

Blood is Thick but Unique Ability is Thicker: Judgments of Moral Responsibility in Tissue Donation Cases

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If a person requires an organ or 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 biological relations the potential donor bears to the recipient. We contend that such views ignore the role that a potential donor's unique ability to help the person in need plays 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 think this will not be due to the fact that the donor stands in a close biological relationship to the recipient. Rather, we think 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 and organs with those of the recipient. In this paper, we report the results of two studies designed to investigate the comparative roles that biological relatedness and unique ability play in generating judgments of moral responsibility in tissue donation cases. We found that biologically related individuals are deemed to have a significant moral responsibility to donate tissue only when they are one of a small number of people who have the capacity to help.

Keywords: biological relations, moral responsibility, tissue donation

Introduction

Several philosophers claim that biological relationships at least partially ground judgments of moral responsibility in certain kinds of cases. Often, this claim is motivated as the best explanation for scenarios where a biological relative is judged morally responsible for providing aid to a child in need despite that relative lacking explicit responsibility for the child. As a notable example, biological relations are invoked as the best explanation for intuitions concerning a sperm donor's apparent moral responsibility in the following scenario (McMahan, p. 226):

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 absolved himself of rights to the child, and presumably plays no role in the child's life. Nevertheless, it may seem plausible that the biological father should donate bone marrow to save the child. Assuming this intuition is correct, McMahan appeals to the biological relation between the father and his offspring in this scenario as at least partially grounding judgments of the father's moral responsibility. Absent explicit parental responsibility to the child, the brute biological relation appears an obvious candidate explanation. McMahan is not alone in claiming biological relations partially ground judgments of moral responsibility (Abegg, 1984; Kolodny, 2010; Velleman, 2008). Following a recent discussion of this claim, call this view the Partial Thesis, and proponents of this view Partial Theorists (Beverley, 2015). A more extreme claim is that the biological relation exhibited in such scenarios *solely* ground moral responsibility (Peach, 2004; Schwarz, 1990). Call this view the Sole Thesis, and proponents Sole Theorists.

Opponents of both the Partial Thesis and Sole Thesis typically attack these positions by claiming that the appeal to biological relations as even partially grounding our judgments

in such cases is mysterious (Boonin, 2003) or implausible at best (Weinberg, 2008) and trivial or unhelpful at worst (Rulli, 2014). Opponents often point to the explanatory lacunae remaining once biological relations are introduced to explain attributions of moral responsibility. For instance, one might legitimately wonder how a brute fact of biology grounds judgments of moral responsibility, and if it does, whether proponents are committed to the implausible claim that degrees of biological relatedness track judgments of moral responsibility as well. While it seems incumbent on both Partial Theorists and Sole Theorists to provide responses to these questions and several others, we will not press such questions here. Instead, we level a more forceful objection against these positions, directly targeting the motivation for both the Partial Thesis and Sole Thesis by undermining the claim that biological relations are the best explanation for cases like Sperm Donor. Rather than biological relations grounding judgments of moral responsibility, we claim considerations of unique ability to provide aid, an implicit feature in the Sperm Donor case above, provide a better explanation of such judgments. Noting our target is common ground for the Partial and Sole Theorists and that undermining biological relatedness as partially grounding judgments of moral responsibility would in turn undermine biological relatedness as the sole grounds for such judgments (though not vice versa), we focus in what follows on the Partial Thesis.

To test our claim against the Partial Thesis, we constructed a pair of studies to investigate the role that biological relatedness, and the unique ability of an agent to help a person in need, play in underwriting judgments about the moral responsibilities agents have to help others in need. In our first study, we found that participants strongly agreed that biologically related individuals have a moral responsibility to donate tissue to a person in need only when those individuals are the household parents of the person in need. No

significant role for biological relatedness as such was observed. These results strongly suggest that biological relatedness does not play a significant role in judgments of moral responsibility in scenarios similar to Sperm Donor. In our second study, when the question of the uniqueness of a potential donor's ability to help was made explicit, we found that participants attributed moral responsibility to sperm donors only when they were one of few individuals able to provide aid. Combining these results, that biological relatedness alone seems to play little role in judgments of moral responsibility in cases where it is exhibited while a unique ability to provide aid plays a significant role in such judgments where it is exhibited, strongly suggests the Partial Thesis is false, as it seems the best explanation for judgments about these cases is not biological relatedness, but rather considerations of the abilities of agents involved. We turn now to the details of each study.

Study 1

In our first study, we used eight vignettes that described 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.

Research Materials

We began with the following variation of McMahan's Sperm Donor, where the potential donor is biologically related to the child by voluntary gamete donation but has no continuing parental obligations to the child. We call this Case 1.1, and display the vignette in full below:

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 (1.2) that featured 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. We display Case 1.2 in full below:

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 corresponding comprehension questions, “Who is George?” for 1.1 and “Who is Becky?” for 1.2. 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 not paid for their participation and were replaced by participants who answered them correctly. 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 with a pair of cases that involve “normal parents” as potential donors. 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. Participants were asked a comprehension question about one of the parents comparable to those asked in the preceding cases, and were 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 about moral responsibility were asked in the same fashion as above.

Finally, 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 a 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.

Results and Analysis

These eight vignettes 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 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 the effect size would be small. Note that the Partial Thesis might be supported given a significant difference concerning judgments of moral responsibility between biologically related individuals and strangers if the former were judged to have greater moral responsibility to the child in need than the latter.

On the other hand, the Partial Thesis would gain no support if biological related individuals are judged no more responsible than strangers. Indeed, this would suggest biological relatedness played little role in judgments of moral responsibility in such scenarios. We also predicted that being actively involved in raising the child would have a much larger effect on participants' moral responsibility ratings than being biologically related would. This claim we, and many Partial Theorists such as McMahan, can accept. Additionally, although McMahan and others do not explicitly endorse the view that females bear a greater moral responsibility to children than males, we thought female potential donors might be viewed as having a greater moral responsibility to help the child than male potential donors. Nevertheless, we again 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. They each had at least a 98% approval rating on at least 5000 tasks from MTurk and were paid \$.35 for their work. Participants' mean moral responsibility ratings are summarized in Figure 1.

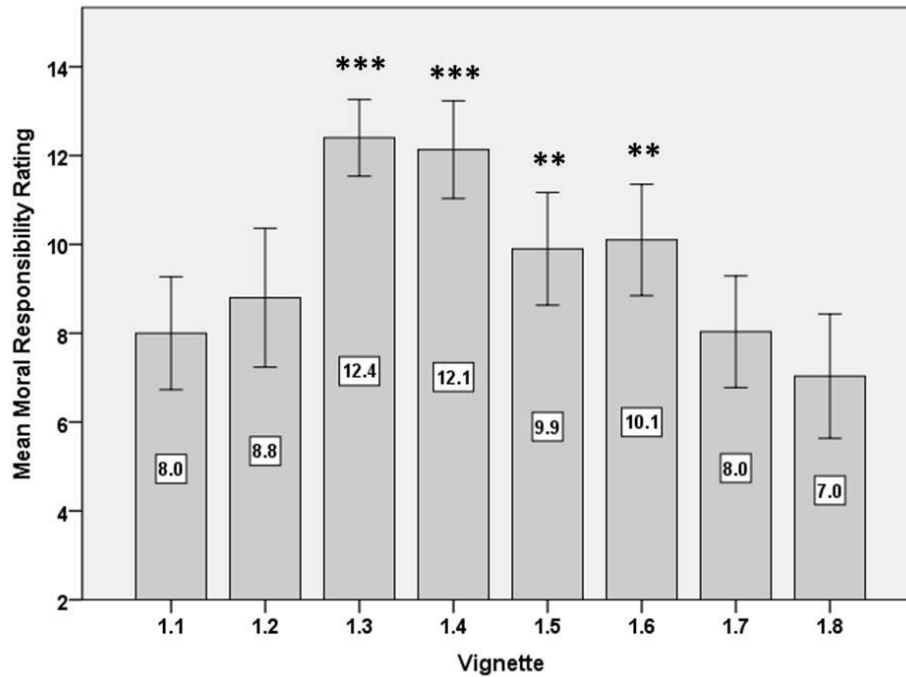


Figure 1. Mean moral responsibility ratings in Study 1. Error bars in all figures represent 95% confidence intervals. In all figures, an ‘*’, ‘**’, or ‘***’ indicates that the designated mean differs significantly from the neutral midpoint at the .05, .01, or .001 level.

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 8.¹ The effect sizes for “normal” parents and step-parents 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 and that it would be morally wrong if the potential donor did not donate bone marrow to save the child’s life. However, when the potential

¹ 1.1: $t(29) = 0.00, p > .05$. 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: $t(29) = -1.41, p > .05$.

donor was merely a gamete donor or a complete stranger, participants were not inclined to agree or disagree with R1 and R2. The latter finding fails to accord with the intuitions of McMahan and others who think that biological relations, either partially or solely, ground intuitive judgments of moral responsibility on the part of biological parents towards offspring (McMahan, 2003; Abegg, 1984; Kolodny, 2010; Lemmons, 2004; Page, 1984; Velleman, 2008).

A stepwise linear regression analysis was performed to determine the relative contributions of biological relatedness, household parenthood, and donor gender to participants' moral responsibility ratings. In addition to using each of these factors as a predictor variable, we also entered participant gender and participant age into the analysis. 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
Step 2	Constant	7.26	.38		19.12	.000
	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.²

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

² The 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.

when the donor is not. 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. 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.

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.³ 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.⁴ In other words, 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

³ Biological 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: $F(1, 232) = 1.69, p > .05$.

⁴ $t(118) = -1.29, p > .05$.

with what theorists such as McMahan, who want to ground moral responsibility in this kind of case at least partially in biological relatedness, would have predicted.

A post-hoc test that compared participants' moral responsibility ratings of potential donors who are "normal parents" to those who are biologically unrelated household parents revealed a statistically significant difference between them (with a medium effect size).⁵ In contrast to the results described in the preceding paragraph, this result is consistent with what the Partial Thesis would predict. However, we hypothesize that the statistically significant difference in this case is not due to biological relatedness. Rather, we think it is actually due to the presumed unique ability of the "normal" parents to help their child in need by donating the required biological tissue. In 1.5 and 1.6, when the biologically unrelated household parent is described as being a suitable donor, there is no suggestion that there is something biologically unique about them that renders them able to help. The implication is that they just happen to have the right kind of profile but that there are likely many others who also fit the profile. However, in cases 1.3 and 1.4, which involve biological parents, we think participants are more likely to think their biological relatedness puts them in a special position to help. Our hypothesis is that is the unique ability to help (which may well involve considerations of biological relatedness) is the primary driver of intuitions about moral responsibility in these cases. In Study 2, we investigate this factor in further detail.

Study 2

In our second study, we wanted to make 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 case

⁵ $t(118) = -4.12$ $p < .001$, $r = .35$. The result remains significant when controlling for multiple comparisons.

or in the cases used in Study 1 above. We also wanted to compare the variable of uniqueness head-to-head with the Partial Theorist's preferred factor of biological relatedness.

Research Materials

In a between-subjects design, we presented our first four groups of participants with the basic sperm donor case of 1.1 above. This time, however, instead of simply 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, just as in Study 1. 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, Frank, “on the other side of the country.” The 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 blood plasma 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 blood plasma donor(s) they know about. She obtains Frank’s contact information from the tissue donation center and request that he donate some of his blood plasma in order to save the child’s life.

The 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.

Results and Analysis

Participants in Study 2 were 910 workers (average age = 37, 46% female, 81% Caucasian) from Amazon's Mechanical Turk. They each had at least a 98% approval rating on at least 5000 tasks from MTurk and were paid \$.40 for their work. Figure 2 summarizes participants' mean moral responsibility ratings in the bone marrow conditions of Study 2, and Figure 3 summarizes their ratings for the blood plasma conditions.

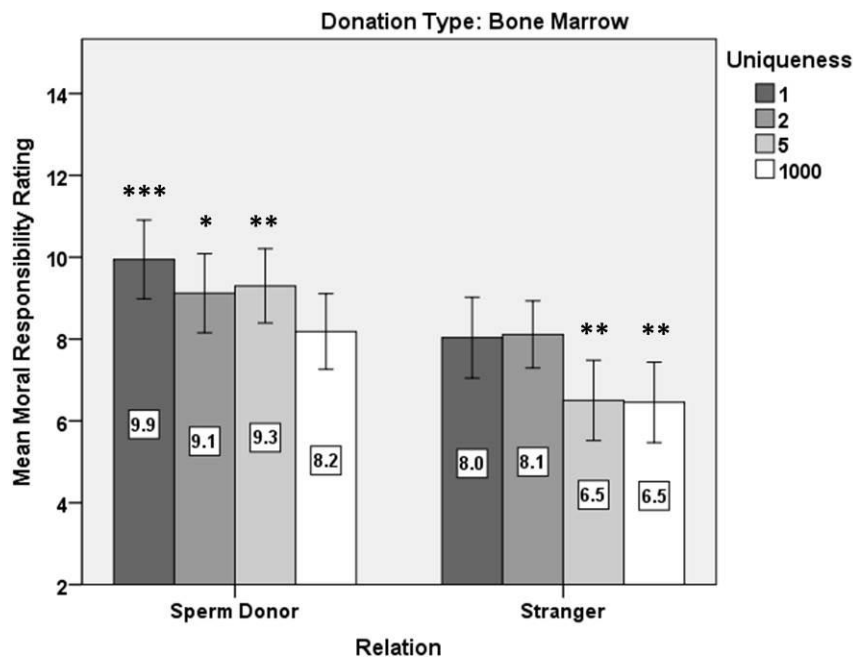


Figure 2. Mean moral responsibility ratings in the bone marrow conditions of Study 2.

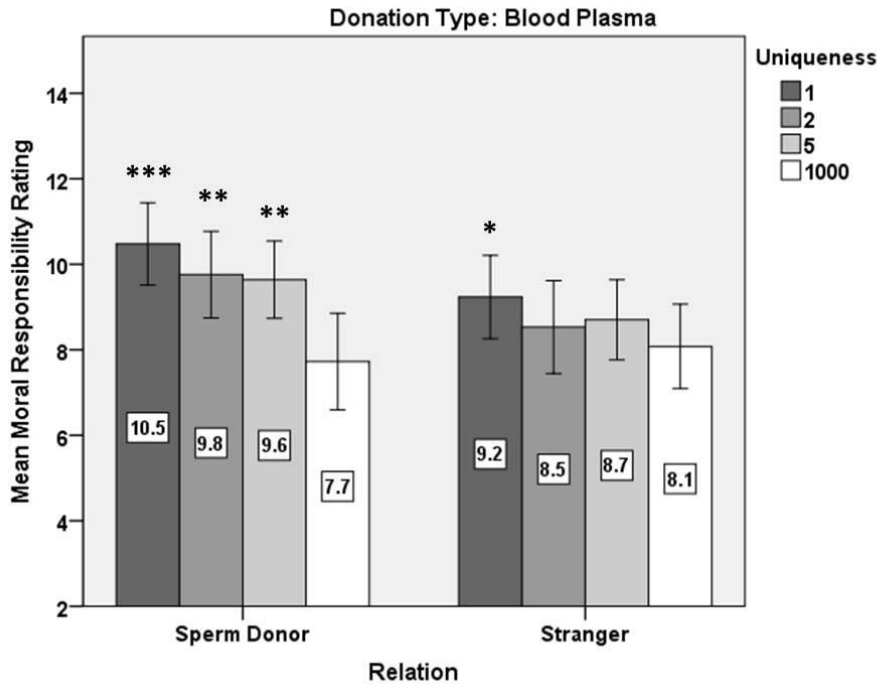


Figure 3. Mean moral responsibility ratings in the blood plasma conditions of Study 2.

In the bone marrow conditions, participants' mean moral responsibility ratings were significantly higher than the neutral midpoint in three of the eight cases but significantly lower in two.⁶ In the blood plasma conditions, they significantly exceeded the midpoint four times but never fell below it.⁷ 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 uniquely placed to help the child. When the sperm donor is merely one among thousands of potential donors, participants did not think

⁶ Bone 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: $t(52) = -3.16, p < .01, r = .40$.

⁷ Blood 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: $t(50) = .16, p > .05$.

he had a moral responsibility to donate his tissue and did not agree that it would be wrong if he did not donate. This finding runs contrary to what the Partial Thesis would predict.

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' moral responsibility ratings (cf. Table 2).⁸ 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.⁹

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

⁸ For 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.

⁹ The 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.

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. Thus, we can see that biological relatedness and one's unique ability to help have comparable effects on participants' intuitions about these cases.

Finally, the coefficient for tissue donation type is .809. Participants' moral responsibility ratings were .809 points higher in the blood plasma conditions than in the bone marrow conditions. An independent set of 60 MTurk workers (average age = 38, 47% female, 78% Caucasian) were asked to rank bone marrow and blood plasma in terms of how costly it would be to the average person to donate them. As we expected, a very solid majority (85% of participants) ranked donating bone marrow as being more costly than donating blood plasma. Thus, participants' moral responsibility ratings in Study 2 were lower when they were considering a costlier donation. Although we did not investigate this factor in detail in our studies, it is worth noting that many theories of normative ethics do not decree that moral obligations decrease or dissipate as they become more difficult or costly to satisfy.

Post-hoc comparisons of the moral responsibility ratings of the sperm donor and complete stranger where they are the only suitable donors reveal a statistically significant difference between them in the bone marrow conditions but not in the blood plasma conditions.¹⁰ 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

¹⁰ Bone marrow: $t(112) = 2.77, p < .01, r = .25$. Blood plasma: $t(117) = 1.81, p > .05$. $\alpha = .0125$ to control for multiple comparisons.

plasma conditions.¹¹ In other words, when other factors are controlled for, only some of the time are biologically related individuals deemed to have a greater moral responsibility to donate tissue than biologically unrelated individuals. It is noteworthy that greater moral responsibility was attributed only in the bone marrow case where considerations of the biological compatibility between donor and recipient are more essential. Your body will reject bone marrow donations from a greater percentage of people than it will from blood plasma donors. Thus, even here we see the importance of a donor's unique ability to help.

Conclusion

In our first study, we found that participants strongly agreed that biologically related individuals have a moral responsibility to donate tissue to a person in need only when those individuals are the household parents of the person in need. No significant role for biological relatedness as such was observed. In our second study, when the question of the uniqueness of a potential donor's ability to help was made explicit, we found that participants attributed moral responsibility to sperm donors only when each of them was not one among a great many people in a similar position to help. It is clear then where an individual is merely one among thousands able to provide aid to a biological relative in need, they were judged no more morally responsibly to provide that aid than a stranger. When one among a few able to provide aid, judgments of moral responsibility increase considerably for biological relatives and strangers. While our findings in Study 2 indicate that in some cases biological relatedness plays a role in judgments of moral responsibility, that role is plausibly tied to the perceived likelihood of compatibility between biologically related bone marrow donors and recipients, and perhaps perceived incompatibility between donors who are

¹¹ Bone marrow: $t(111) = 2.57, p = .0115, r = .24$. Blood plasma: $t(107) = -.47, p > .05$. $\alpha = .0125$ to control for multiple comparisons.

strangers to the recipients. Perceptions of bone marrow compatibility, however, suggest unique ability again underwriting judgments of moral responsibility. This suggestion is emboldened by reflecting on the results of Study 1, where biological relatives and strangers not involved in raising the child in need were judged equally morally responsible for donating bone marrow, and where the number of potential donors is not made explicit.

Thus, our findings strongly suggest that biological relatedness alone plays little role in judgments of moral responsibility in cases where it is exhibited. On the other hand, unique ability seems to play an important role in such judgments in cases where it is exhibited. As stated previously, combining these results strongly suggests the Partial Thesis is false (as well as the Sole Thesis), as it appears the best explanation for judgments about these cases is not biological relatedness, but rather considerations of the abilities of agents involved.

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