commitments individuals have made to care for certain children, the mere fact of being biologically related to the children at least partially underwrites a moral responsibility to donate tissue to them when it is needed. Andrew Peach and Stephen Schwarz¹, for example, contend that biological relations fully explain the moral responsibility of parents in such cases, while Edmund Abegg, Nico Kolodny, Mary Lemmons, Jeff McMahan, Edgar Page, and David Velleman² argue that biological relatedness at least partially explains our judgments of moral responsibility. Importantly, contributors to this debate maintain that the biological father has a *special moral reason* or *special moral responsibility* to provide aid that other individuals would not have in the same situation.³ Most also agree that this special moral responsibility can be outweighed by countervailing factors.

¹Peach, A. Abortion and Parental Obligation. *Life and Learning XIV*, Proceedings of the Fourteenth Faculty for Life Conference. 2004; 14(4):4-7; and Schwarz S. The moral question of abortion. Chicago: Loyola University Press; 1990:118.

²Abegg E. The Moral Significance of the Genetic Relation. *Journal of Bioethics*. 1984; 5(2): 134-140; Kolodny, N. Which Relationships Justify Partiality? The Case of Parents and Children. *Philosophy and Public Affairs*. 2010; 38(1) 43-47; Lemmons, M. The True Source of Parental Obligations: Response to Andrew Peach. *Life and Learning XIV*. Proceedings of the Fourteenth Faculty for Life Conference. 2004: 2; McMahan, J. Ethics of Killing: Problems at the Margins of Life. Oxford: Oxford University Press; 2003. Page, E. Parental Rights. *Journal of Applied Philosophy*. 1984; 1(2): 187-189; and Velleman, J. II. The Gift of Life. *Philosophy of Public Affairs*. 2008; 36(3): 147-154.

³Cf. McMahan, J. *Ethics of Killing: Problems at the Margins of Life*. Oxford: Oxford University Press; 2003, pp. 376-378; Beverley, J. (2015). The Ties that Undermine. *Bioethics*. 30(3), pp. 3, 14-15

Jeff McMahan has argued for the importance of biological relatedness by considering tissue donation scenarios such as the following in which biological relations seem a natural explanation for commonsense intuitions⁴:

Sperm Donor: A man voluntarily donates to a sperm bank and absolves himself of any legal responsibility for children conceived with his sperm. Later a woman artificially inseminated with his sperm births a child who requires a bone marrow transplant. She approaches the donor and requests he donate his bone marrow to save the child's life.

In this scenario, the biological father has been released from any legal obligation to care for the child and has no obvious moral responsibility to care for the child. Nevertheless, it may seem plausible that the biological father has a moral responsibility to donate bone marrow to save his biological offspring. Moreover, it may seem plausible the biological father has more of a moral responsibility to provide bone marrow to save his offspring than, say, a complete stranger would. Absent any other explanation for why the biological father should be deemed more morally responsible to provide marrow to his ailing offspring, McMahan suggests the brute biological relation between the two as an attractive explanatory factor.

In a recent *Bioethics* article, John Beverley argues against appealing to biological relations to explain such judgments of moral responsibility.⁵ Following Beverley, we will call the view that biological relatedness fully explains ascriptions of moral responsibility in tissue donation cases the 'Sole Thesis' and the view that they partially explain such ascriptions the 'Partial Thesis.' Beverley contends that an often overlooked feature of scenarios like Sperm Donor—the presumed *unique ability* of the biological father to provide aid to his offspring—

⁴J. McMahan. *Ethics of Killing: Problems at the Margins of Life*. Oxford: Oxford University Press; 2003. p. 226, 375.

⁵Beverley, J. (2015). The Ties that Undermine. *Bioethics*. 30(3).

provides a more appealing explanation. Beverley argues that the biological father is deemed morally responsible for providing bone marrow not because he is biologically related to the child but rather because of the implicit rarity of bone marrow compatibility between the two. To make his case, Beverley appeals to intuitions elicited from a series of tissue donation thought experiments designed to isolate potential influences on judgments of moral responsibility, such as an explicitly expressed consent to care for a child, biological relatedness, and a potential donor's unique ability to help.

Both sides in the dispute about moral responsibility in tissue donation cases frequently rely on what McMahan calls 'spontaneous moral judgments'⁶ elicited in response to concretely described cases. Beverley's reliance has already been noted. Another example is McMahan's appeal to biological relations as what "most of us think" is the explanation of the special moral responsibility the biological father has to aid his offspring.⁷ Similarly, David Velleman claims the importance of biological ties is a matter of "universal common sense".⁸ Moschella motivates her theory of special relationships and obligations by claiming that it accommodates "many commonsense intuitions and practices."⁹ Other appeals to commonsense or widely shared intuitive judgments about parental responsibility and tissue donation cases can be found in Weinberg, Kolodny, Millum, and Rulli.¹⁰ In each instance, theories that accommodate and explain commonsense intuitions are treated as scoring points

⁶Characterization of elicited moral intuitions, generally, as "spontaneous moral judgments" is found in McMahan, J. (2000). *Moral Intuition*. In Hugh LaFollette ed., *Blackwell Guide to Ethical Theory*, Oxford: Blackwell.

⁷J. McMahan. *Ethics of Killing: Problems at the Margins of Life*. Oxford: Oxford University Press; 2003. p. 376.

⁸Velleman, D. (2008). "Persons in Prospect Part II: The Gift of Life" *Philosophy & Public Affairs*. 36(3): p. 256.

⁹Moschella, M. (2014). "Rethinking the Moral Permissibility of Gamete Donation." *Theoretical Medicine and Bioethics*. 35:421-440.

¹⁰Weinberg, R. (2008). "The Moral Complexity of Sperm Donation" *Bioethics*. 22(3): 166-178. Kolodny, N. (2010). "What Relationships Justify Partiality? The Case of Parents and Children". *Philosophy of Public Affairs*. 38(1): 74. Millum, J. (2008). "How Do We Acquire Parental Responsibility?" *Social Theory and Practice*. 34(1): 71-93. Rulli, T. (2014). "Preferring a Genetically-related Child". *Journal of Moral Philosophy*;

against their competitors and theories that rebel against common sense are seen as incurring significant theoretical costs.

McMahan and others, of course, might be wrong in thinking that their own intuitive assessments of concrete cases are widely shared. If it should turn out that patterns of intuitive judgments concerning a variety of cases favor Beverley's theory over the Partial Thesis or the Sole Thesis, we would take this empirical fact to be relevant to the philosophical debate about parental responsibility in tissue donation cases. We do not believe that folk moral judgments should rigidly constrain philosophical theorizing in ethics, but we do believe that significant deviations from commonsense morality place an explanatory burden upon those who would endorse them.

Importantly, none of those who invoke the imprimatur of common sense present any evidence that folk intuitions are in fact on their side. We take up the empirical challenge here of examining folk judgments about tissue donation scenarios in order to see whether such judgments are most commonly driven by biological relations, the factor hypothesized by the Sole and Partial Thesis, or by donors' unique ability to help, as Beverley hypothesizes.

In order for our results to speak directly to the existing debate, we use McMahan's Sperm Donor case as a paradigm tissue donation scenario. In each of our studies, we examined different factors that might give rise to judgments of moral responsibility for donating tissue to save a person's life. Our first study examines the potential influence of the biological relatedness between the potential donor and the person in need, household parenthood relations between donor and recipient, and the donor's gender. We varied the biological relatedness of potential donors and tissue recipients in order to test Beverley's hypothesis that relatedness is not a significant factor. We predicted that making an explicit commitment to care for a child would be a far more significant factor in predicting

individuals' moral responsibility judgments than biological relatedness. We also hypothesized that potential donors who were female might be viewed as having a greater moral responsibility to donate than donors who were male, in light of traditional associations between being female and responsibility for child rearing. We found no significant role for gender or biological relatedness as such but found that participants strongly agreed that biologically related individuals have a moral responsibility to donate tissue only when they were the household parents of the person in need. Furthermore, we found that judgments of biological parents' moral responsibility to aid in tissue donation cases are mediated by these parents' unique ability to help—in particular, by the fact that their tissues are viewed as significantly less likely to be rejected by the recipient than those of biologically unrelated individuals.

Our second study examined the ways that judgments of moral responsibility to donate are affected by biological relatedness, unique ability to help, and how burdensome the tissue donation would be for the donor. We hypothesized that biological relations would not play a role in judgments of moral responsibility in our second study. Following Beverley, we hypothesized that unique ability would provide an adequate explanation of judgments of moral responsibility. Additionally, we hypothesized that tissue donations that were perceived to be more burdensome would result in decreased attributions of a moral responsibility to donate. As expected, more burdensome tissue donation requests led to decreased attributions of moral responsibility. Initially, we appeared to find that both biological relatedness and unique ability independently play a role in judgments of moral responsibility. However, a follow up study confirmed that this finding was due to participants' tacit assumptions about differences in potential donors' unique ability to assist those in need. We

conclude by outlining how our results bear on the philosophical dispute between advocates and opponents of the Sole Thesis and the Partial Thesis.

Study 1

In our first study, we used eight vignettes that describe a four-year-old child who has been diagnosed with leukemia and needs a bone marrow transplant in order to survive. In each case, someone is asked by one of the child's parents to donate bone marrow. The cases varied who the potential donor is. We began with the following version of McMahan's Sperm Donor case, in which the potential donor is biologically related to the child by voluntary gamete donation but has no continuing legal obligation or explicit commitment to care for the child:

1.1: One day, George voluntarily donates sperm at a sperm bank. Before the donation, George signs a document that absolves him of any legal responsibility for any children that may be conceived with his sperm. Later that year, a woman named Laura visits the sperm bank and is artificially inseminated with George's sperm. She eventually gives birth to a child. When the child is four years old, doctors discover that the child has leukemia and needs a bone marrow transplant in order to survive. George is a suitable bone marrow donor. Laura obtains George's contact information from the sperm bank and requests that he donate some of his bone marrow in order to save the child's life.

We constructed the following, analogous case that features an egg donor instead of a sperm donor to see if the donor's gender would make a difference to individuals' judgments about the case:

1.2: One day, Becky voluntarily donates some of her eggs to a tissue donation center. Before the donation, Becky signs a document that absolves her of any legal responsibility for any children that may be conceived with her eggs. Later that year, a woman named Laura visits the tissue donation center where her husband's sperm fertilizes one of Laura's eggs. The fertilized egg is then implanted into Laura's uterus, and she eventually gives birth to a child. When the child is four years old, doctors discover that the child has leukemia and needs a bone marrow transplant in order to survive. Becky is a suitable bone marrow donor. Laura obtains Becky's contact information from the tissue donation center and requests that she donate some of her bone marrow in order to save the child's life.

We hypothesized that because females are traditionally viewed as having stronger obligations to care for children, an egg donor might be viewed as somewhat more likely than a sperm donor to have a responsibility to donate bone marrow.

Participants who read these vignettes were asked either "Who is George?" or "Who is Becky?" as comprehension questions. Each participant was given three choices: Laura's husband/partner, Laura's doctor, or the sperm/egg donor. Participants who did not answer these questions correctly were excluded from subsequent statistical analysis. Each participant was then asked to indicate the extent to which they agreed or disagreed with the following pair of statements about the moral responsibility that the potential donor, George or Becky, bears to the child:

R1. [The potential donor] has a moral responsibility to donate bone marrow
in order to save the child's life.

R2. It would be morally wrong if [the potential donor] did not donate bone marrow to save the child's life.

Participants were asked to select one of the following seven options as their answer for each statement: Completely Disagree, Mostly Disagree, Slightly Disagree, Neither Agree nor Disagree, Slightly Agree, Mostly Agree, and Completely Agree. For purposes of analysis, 'Completely Disagree' was coded as '1,' 'Mostly Disagree' as 2, and so on. We added together the numbers corresponding to participants' answers to R1 and R2 to form a single moral responsibility rating for each vignette.

We contrasted the gamete donor cases above with a pair of cases that involve "normal parents" as potential donors, i.e. household parents who are biologically related to the child in need. Cases 1.3 and 1.4 each begin with the following narrative:

George and Laura would like to conceive a child but have had difficulties getting pregnant. One day, they visit a fertility clinic and undergo an in vitro fertilization procedure. The procedure is successful, and Laura eventually gives birth to a child. When the child is four years old, doctors discover that the child has leukemia and needs a bone marrow transplant in order to survive.

Case 1.3 ends with:

George is a suitable bone marrow donor. Laura requests that he donate some of his bone marrow in order to save the child's life.

Case 1.4 ends with:

Laura is a suitable bone marrow donor. George requests that she donate some of her bone marrow in order to save the child's life.

We had the “normal” parents go to a fertility clinic and undergo in vitro fertilization so as to match the medical intervention that takes places in 1.1 and 1.2 as much as possible. Each participant was asked a comprehension question about one of the parents comparable to those asked for 1.1 and 1.2 and was then asked to indicate their agreement or disagreement with the relevant versions of R1 and R2.

Our fifth (1.5) and sixth (1.6) cases began exactly like 1.1 and 1.2, with a sperm donor and an egg donor. However, the last two lines of 1.1 and 1.2 were changed so that a parent who contributed no genetic material to the child is singled out as a suitable donor.

Case 1.5 ends with:

Frank, Laura’s husband, is a suitable bone marrow donor. Laura requests that he donate some of his bone marrow in order to save the child’s life.

Case 1.6 ends with:

Laura is a suitable bone marrow donor. Laura’s husband requests that she donate some of her bone marrow in order to save the child’s life.

Comprehension questions and questions R1 and R2 were asked in the same fashion as above.

Our seventh (1.7) and eighth (1.8) cases began exactly as 1.1 and 1.2 but the last two lines were replaced with the following information about a male or female potential donor who is a complete stranger to the family of the child in need. The male donor, Frank, was presented in case 1.7 while the female donor, Becky, was presented in case 1.8:

George and Laura contact a tissue donation center and are told that someone on the other side of the country named Frank/Becky is a suitable bone marrow donor. They obtain Frank’s/Becky’s contact information from the

tissue donation center and request that he/she donate some of his/her bone marrow in order to save the child's life.

Participants were again asked a comprehension question and a pair of questions about the potential donor's responsibility to the child.

Vignettes 1.1 through 1.8 resulted in a 2 x 2 x 2 study design, where the potential donor was either biologically related to the child (1.1, 1.2, 1.3, and 1.4) or not (1.5, 1.6, 1.7, and 1.8), either a household parent (1.3, 1.4, 1.5, and 1.6) or not (1.1, 1.2, 1.7, and 1.8), and either male (1.1, 1.3, 1.5, and 1.7) or female (1.2, 1.4, 1.6, and 1.8). We considered three hypotheses against the resulting data. First, we hypothesized that participants would view biologically related individuals as having a greater moral responsibility to help the child than non-biologically related individuals but that this greater moral responsibility could be explained largely in terms of unique ability to help. The Partial Thesis would gain no support if biological related individuals are judged to be no more responsible than strangers. Indeed, this would suggest biological relatedness played little role in judgments of moral responsibility in such scenarios. Moreover, if biologically related individuals are judged to be more responsible than strangers, but this difference is tied to unique ability to help, the Partial Thesis gains no obvious support. On the other hand, if biologically individuals are judged more responsible than strangers, and this difference is not tied to unique ability, the Partial Thesis is supported.

Secondly, we hypothesized that being actively involved in raising a child would have a much larger effect on participants' moral responsibility ratings than being biologically related would. This hypothesis is not necessarily incompatible with the Partial Thesis, but if a large effect size were observed, it could significantly diminish the role played by biological relatedness. Thirdly, though neither Beverley nor advocates of the Partial Thesis explicitly

endorse the view that females bear a greater moral responsibility to children than males, we hypothesized that female potential donors might be viewed as having a greater moral responsibility to help the child than male potential donors. Nevertheless, we did not expect to observe a large effect.

In a between-subjects design, we recruited 240 participants (average age = 40; 41% female, 77% Caucasian) from Amazon's Mechanical Turk (www.mturk.com) and presented them with one of the eight cases described above.¹¹ Participants' mean moral responsibility ratings are summarized in Figure 1. A high score indicates strong agreement that the protagonist in question has a moral responsibility to donate tissue to the child in need, while a low score indicates strong disagreement.

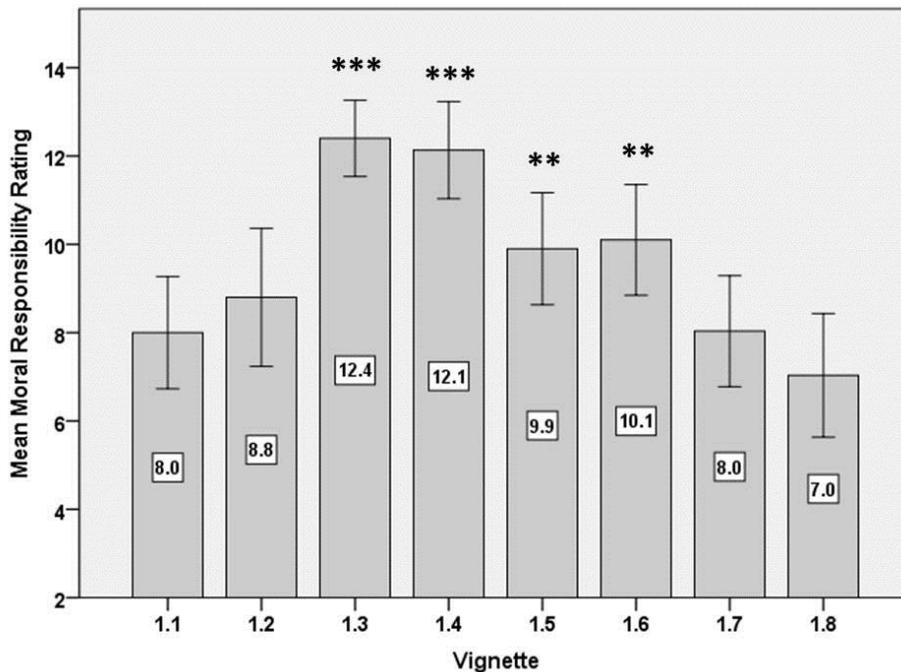


Figure 1. Mean moral responsibility ratings in Study 1. Error bars in all figures represent 95% confidence intervals. In all figures, an ‘*,’ ‘**,’ or ‘***’ indicates that

¹¹ Each MTurk worker had at least a 98% approval rating on at least 5000 tasks from MTurk and was paid \$.35 for their work.

the designated mean differs significantly from the neutral midpoint at the .05, .01, or .001 level.

Only when the potential donor was a household parent (i.e., in 1.3, 1.4, 1.5, and 1.6) did participants' mean moral responsibility ratings differ significantly from the neutral midpoint of 8.¹² The effect sizes for “normal” parents (1.3 and 1.4) and step-parents (1.5 and 1.6) were very large and large, respectively. In other words, when the potential bone marrow donor was a parent, biological or otherwise, actively involved in raising the child with leukemia, participants were strongly inclined to agree that the potential donor has a moral responsibility to donate bone marrow in order to save the child's life (R1). Moreover, participants were strongly inclined to agree that it would be morally wrong if the potential donor did not donate bone marrow to save the child's life (R2). Our results thus support our second hypothesis. However, our results also provide support for our first hypothesis, since participants were not inclined either to agree or to disagree with R1 or R2 when the potential donor was a gamete donor or a complete stranger. This finding fails to accord with the Partial Thesis. Thus, contrary to how McMahan seemed to think most individuals would view the Sperm Donor case, participants were unwilling to judge that the sperm donor in 1.1 had a moral responsibility to donate tissue to the child in need. This suggests that the Sperm Donor case may not be an effective tool to motivate the Partial Thesis.

We also performed a stepwise linear regression on the data obtained in Study 1 in order to determine the relative contributions of biological relatedness, household parenthood, and donor gender to participants' moral responsibility ratings. We used each of these factors as predictor variables and entered participant gender and participant age into

¹²1.1: $t(29) = 0.00, p > .05$. 1.2: $t(29) = 1.05, p > .05$. 1.3: $t(29) = 10.42, p < .001, r = .89$. 1.4: $t(29) = 7.69, p < .001, r = .82$. 1.5: $t(29) = 3.06, p < .01, r = .49$. 1.6: $t(29) = 3.43, p < .01, r = .54$. 1.7: $t(29) = 0.05, p > .05$. 1.8: $t(29) = -1.41, p > .05$.

the analysis as well. However, donor gender, participant gender, and participant age failed to be preserved in the resultant regression model (cf. Table 1).

		<i>B</i>	<i>SE B</i>	β	<i>t</i>	Sig.
Step 1	Constant	8.02	.32		25.36	.000
	Household Parenthood	3.09	.45	.41	6.92	.000
	Constant	7.26	.38		19.12	.000
Step 2	Household Parenthood	3.11	.44	.41	7.10	.000
	Biological Relatedness	1.51	.44	.20	3.44	.001

Table 1. Coefficients from stepwise regression analysis on data from Study 1. Dependent variable: moral responsibility rating. Excluded variables: donor gender, participant gender, and participant age.¹³

The regression coefficients for household parenthood and biological relatedness are 3.11 and 1.51. This means that the moral responsibility rating we can expect a participant to give will be approximately 3.11 points higher when the potential donor is a household parent than when the donor is not. On the other hand, the expected moral responsibility rating will only be 1.51 points higher when the potential donor is biologically related to the recipient than when he or she is not. Thus, we see that parenthood had roughly twice the impact on participants' moral responsibility ratings than biological relatedness. Nevertheless, the Partial Thesis can claim some measure of support from the results of Study 1, since biological relatedness was observed to be a significant predictor of individuals' moral responsibility judgments. The gender of the donor, the gender of the participant, and the participant's age did nothing to significantly increase or decrease our participants' moral responsibility ratings.

¹³The models at each step were significant. Step 1: $F(1, 236) = 47.83, p < .001$. Step 2: $F(2, 235) = 30.94, p < .001$. Adjusted R^2 for Step 1 = .17. Adjusted R^2 for Step 2 = .20.

Hence, our third hypothesis, that female donors might be viewed as having more responsibility to provide aid than male donors, was not supported.¹⁴

Because testing for an interaction effect between two categorical variables such as biological relatedness and household parenthood in a regression model can be a rather messy affair, we performed a three-way (biological relatedness x household parenthood x donor gender) ANOVA to investigate the possibility of such an interaction. No significant interaction between biological relatedness and household parenthood was observed.¹⁵ In other words, the kind of impact on moral responsibility ratings that biological relatedness had was independent of whether we were dealing with household parents or not, and the impact that household parenthood had on moral responsibility ratings was independent of whether we were dealing with biologically related individuals.

A post-hoc test comparing moral responsibility ratings of gamete donors to those of complete strangers (ignoring donor gender) revealed no significant difference between them.¹⁶ That is, participants did not think that the sperm and egg donors had any greater moral responsibility to donate bone marrow to the child with leukemia than a total stranger who was not biologically related to the child in any way. This result sharply conflicts with what advocates of the Partial Thesis predict.

A final post-hoc test compared participants' moral responsibility ratings of potential donors who are "normal parents" to those who are biologically unrelated household parents, which revealed a statistically significant difference between the two (with a medium effect

¹⁴Explanatory note on the two data analyses: Although the moral responsibility ratings for gamete donors and strangers did not differ significantly, the ratings for biologically related household parents were higher than for biologically unrelated household parents (i.e., step-parents). This difference, which does not show up in every pairwise comparison, shows up just enough to be a significant predictor in the regression analysis.

¹⁵Biological relatedness x household parenthood: $F(1, 232) = 2.58, p > .05$. We also observed no other significant interactions between the variables: Biological relatedness x donor gender: $F(1, 232) = .58, p > .05$. Household parent x donor gender: $F(1, 232) = .01, p > .05$. Biological relatedness x household parent x donor gender: $F(1, 232) = 1.69, p > .05$.

¹⁶ $t(118) = -1.29, p > .05$.

size).¹⁷ That is, a difference in judgments of moral responsibility emerged between biologically related parents and biologically unrelated parents actively involved in raising the respective child in need. In contrast to the results of the preceding paragraph, this result is consistent with what the Partial Thesis would predict. However, the post-hoc test for gamete donors and complete strangers above shows that biological relatedness does not always play a role in generating ratings of moral responsibility in tissue donation cases.

We hypothesize that the statistically significant difference in moral responsibility ratings for biologically related and unrelated household parents is not due to biological relatedness but rather to the greater presumed ability of the “normal” parents to help their child by donating the required biological tissue. That is, we think that participants tacitly assumed that the biological relatedness of one set of parents placed them in a superior position to help. We tested this hypothesis by running a brief follow-up experiment in which we asked participants to read the following vignette:

A four year old child has been diagnosed with leukemia and needs a bone marrow transplant in order to survive. Doctors have determined that both her biological parent and her step-parent would be suitable donors. Sometimes tissue or organ donations are rejected by a patient’s immune system.

We then asked participants, “Do you think that the child’s immune system would be more likely to reject bone marrow that was donated by the child’s biological parent or bone marrow that was donated by the child’s step-parent?” Participants were given the following three answers to choose from:

¹⁷ $t(118) = -4.12, p < .001, r = .35$. The result remains significant when controlling for multiple comparisons.

- (i) The child's immune system would be more likely to reject bone marrow donated by the child's biological parent
- (ii) The child's immune system would be more likely to reject bone marrow donated by the child's step-parent
- (iii) There should not be any difference in the likelihood of rejection, since both parents have been identified as suitable donors¹⁸

The appearance of the terms 'biological parent' and 'step-parent' in both the vignette and the answer choices were presented in counterbalanced order.

Participants were 60 workers from Amazon's Mechanical Turk (average age = 39; 42% female, 70% Caucasian). As we suspected, a significant majority of participants thought that the child's immune system would be more likely to reject bone marrow donated by the child's step-parent. 57% of participants selected the second answer choice, while 40% selected the third, and only 3% selected the first. Thus, even though participants are told that the biological parent and the step-parent have been identified as suitable donors, they do not think that the two parents are equally well positioned to help the child. This result strongly favors our hypothesis that unique ability rather than biological relatedness is the primary driver of ascriptions of moral responsibility in tissue donation cases.

To summarize, only when a potential tissue donor was a biological parent or a step-parent did participants' mean moral responsibility ratings differ significantly from the neutral midpoint. When the potential donors were gamete donors or complete strangers, moral responsibility ratings did not differ from chance. Attributions of moral responsibility to gamete donors (who were biologically related to the child) did not differ significantly from attributions to complete strangers (who were not biologically related). Attributions of moral

¹⁸Thanks to an anonymous referee from *Bioethics* for suggesting that we perform this study.

responsibility to biological parents did differ from attributions to step-parents, but our follow-up study shows that this difference appears to be driven by a presumed difference in the ability of biological parents and step-parents to help the child in need. These results provide powerful evidence against both the Sole Thesis and the Partial Thesis and support Beverley's contention that unique ability to help rather than biological relatedness is the primary factor underlying judgments of moral responsibility in tissue donation cases.

Study 2

In our second study, we made the uniqueness of the potential donor's ability to help someone in need explicit in a way that it was not in McMahan's original Sperm Donor case or in the cases used in Study 1. We also varied the degree to which a potential donor was uniquely positioned to help. In addition, we compared Beverley's preferred factor of unique ability to help head-to-head with the Partial Theorist's preferred factor of biological relatedness. Alongside these comparisons, we examined the influence changing the donation type had on judgments of moral responsibility.

In a between-subjects design, we presented our first four groups of participants with one of four versions of the basic sperm donor case of 1.1 above. However, instead of telling participants "George is a suitable bone marrow donor," they read that George "is the only potential donor that Laura and her doctors know about" or that George is one of two, five, or thousands of suitable donors that Laura and her doctors know about. We call these cases 2.1 through 2.4. To test for participant comprehension, we asked who George is (Laura's husband, Laura's doctor, or the sperm donor) and how many suitable donors Laura and her doctors know about. Participants who did not answer both of these questions correctly were excluded from the analysis. Participants were then asked to indicate the extent to which they

agreed or disagreed with statements R1 and R2 about the moral responsibility of the potential donor, just as in Study 1. An overall moral responsibility rating was computed from participants' responses to these two questions, as before. Because donor gender did not have any observed effect on participants' judgments of moral responsibility in Study 1, all donors in Study 2 had the same gender.

Our second set of cases (2.5 through 2.8) in Study 2 was exactly like the first four, except that the child in the story was diagnosed with a severe blood disease rather than leukemia, and the child's treatment required blood plasma rather than bone marrow from a suitable donor. This variation allowed us to compare the effect of different kinds of donations with different levels of perceived seriousness on judgments of moral responsibility. As above, comprehension questions were posed and participants were asked to indicate the extent to which they agreed or disagreed with variations of R1 and R2 which concerned blood plasma rather than bone marrow.

We then constructed another eight cases (2.9 through 2.16) that were exactly like 2.1 through 2.8, except that the suitable donor in each case is a complete stranger "on the other side of the country." The four bone marrow cases that involved a stranger (2.9 through 2.12) used the following template:

One day, George voluntarily donates sperm at a sperm bank. Before the donation, George signs a document that absolves him of any legal responsibility for any children that may be conceived with his sperm. Later that year, a woman named Laura visits the sperm bank and is artificially inseminated with George's sperm. She eventually gives birth to a child. When the child is four years old, doctors discover that the child has a severe blood disease and needs a special treatment in order to survive. The treatment

requires bone marrow from a suitable donor. Laura contacts a tissue donation center and is told that someone on the other side of the country named Frank is the only / one of two / one of five / one of thousands of potential bone marrow donor(s) they know about. She obtains Frank's contact information from the tissue donation center and request that he donate some of his bone marrow in order to save the child's life.

The four blood plasma cases that featured a stranger (2.13 through 2.16) used a template exactly like this one, except that the stranger is asked to donate blood plasma instead of bone marrow. The eight vignettes that involve a stranger (2.9 through 2.16) begin with a story about a sperm donor, even though the sperm donor plays no role in the tissue donation request that appears at the end of the story. This was done to keep the two sets of cases (2.1 through 2.8 and 2.9 through 2.16) as closely matched as possible. Participants were again asked a comprehension question about the uniqueness of the potential donor. The comprehension question about George that was used in 2.1 through 2.8 was replaced with one about Frank for 2.9 through 2.16. Participants' judgments of moral responsibility were obtained in the same way as above.

The sixteen vignettes from Study 2 resulted in a study design where the potential donor was (a) either the only donor, one of two, one of five, or one of thousands; (b) either asked to donate bone marrow or blood plasma; and (c) either biologically related to the child or not. We hypothesized that participants' attributions of moral responsibility to potential donors would positively correlate with the degree to which donors were uniquely positioned to provide aid. In light of the results of Study 1, we hypothesized that biological relatedness would play no significant role in judgments of moral responsibility. Finally, we hypothesized

that participants would be more inclined to attribute moral responsibility to donate when burden of donating was judged to be less costly.

For Study 2, we recruited 910 workers (average age = 37, 46% female, 81% Caucasian) from Amazon's Mechanical Turk.¹⁹ Figure 2 summarizes participants' mean moral responsibility ratings in the bone marrow conditions, while Figure 3 summarizes their ratings for the blood plasma conditions.

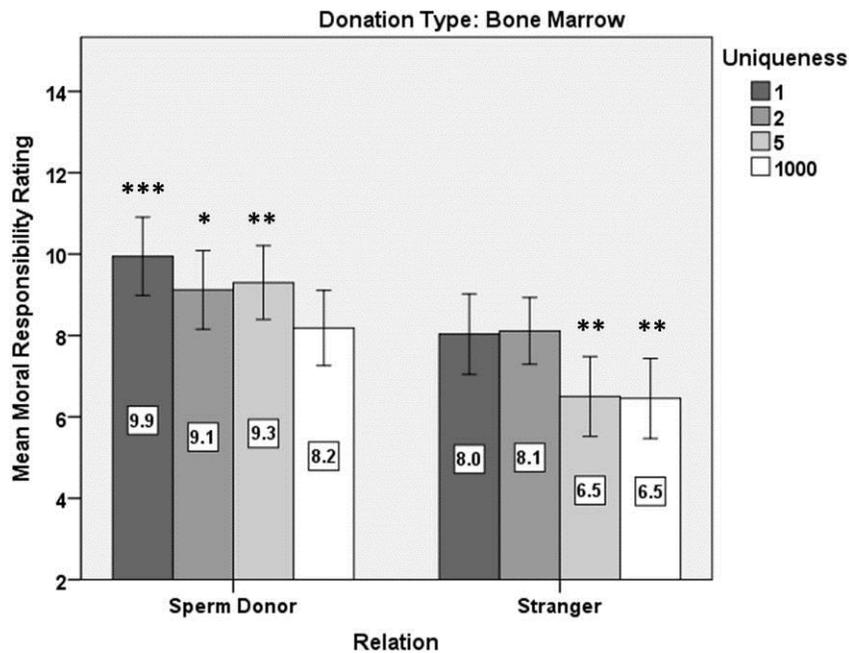


Figure 2. Mean moral responsibility ratings in the bone marrow conditions of Study 2.

¹⁹Each worker had at least a 98% approval rating on at least 5000 tasks from MTurk and was paid \$.40 for their work.

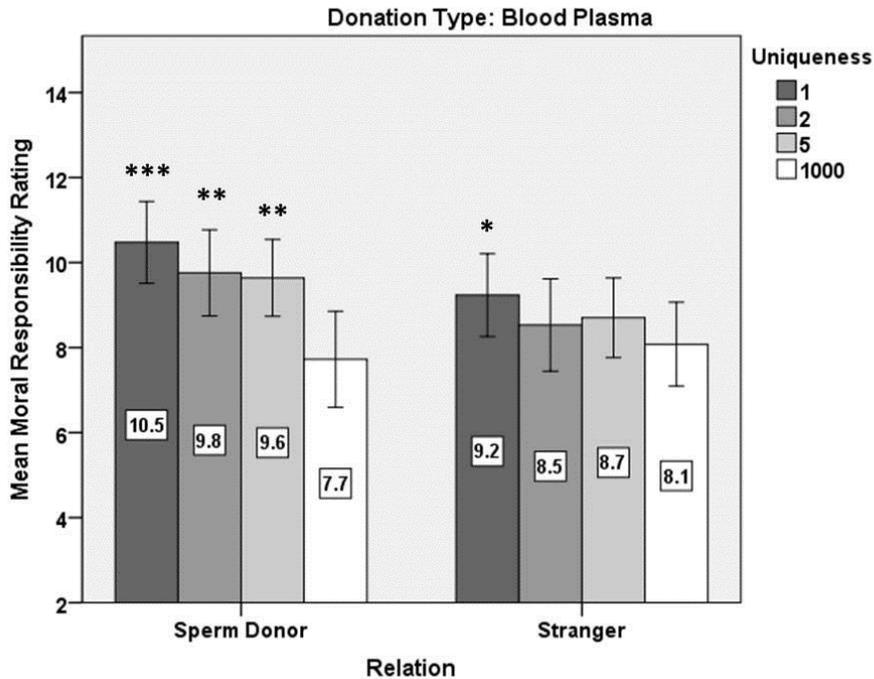


Figure 3. Mean moral responsibility ratings in the blood plasma conditions of Study 2.

In the bone marrow conditions, participants' mean moral responsibility ratings were significantly higher than the neutral midpoint in three of the eight cases and significantly lower in two.²⁰ In the blood plasma conditions, they significantly exceeded the midpoint four times but never fell below it.²¹

Looking at the left-hand sides of Figures 2 and 3, we can see that participants thought the sperm donor has a moral responsibility to donate bone marrow or blood plasma only when the sperm donor is one of a small number of people who are able to help the

²⁰Bone marrow / sperm donor / only one: $t(54) = 4.06, p < .001, r = .48$. Bone marrow / sperm donor / 1 of 2: $t(57) = 2.32, p < .05, r = .29$. Bone marrow / sperm donor / 1 of 5: $t(56) = 2.86, p < .01, r = .36$. Bone marrow / sperm donor / 1 of 1000s: $t(59) = .40, p > .05$. Bone marrow / stranger / only one: $t(58) = .07, p > .05$. Bone marrow / stranger / 1 of 2: $t(61) = .28, p > .05$. Bone marrow / stranger / 1 of 5: $t(57) = -3.06, p < .01, r = .38$. Bone marrow / stranger / 1 of 1000s: $t(52) = -3.16, p < .01, r = .40$.

²¹Blood plasma / sperm donor / only one: $t(58) = 5.15, p < .001, r = .56$. Blood plasma / sperm donor / 1 of 2: $t(53) = 3.48, p < .01, r = .43$. Blood plasma / sperm donor / 1 of 5: $t(57) = 3.63, p < .01, r = .43$. Blood plasma / sperm donor / 1 of 1000s: $t(57) = -.49, p > .05$. Blood plasma / stranger / only one: $t(59) = 2.53, p < .05, r = .31$. Blood plasma / stranger / 1 of 2: $t(50) = .98, p > .05$. Blood plasma / stranger / 1 of 5: $t(56) = 1.50, p > .05$. Blood plasma / stranger / 1 of 1000s: $t(50) = .16, p > .05$.

child. When the sperm donor is merely one among thousands of potential donors, participant did not agree he had a moral responsibility to donate his tissue (R1) and did not agree that it would be wrong if he did not donate (R2).²² Looking at the right-hand sides of Figures 2 and 3, participants only attributed moral responsibility to the stranger to donate blood plasma when uniquely able to help the child. Participants were not inclined to agree the stranger had a moral responsibility to donate blood plasma otherwise, and were inclined to disagree the stranger had such a responsibility to donate bone marrow when several others could provide aid. Our results support Beverley's hypothesis that unique ability is the primary determiner of judgments of moral responsibility in tissue donation cases. Our results do not demonstrate that biological relatedness plays no role in these elicited judgments, as it is compatible with the Partial Thesis that biological relatedness and unique ability both play a role. However, in a follow-up study described below, we provide reasons for thinking that the role of biological relatedness is mediated by unique ability.

One notable difference between the nearly identical cases 1.1 and 2.1 concerns the specification of the number of available donors. In 1.1, the vignette read 'George is a suitable bone marrow donor,' whereas in 2.1 it read 'George is the only potential donor that Laura and her doctors know about.' Participants attributed significantly greater moral responsibility in 2.1 than in 1.1. This suggests that participants are inclined to read "a potential donor" as "one of several" and reveals the importance of specifying uniqueness.

A stepwise linear regression analysis was performed to determine the relative impact of biological relatedness, unique ability to help, and tissue donation type on participants'

²²Cp. Beverley's Sperm Donor IV (pg. 17). Our results align with Beverley's claims concerning this variation that the biological father does not do anything worse than the other donors by not donating tissue.

moral responsibility ratings (cf. Table 2).²³ Each independent variable was a statistically significant predictor.

		<i>B</i>	<i>SE B</i>	β	<i>t</i>	Sig.
Step 1	Constant	7.967	.176		45.285	.000
	Biological Relatedness	1.290	.248	.170	5.209	.000
Step 2	Constant	8.284	.186		44.506	.000
	Biological Relatedness	1.326	.245	.175	5.416	.000
	Uniqueness	-.001	.000	-.154	-4.775	.000
Step 3	Constant	8.700	.223		38.936	.000
	Biological Relatedness	1.316	.244	.174	5.401	.000
	Uniqueness	-.001	.000	-.154	-4.795	.000
	Donation Type	.809	.243	.107	3.321	.001

Table 2. Coefficients from stepwise regression analysis on data from Study 2. Dependent variable: moral responsibility rating.²⁴

In the ultimate model, the regression coefficient for biological relatedness is 1.316, which means that participants' moral responsibility ratings are an average of 1.316 points higher when the suitable donor is biologically related to the child (e.g., when he is a sperm donor) than when the donor is not (e.g., because he is a complete stranger). The coefficient for unique ability to help is -.00136, which means that moral responsibility ratings are 1.36 points lower when the donor is one among thousands of suitable donors than when the invited donor is the only one who is in a position to help the child with a potentially fatal disease. It may thus seem that biological relatedness and one's unique ability to help have comparable effects on participants' intuitions about these cases. However, as we explain below, we do not think this is ultimately correct.

²³For purposes of analysis, unique ability to help was construed as a continuous variable, with the value assigned to this variable in cases where the potential donor was depicted as one among thousands was 1000.

²⁴The models at each step were significant. Step 1: $F(1, 908) = 27.14, p < .001$. Step 2: $F(2, 907) = 25.29, p < .001$. Step 3: $F(3, 906) = 20.73, p < .001$. Adjusted R^2 for Step 1 = .029. Adjusted R^2 for Step 2 = .053. Adjusted R^2 for Step 3 = .064.

The coefficient for tissue donation type is .809, which means that participants' moral responsibility ratings were .809 points higher in the blood plasma conditions than in the bone marrow conditions. In order to test our presumption that a bone marrow donation would be viewed as more costly to the donor than a donation of blood plasma, we conducted a brief supplementary study in which participants were asked to rank bone marrow and blood plasma in terms of how costly it would be to the average person to donate them. Participants were 60 MTurk workers (average age = 38, 47% female, 78% Caucasian), with similar qualifications to those in Studies 1 and 2. As we expected, a very solid majority (85% of participants) ranked donating bone marrow as being more costly than donating blood plasma. Interpreting participants' moral responsibility ratings in Study 2 in light of the results of our supplementary study allows us to conclude that responsibility ratings were lower when they were considering a more costly donation, supporting one of the hypotheses we articulated above.

Post-hoc comparisons of the moral responsibility ratings of the sperm donor and the complete stranger who are the only suitable donors reveal a statistically significant difference between them in the bone marrow conditions but not in the blood plasma conditions.²⁵ Post-hoc comparisons of the ratings of the sperm donor and complete stranger where they are each one among thousands of suitable donors again reveals a statistically significant difference between them in the bone marrow conditions but not in the blood plasma conditions.²⁶ In other words, when other factors are controlled for, some of the times biologically related individuals are deemed to have a greater moral responsibility to donate

²⁵Bone marrow: $t(112) = 2.77, p < .01, r = .25$. Blood plasma: $t(117) = 1.81, p > .05$. $\alpha = .0125$ to control for multiple comparisons.

²⁶Bone marrow: $t(111) = 2.57, p = .0115, r = .24$. Blood plasma: $t(107) = -.47, p > .05$. $\alpha = .0125$ to control for multiple comparisons.

tissue than biologically unrelated individuals are, which suggests that there may be some explanatory role for biological relations in judgments of moral responsibility.

However, because we were skeptical about the role that biological relatedness plays in generating judgments of moral responsibility in tissue donation cases and because in Study 1 we had observed it to play no significant role at all, we performed a follow-up study that was similar to the follow-up study we performed after Study 1.²⁷ Participants were asked to read the following bone marrow donation case, in which George (the sperm donor who appears in cases 2.1 through 2.8) and Frank (the complete stranger who appears in 2.9 through 2.16) are the only available donors:

One day, George voluntarily donates sperm at a sperm bank. Before the donation, George signs a document that absolves him of any legal responsibility for any children that may be conceived with his sperm. Later that year, a woman named Laura visits the sperm bank and is artificially inseminated with George's sperm. She eventually gives birth to a child. When the child is four years old, doctors discover that the child has leukemia and needs a bone marrow transplant in order to survive. The only potential donors that Laura and her doctors know about are George, the sperm donor, and someone on the other side of the country named Frank. Sometimes tissue or organ donations are rejected by a patient's immune system.

Participants were asked, "Do you think that the child's immune system would be more likely to reject bone marrow that was donated by George or bone marrow that was donated by Frank?" Participants were asked to choose between the following answers (which are similar to those found in the supplementary study we performed alongside Study 1:

²⁷ Thanks to an anonymous referee from *Bioethics* for suggesting that we perform this study.

- (i) The child's immune system would be more likely to reject bone marrow donated by George, the sperm donor.
- (ii) The child's immune system would be more likely to reject bone marrow donated by the person on the other side of the country named Frank.
- (iii) There should not be any difference in the likelihood of rejection, since both individuals have been identified as suitable donors.

The order of the descriptions of George and Frank in both the vignette and the answer choices were presented in counterbalanced order.

Participants were 60 workers from Amazon's Mechanical Turk (average age = 42; 53% female, 85% Caucasian). Participants' responses revealed a clear asymmetry in how well positioned to help they judged the sperm donor and the complete stranger to be. 50% of participants thought that the child's immune system would be more likely to reject bone marrow donated by Frank, while 45% thought there were be no difference. Only 5% thought that bone marrow donated by George would be more likely to be rejected. These findings strongly suggest what grounds folk judgments of moral responsibility in tissue donation cases is unique ability.

Our results are in line with Beverley's arguments against the Partial Thesis and the Sole Thesis but extend them in important ways. Beverley argued on grounds of explanatory adequacy and parsimony that unique ability provides a better explanation of what he took our intuitive judgments to be in tissue donation cases than did biological relatedness. In accord with this, we observed that, to the extent that biological relatedness plays a role in these scenarios, its persuasive force is due to implicit assumptions about biologically related individuals being uniquely able to provide aid. This strikes against the Partial Thesis, as our

results strongly suggest that biological relations are superfluous to the explanation of judgments of moral responsibility in these scenarios.

Outstanding Issues, Objections, and Replies

Although we do not examine this feature in detail, an interesting avenue for further investigation concerns the extent to which judgments of moral responsibility vary according to how difficult or costly they are to satisfy. We examined only the relative costliness of donating bone marrow or blood plasma, but including monetary donations or other kinds of gifts could shed additional light on the issues examined here. Another question that could benefit from further investigation concerns the kinds and degrees of individuals' ability to help.²⁸ Each of our cases were categorical in a certain sense. The characters in our stories either had bone marrow or blood plasma that could be donated, or they did not. Thus, there were no degrees of ability. However, if other kinds of donations (e.g., money) are introduced, gradations of ability to help would arise, and this might lead to a deeper understanding of the hypothesized relationship between one's ability to help someone in need and one's moral responsibility to do so. Although questions concerning these two issues remain open, we believe that our present investigation of judgments of moral responsibility in tissue donation cases nonetheless represents a useful contribution to the existing debate.

A worry that someone might have about Beverley's unique ability thesis is that it may seem to imply an implausibly strong 'can implies ought' principle, according to which anyone with an ability to aid another person has a moral responsibility to do so.²⁹ Noteworthy philosophers have argued for fairly strong (though not unrestricted) principles of just this

²⁸Thanks to an anonymous referee from *Bioethics* for raising this point.

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sort. Consider Peter Singer's well-known case for what has come to be called the 'Principle of Sacrifice': "If it is in our power to prevent something bad from happening, without thereby sacrificing anything of comparable moral importance, we ought, morally, to do it."³⁰ However, even if Beverley's unique ability thesis implies such a strong principle, we do not think this fact would automatically undermine his thesis' explanation of the data above, since the Principle of Sacrifice is taken seriously by a number of philosophers and even its critics acknowledge that it is not an easy task to figure out exactly how it goes wrong.

Nevertheless, we do not think Beverley's unique ability thesis has implausibly strong consequences regarding our duty to aid those in need since it is focused on a circumscribed range of cases and maintains that within this range (and in relevantly similar cases), it is unique ability rather than biological relatedness that seems to largely explain observed patterns of intuitive judgments. What is this range and how is it delineated? Beverley does not undertake to provide a full explanation of these factors. However, it is instructive to note that in situations of acute need, folk moral and legal norms do call upon those with an ability to help to do so. Consider the fact that ten U. S. states currently have duty-to-rescue statutes in place that require bystanders to provide assistance in emergency situations if providing assistance is not dangerous for the bystander. Statute strength varies across state. Minnesota and Vermont require bystanders to provide direct assistance under penalty of misdemeanor, while California, Florida, Hawaii, Massachusetts, Ohio, Rhode Island, Washington, and Wisconsin only require bystanders to contact law enforcement or medical professionals.³¹ Note that the emergency situations covered by these laws bear important similarities to the tissue donation cases at the heart of our research: (i) certain individuals have severe medical

³⁰Peter Singer, "Famine, Affluence, and Morality," *Philosophy and Public Affairs*, vol. 1 (Spring, 1972), 229-243

³¹A succinct summary of statutes and associated penalties can be found at Volokh. E. (2009). *Duty to Rescue/Report Statutes. Volokh Conspiracy.*

needs that, if left untreated, will lead to their death in the very near term, and (ii) because certain other individuals are available to help, they are deemed to have a moral responsibility to do so. Determining which kinds and which degrees of availability underwrite judgments of moral responsibility would probably be a very complex and daunting (not to mention messy) task. But note that the duty-to-rescue statutes are not plausibly taken to imply anything as strong as a legal analogue to Singer's Principle of Sacrifice.

Not only does Beverley's unique ability thesis not depend upon an unrestricted 'can implies ought' principle, it also does not include the idea that the degree of moral responsibility which uniquely positioned donors bear to aid those in need is maximal or infeasible. Rather, the claim is that someone's unique ability to provide aid renders them morally responsible to a certain degree to do so, but this responsibility may be outweighed by countervailing considerations. Take Judith Thomson's famous violinist case, in which you have been kidnapped so that a famous musician with a serious kidney ailment can be hooked up to your circulatory system and "your kidneys can be used to extract poisons from his blood as well as your own."³² But now alter the case so that it is a tissue donation case. After canvassing all the available medical records and finding that you alone are a potential donor, the Society of Music Lovers has kidnapped you and removed one of your kidneys without your consent. We presume that members of the general public would object more strongly to the actions of the Society of Music Lovers in this altered version of the story than they would in the original. Plausibly, that many of the same people who would object to these actions would also support duty-to-rescue statutes in their states suggests that whatever 'can implies ought' principle they endorse is both restricted in its scope and defeasible in its

³²Thomson, J. "A Defense of Abortion". *Philosophy and Public Affairs* 1:1 (1971): 47–66.

strength. It is on a principle such as this that Beverley's unique ability thesis depends. Nothing stronger is required.

Most importantly, however, regardless of what one may think of Beverley's unique ability thesis taken in the abstract, the fact remains that in our studies we varied the biological relatedness and unique ability to help of the characters in our vignettes (along with a few other factors like household parenthood and costliness of the tissue donation) and found that unique ability rather than biological relatedness was the primary predictor of people's judgments of moral responsibility. Moreover, our results provide some reason for turning the present concern on its head. Instead of using the idea of an implausibly strong 'can implies ought' principle to motivate a worry about Beverley's unique ability thesis, we would argue that the fact that an ability to help was observed to predict judgments of moral responsibility in the cases above shows that the scope of 'can implies ought' principles in folk morality may be broader than philosophers typically assume.

Lastly, a more general worry that someone might have about our research project concerns the relevance of the empirical study of folk intuitions to philosophical debates in bioethics. We touched on this issue in the introductory section above, where we gave several examples of contributors to the debate on parental responsibility in tissue donation cases who appeal to what they claim are widely shared or commonsense intuitions about these cases. In every instance, the philosopher appealing to such intuitions uses what they believe is their widespread appeal as a reason to motivate or persuade others to go along with the line of argument in which they figure. While we do not believe that philosophical theorizing should be rigidly constrained by folk intuitions, we would like to highlight how common appeals to intuition are in ethics—particularly in applied ethics. For example, when considering a range of applied ethical issues such as abortion and euthanasia, McMahan

explains that his methodological approach to devising a theory of the wrongness of killing is motivated by doing “justice to the full range of commonsense beliefs about the morality of killing.”³³ Thus, while we believe that folk intuitions are defeasible and can be overridden by various philosophical considerations, we recognize that they often form the starting point for many philosophical investigations and that most philosophers believe that explanations must be provided whenever they are set aside. Given the importance and prevalence of appeals to commonsense intuition in contemporary philosophy, we believe that rigorous empirical investigation of the contours of folk intuitive judgments can make a significant contribution to philosophical debates.

Conclusion

In Study 1, we found that participants strongly agreed that individuals have a moral responsibility to donate tissue to a person in need only when those individuals are the household parents (biologically related or not) of the person in need. No significant role for biological relatedness as such was observed and no significant role for gender was observed. We found a statistically significant difference between attributions of moral responsibility to biologically related and unrelated household parents, but a follow-up study suggests this difference is driven by presumptions of the ability of biological parents and step-parents to help the child in need. Study 1 thus provides powerful evidence against both the Sole Thesis and the Partial Thesis and support Beverley’s contention that unique ability to help rather than biological relatedness is the primary factor underlying judgments of moral responsibility in tissue donation cases.

³³J. McMahan. *Ethics of Killing: Problems at the Margins of Life*. Oxford: Oxford University Press; 2003. p. 189.

In Study 2, when the question of the uniqueness of a potential donor's ability to help was made explicit and distinct burdens compared, we found that participants attributed moral responsibility to sperm donors for donating bone marrow when they were one of few able to provide aid. When among thousands of potential bone marrow donors, sperm donors were not deemed morally responsible to donate. In contrast, strangers were not deemed morally responsible to donate bone marrow regardless of the number of potential donors. Concerning blood plasma donation, participants attributed moral responsibility to sperm donors for donating blood plasma again only when each of them was not one among a great many people in a similar position to help. Strangers, however, were deemed morally responsible to donate blood plasma when uniquely positioned to save the ailing child, but not otherwise. Though these results suggested there may be some explanatory role for biological relations in judgments of moral responsibility, an additional follow-up study found that role is more plausibly tied to the perceived likelihood of compatibility between biologically related bone marrow donors and recipients, and perhaps perceived incompatibility between donors who are strangers to the recipients. Perceptions of bone marrow compatibility, however, suggest unique ability, rather than biological relations, again underwriting judgments of moral responsibility.

Our combined results from Study 1 and 2 then provide empirical support for Beverley's claims that biological relatedness alone plays little role in judgments of moral responsibility in cases where it is exhibited while unique ability plays an important role in such judgments. As such, it seems the best explanation for judgments about cases such as Sperm Donor, which are typically employed to motivate biological relations grounding judgments of moral responsibility, is not the biological relatedness of agents involved but rather considerations of the abilities of those agents.