

**OVER MY DEAD BODY: BODY DONATION
AND THE RISE IN DONOR REGISTRATIONS
IN THE NETHERLANDS**

SOPHIE BOLT, MA

ROB EISINGA, PH.D.

MARGA ALTENA, PH.D.

ERIC VENBRUX, PH.D.

Radboud University Nijmegen, The Netherlands

PETER O. GERRITS, PH.D.

University of Groningen, The Netherlands

ABSTRACT

In the Netherlands, the number of body donor registrations has been increasing for several years. Body donors are people who register at an anatomical institute to donate their entire body, after death, for scientific education and research. Although only 0.1% of the Dutch population is registered as a body donor, this is sufficient to realize the anatomical demand of about 650 bodies annually. Due to the recent rise of registrations many anatomical institutes have (temporarily) stopped registering new donors to prevent a surplus of bodies. Based on a large body donor survey ($n = 759$) and in-depth anthropological interviews with 20 body donors, we try to give an explanation for the rising registration numbers. We argue that the choice for body donation in contemporary, individualized Dutch society is an autonomous way to give meaning and sense to life and death outside the framework of institutionalized religion.

INTRODUCTION

Grateful for my colorful and adventurous life and the many family and friends with whom I shared good times.

I have now moved to the UMCG,
Hanzeplein 2, Groningen

Mrs. Van Dijk¹ is a 90-year-old woman who will move one last time, her final move being permanent. She has already decided where she wants to go, and afterwards she desires a big gathering of family and friends in the pub. The change of address notification is written and carefully stored in a drawer in her living room. When the time comes, it will be placed in the newspaper. But not yet, she is still fully enjoying life in her present home. She is not planning to move for a long time, even more so, because her final move will equal death. Since she is a whole body donor her corpse will be moved to the Department of Anatomy at the University Medical Center Groningen (UMCG), where it will be used in the dissecting room for anatomical education and research. Mrs. Van Dijk turned her obituary into a change of address notification, which is her way to make it a more creative, happier, and less ordinary moment, or as she puts it: “you should not make a mountain out of a molehill. I am 90 years old, so don’t you cry. Leave it, there is no need for it.”

Mrs. Van Dijk is one of the 16,000 registered body donors in the Netherlands. Although this is only 0.1% of the Dutch population, these registration numbers are sufficient to realize the anatomical demand of about 650 body donations per year. In contrast to the inadequate numbers of bodies for dissection reported in other countries (Anyanwu, Udemezue, & Obikili, 2011; Boulware, Ratner, Cooper, Laveist, & Powe, 2004; McHanwell, Brenner, Chirculescu, Drukker, Mameren, Mazzotti, et al., 2008), most Dutch anatomical institutes have witnessed an increase in body donor registrations in the past several years, which has caused several institutes to (temporarily) stop admitting new body donors (Wijbenga, Koning, Kooistra-Akse, Bolt, Kuks, & Van Zenten-Timmer, et al., 2010). For instance, at the Department of Anatomy at the University Medical Centre Groningen (UMCG) body donor registrations have been increasing since 2004. Figure 1 shows the annual number of body donor registrations at the UMCG per year from 1965 to 2011. There were registration stops in 1975, from 1980 to 1993; and partial stops in 2010 and 2011.

¹ All of the informants have been given fictitious names in order to protect their privacy.

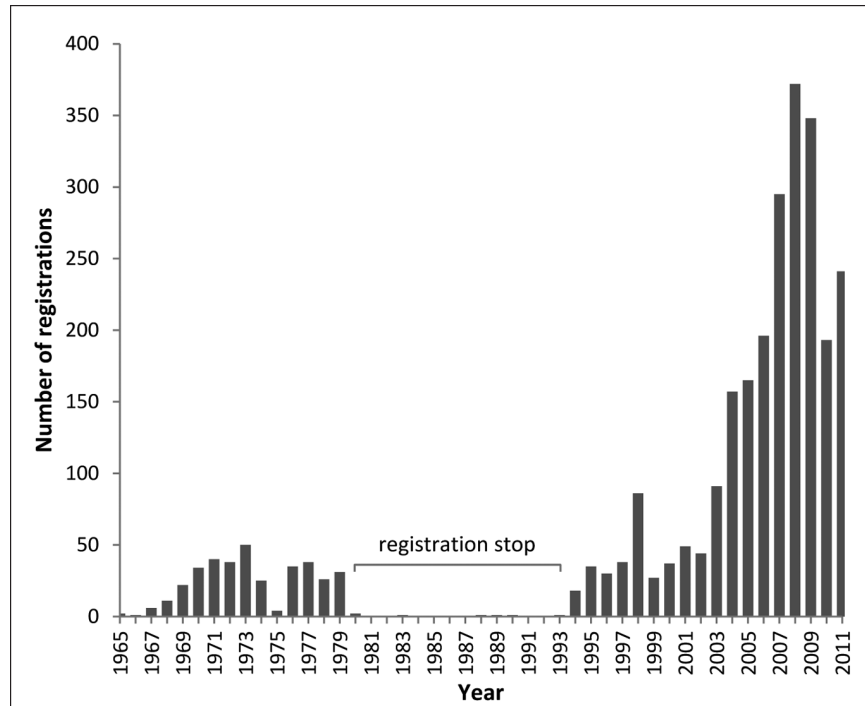


Figure 1. Number of body donor registrations at the UMCG per year from 1965 to 2011.

To gain a better understanding of the remarkable popularity of whole body donation reflected in the increase of registration numbers, in November 2008 a survey was sent to 996 body donors registered in the database of the UMCG. Two previous articles have been published using the data of this body donor survey, both covering the issue of motivation for body donation in the Netherlands (Bolt, Eisinga, Venbrux, Kuks, & Gerrits, 2011; Bolt, Venbrux, Eisinga, Kuks, Veeing, & Gerrits, 2010). The present article is enriched with data from qualitative in-depth interviews, held in September 2010, with 20 body donors.

By exploring distinctive body donor characteristics within the context of broader societal changes in the Netherlands, we try to give an explanation for the increasing body donor registration numbers. The results of the survey (Bolt et al., 2010) showed four important body donor characteristics which we include in our analysis: self-determination, non-church affiliation, advanced aged, and health. First, we study the aspect of self-determination, something that many of the body donors value highly. The decision to register as body donor is a conscious and individual one, often motivated by the desire to be useful after death (Bolt

et al., 2010). Second, we include non-church affiliation since the majority of the body donors have no religious affiliation (79%). Body donation can allow people the possibility to give meaning and sense to death and dying outside the framework of institutionalized religion (Bolt et al., 2010). Third, the majority of the donors have reached an advanced age. The mean age of the survey respondents was 69 (Bolt et al., 2010). Apparently, in general, the decision for body donation is made later in life. This is understandable as, usually, when people get older they not only tend to think about their own mortality, but they also change their attitude toward life and death (Tornstam, 2005). Fourth, and lastly, we include health. About half of the donors (49%) consider body donation as a way of expressing gratitude to medical science for the healthcare they have received in their lifetime (Bolt et al., 2010). These donor characteristics are studied in the context of broader societal changes such as an increasingly ageing population, secularization, and individualization. We argue that the choice for body donation in contemporary, individualized Dutch society is an autonomous way to give meaning and sense to life and death outside the framework of institutionalized religion.

METHODS

Quantitative Study

A total of 996 body donors registered at the database of the Department of Anatomy at the UMCG were selected according to date of registration. The first group contained all donors who registered in 2007-2008 (314 people) and the second group consisted of a selection of donors who registered in 2000-2006. The data-entry software program Epidata (2009) was used to enter the data. The resulting file was exported to the statistical software program SPSS, version 17.0.

To study respondents' notions of an afterlife, they were given a list with various statements about death. They were asked to rate the items on a 5-point Likert scale ranging from 1 (*I totally disagree*) to 5 (*I totally agree*). Factor analysis was used to reduce the set of items and Cronbach's alpha was used to estimate the internal consistency reliability. Furthermore, the respondents were asked about their view of the dead body, in an open-ended question. The various answers were coded into the categories displayed in Table 1.

Qualitative Study

Qualitative in-depth, anthropological interviews were conducted to better understand donor's notions of life and death. About two-thirds of the respondents ($n = 499$) to the body donor survey were willing to participate in a follow-up interview. Informants were first selected according to geographical location. Figure 2 shows the location of the respondents in the body donor survey and reveals that most of the respondents live in the northern part of the Netherlands.

Table 1. View of the Dead Body

	Responses	Percent
Useful for science	117	17.9
Remains of a living person	103	15.7
Empty container	57	8.7
Finished	54	8.3
Dead	52	8.0
I do not know	51	7.8
Metaphor	47	7.2
No significance	39	6.0
Soulless	32	4.9
Organic material/waste	31	4.7
Mortal remains	31	4.7
Other	31	4.7
Cold	5	0.8
Carrion of dead animal	4	0.6
Total	654	100

The main reason for this is that the UMCG is located in the city of Groningen, the capital of the northern Province of Groningen. Still, as the figure displays, the database of the UMCG includes registered body donors from all over the country.

For practical reasons, we chose to select only body donors living in the city of Groningen for the qualitative interviews ($n = 52$). We are aware that this implies that our qualitative data may have a “northern and city bias.” For instance, as Figure 3 shows, in general people in the northern part of the Netherlands are less church affiliated than people from other parts of the country. And more particularly, Groningen had the fewest church members of all cities in the Netherlands in 2008 (Arts, 2009).

In addition to regional differences in secularization, church affiliation is lower in the urban population. There are also regional differences in religious denominations. In 2008, the majority (58%) of the Dutch population considered themselves church members: Catholic (30%), Protestant (19%), Islam (4%), other religious beliefs (5%) (Arts, 2009). The majority of the population in the southern Provinces of Limburg and Noord-Brabant is Catholic. Protestantism is the major religion in most northern Provinces (Drenthe, Overijssel, Gelderland, Flevoland, Friesland) and in the southern Province of Zeeland (Arts, 2009).

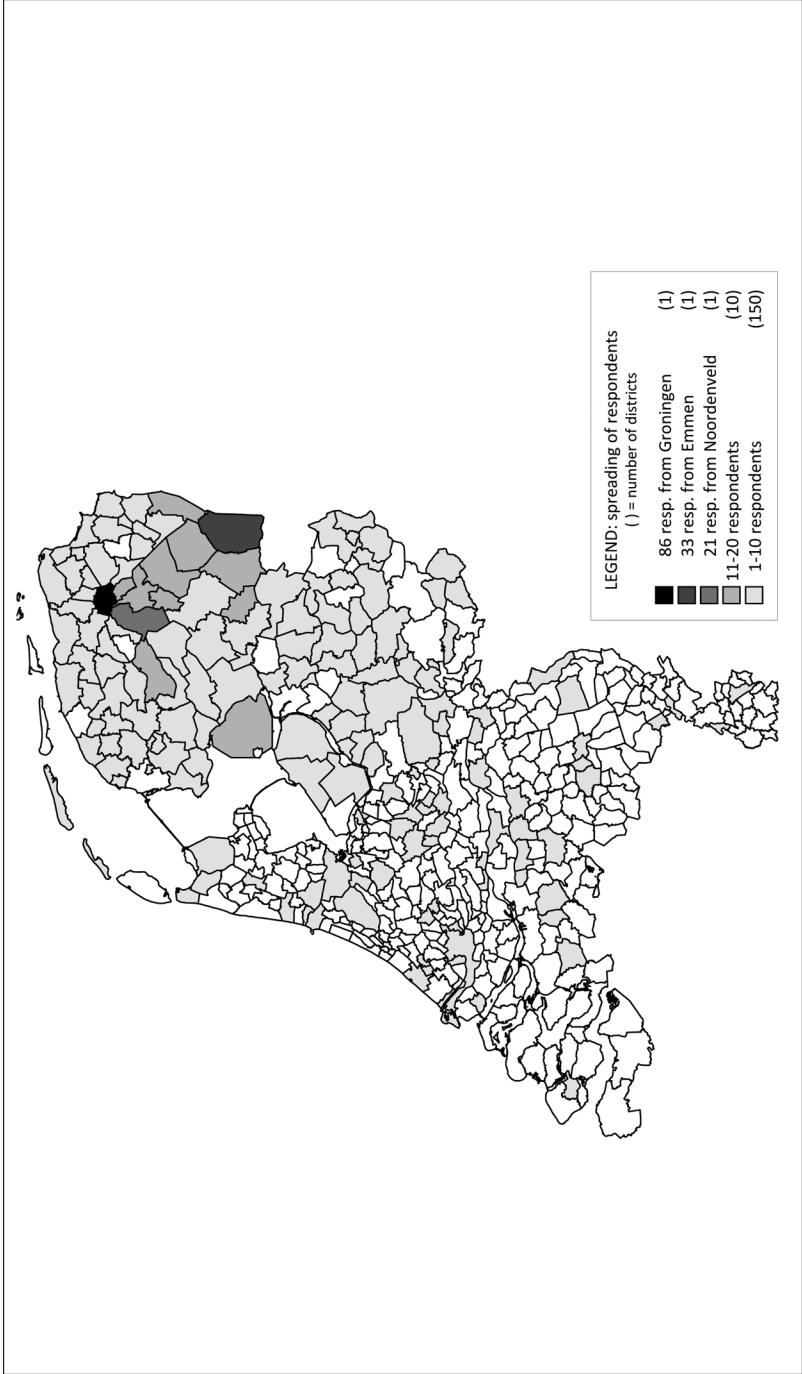


Figure 2. Geographic location of the body donor survey respondents ($n = 718$).

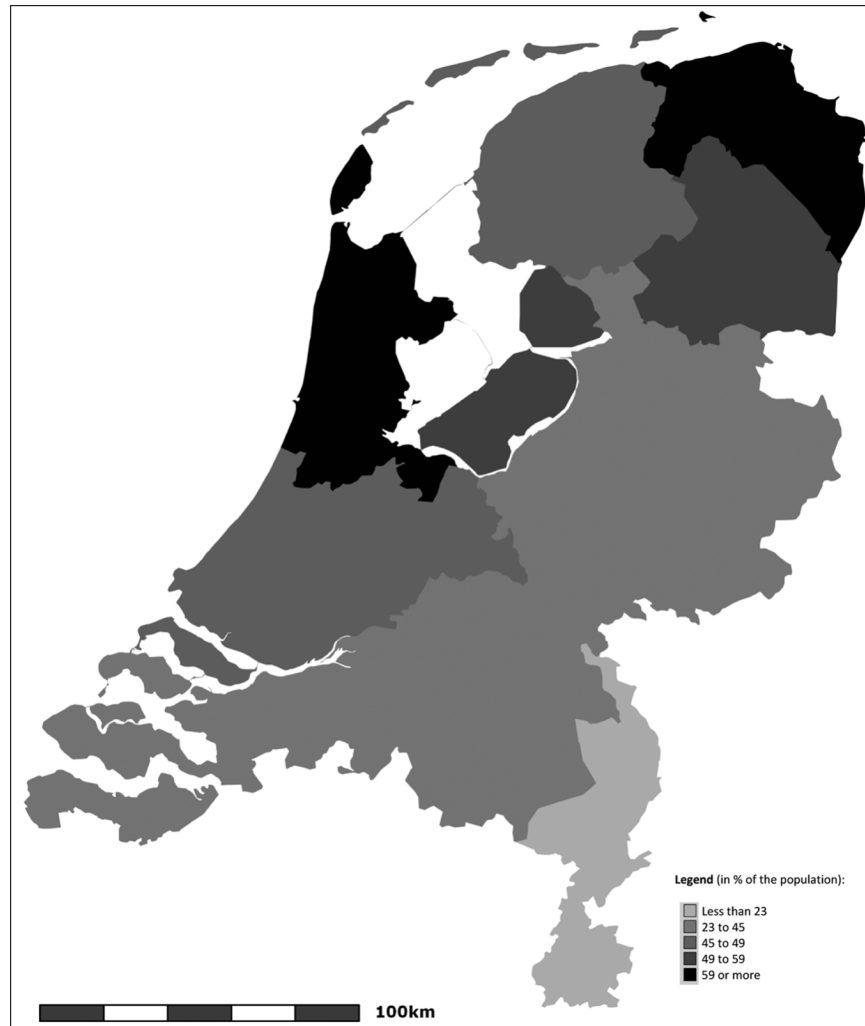


Figure 3. Non-church affiliated Dutch population per Province in 1999.
Source: Centraal Bureau voor de Statistiek, Den Haag/Heerlen, 2011.

As 2 years had passed since we conducted the survey, the database of the UMCG was consulted to verify whether donors were still alive. It turned out that six of the respondents living in Groningen had already died. Out of the remaining group ($n = 46$), 20 informants were contacted by phone to make an appointment for an interview. Three of the informants preferred an interview by telephone. During the telephone interviews, written notes were taken which were worked out

later. The other 17 body donors, which included four couples, were visited at their home in Groningen in September 2010. The semi-structured interviews, conducted by the first author, lasted between 1 and 5 hours. The audio taped interviews at the informants' homes were transcribed verbatim. Some of the informants were contacted again to collect additional data, to reflect on the data, or to ask permission for the use of their story in this article.

RESULTS

To clarify the source of the data, the donors from the survey are labeled as respondents and the donors from the interviews as informants. The survey had a high response rate of 76% ($n = 759$). Of the respondents, 51% were female and 49% were male. Only 2% claimed membership of an ethnic group different from the Dutch, such as English, German, Indonesian, Russian, and Surinamese. The male/female ratio of the informants ($n = 20$) was comparable with the survey respondents. There were 11 women and 9 men, all of whom described themselves as Dutch.

Self-Determination

Most of the respondents have or had a partner (80%). The majority of the respondents were married (51%), a smaller number of the respondents were widow/widower (19%), single (15%), divorced (11%), or had an official registration of cohabitation contract (5%). Two-thirds (69%) of the respondents had children. The average number of children was 2.5. About one-third of the respondents (37%) have a body donor partner. A small number of these respondents ($n = 27$) had a deceased body donor partner. There were also 89 heterosexual couples ($n = 178$) among our respondents in which both of the partners filled in the questionnaire.

For respondents, the main sources of information concerning body donation is family and friends (30%). Other sources are newspapers, UMCG publicity, obituaries, healthcare professionals, and television or radio. Half of the respondents (50%) know other people who are body donors and 31% actively encourage other people to become a body donor. We asked if the respondents were influenced by other body donors when making their decision. Only a minority (18%) indicated that this was the case. Most of them (71%) wrote that they were influenced by their family or partner. The results of the survey and interview data show that body donation is not only a very conscious choice, but also an autonomous decision. In answer to the survey question on how the donors got the idea, 12% of the respondents answered that they were not inspired by some extraneous source, but that their decision was derived from personal contemplation. Even the interviewed donor couples emphasized that although they both decided to donate, they each had made an autonomous decision.

Till Death Do Us Part?

Many body donors are convinced that, for them, body donation is the best possible choice. Therefore it is no surprise that the majority of the respondents (84%) think that it is very important that their wish will be fulfilled. One-fifth (21%) worries about the final acceptance of their body and 6% is concerned that family and friends will try to stop the donation. The Department of Anatomy of the UMCG advises body donors to maintain their funeral insurance, because the final acceptance of the body is not guaranteed. More than half of the respondents (58%) have funeral insurance. A small part (13%) indicates that they ended their funeral insurance following their registration as body donor. A minority of the respondents (23%) thinks that it is important that a funeral is organized after their death. Most of the respondents (78%) declare that they have spoken with their relatives about the consequences of body donation. One-fifth (22%) encountered resistance to their plans. When both partners have decided to donate and one of them dies, the wish to be a body donor is even more urgent for the surviving partner, as often the desire to be in the same final resting place as the deceased spouse grows. However, a partner resisting the idea of body donation can also be experienced as an obstacle that may prevent someone from registering. There were people who registered themselves only after the death of a spouse, because their partner had objected to their wish beforehand.

Euthanasia

In 2001, the Netherlands was the first country to legalize euthanasia. The Right to Die-NL (NVVE: Nederlandse Vereniging voor een Vrijwillig Levenseinde) is an NGO that promotes allowing people to freely choose to end their life. The group issues “advanced directions/living wills,” or documents in which members can state their wishes regarding euthanasia (NVVE, 2009). Almost a third of the respondents (29%) indicated that they have such a euthanasia passport. This means that they have already become a member of the NVVE. This does not mean that the remaining part (71%) of the respondents has negative feelings about euthanasia. From the interview data we presume that a majority of the donors have positive feelings about euthanasia, since none of the informants felt negatively about it.

Six of the informants even brought up a subject that has become known as “Drion’s pill.” The idea of “Drion’s pill” goes one step further than the legalized Dutch euthanasia. Huibert Drion (1917-2004) was a Dutch Supreme Court judge and professor of civil law who argued that people aged 75 or over should have the choice and control over the ending of their lives. His ideas were published in the Dutch national newspaper *NRC Handelsblad* in 1991. The NVVE elaborated on the self-determination in Drion’s ideas and started to promote “the last will pill,” a fictitious pill that is intended to provide the elderly with the means to end their lives at the moment of their choice (Sheldon, 2004).

Maybe it is not surprising that the informants, of whom so many strongly emphasized self-determination, brought up “Drion’s pill.” Mrs. Van Dijk, who is still living independently, was, for instance, very clear on this subject and said:

I do not ever want to go to an old people’s home. The minute they take me there, I will take the pill and then it is all finished. I absolutely do not want to go to such a place. It would drive me crazy. (Mrs. Van Dijk)

Although no such pill exists, Mrs. Van Dijk is convinced that she would find a way out. In a conversation about euthanasia with Mr. and Mrs. Smith they told me that they are advocates of “Drion’s pill”:

Mr.: I hope I will just die in my sleep.

Mrs.: Yes we all do hope that.

Mr.: I hope I will not go like my father who had lung cancer. He suffered so much when he died in the fifties. It was terrible. In these cases Drion’s pill would bring relief.

Mrs.: Yes, I would really like that. Just imagine you become an old woman, and then I mean really old. We are already aged, but imagine that you become a little old granny and that you are done in life. Then, I think you should have the right to decide when it is enough.

Mr.: Imagine yourself sitting in old people’s home.

Mrs.: Or that you are growing demented and are strapped to your chair and the only thing you do is sleep.

Mr.: Or that each night you are forced to watch terrible soap operas on television.

Mrs.: What kind of life is left for you then? I would not know. I do not know if you would still realize what is happening.

Mr.: Probably euthanasia would become very hard as well because you are not competent anymore. . . . That is why we decided to live in a flat this high . . .

Mrs.: Well, that would be the last thing I would do. That is horrible! Imagine that you stand on the windowsill. I would not even dare.

Mr.: I would.

Mrs. Van Dijk and Mr. and Mrs. Smith express their belief in the ability to freely choose to end one’s own life. Mrs. Van Dijk, in particular, does not want to lose her independence. Mr. and Mrs. Smith express the wish to be able to end their own life when life is subject to great suffering.

Non-Church Affiliation

The majority of the respondents (79%) described themselves as non-church affiliated. The remaining part (21%) indicated adherence to a religious denomination: Protestant (11%), Catholic (6%), other Christian belief (3%) or other non-Christian belief (1%). Fifteen of the informants were non-church affiliated, four were Protestants and one was Catholic.

The Meaning of Life

When the informants were asked about the meaning of life, they repeatedly mentioned the value of social relations to them. They frequently referred to the relationships with their children, like Mr. and Mrs. De Vries who were asked about their thoughts on the meaning of life:

The meaning of life is children. We have done everything we could for our children, so that they end up well. But, the meaning of life is also living as a couple together; life is beautiful. We have had a very nice life; we have no complaints. It is important that you make something of your life. Only a few more years and then we have been married for 60 years. It is important that you make something of your life, that you are good to the children, because we believe that dead is dead. Then, it is all over. (Mr. and Mrs. De Vries)

Similar to Mr. and Mrs. De Vries, parents often extend the meaning of life, their hopes and future on their children (Wheeler, 2010). During the interviews, other informants also extended the meaning of life to a larger social dimension, such as society in general. For instance Mrs. Smith said:

The meaning of life is trying to do things that are good for other people, certainly not harming others with words or in financial ways. Just helping others when you are needed. (Mrs. Smith)

Reciprocity, the interaction between giving and receiving, lies at the foundation of much in human life (Mauss, 1925/1990). In a way, the registration of body donation can be seen as a continuation of what many donors regard as the meaning of life: helping other people. This notion of reciprocity is also expressed in the major motivation for body donation: to be useful after death (93%) (Bolt et al., 2010). It is also seen in the willingness of the respondents for organ donation (54%), blood donation (34%), participation in volunteer work (48%), and donations to charities (90%).

Mutual Respect

A recurrent theme in the qualitative interviews was the emphasis many body donors put on mutual respect. For instance, Mr. Jacobs talked about the importance of the acceptance of people regardless differences in faith, age, or nationality:

It is important in life to accept people as they are, regardless of origin or belief. Despite the race, whether green, yellow or black or whatever, we need to respect each other. (Mr. Jacobs)

Their often strong conviction of accepting people as they are means that many of the donors also desire that other people hold the same notion and accept them as they are. Mr. Smith is one of the informants who do not like it when people impose things on him:

I detest it when people tell me what to do. For example, when I am at work and someone comes back from a holiday or a dinner and they tell me: "You should go there too, that would suit you." Then I always think: How do you know? I find it annoying when someone else decides what I like to do or eat. I will never tell someone what to do. It is up to people themselves. If you ask my opinion you can get it, but I will not decide what others should like. (Mr. Smith)

He follows the same line of thought on the issue of religion:

It is fine that there are people, whether they are Protestants, Catholics, Muslims, or Buddhists, who feel happy to be part of a religious community, but they should not tell me that I am supposed to like. They should not tell me what to do, because when they act like that, they will have an argument with me. (Mr. Smith)

Donors like Mr. Smith have the notion that people should be given the space and opportunity to make autonomous choices in life and they defend their own alternative choice for body donation on the same grounds. For instance, when I asked Mr. Kleine how his children reacted after hearing about his donation wish, he said:

I have raised my children with a strong emphasis on the importance of mutual respect and trust. Consequently, I got the idea that when I told them they totally respected my decision. (Mr. Kleine)

Messrs. Jacobs, Smith, and Kleine have argued that the possibility to make autonomous choices in life, such as their wish for body donation, is based on the principle of mutual respect and trust. They respect other people and expect the same in return.

Notions of Afterlife

Nine statements were used to examine the survey respondents' notions of an afterlife. For the purpose of data reduction, the correlation matrix of the items was calculated and subjected to principal-axis factoring. The statements have three factors in common: notions of a transcendent afterlife, notions of a personal afterlife, and the absence of a notion of afterlife. Table 2 offers an overview of the results and the reliability of the three sets of items, as determined

Table 2. Factor Analysis of Notions of Afterlife
(N = 724)

Dimensions and scale items	Factor pattern loadings			h ²
	I	II	III	
<i>I Notion of an transcendence afterlife</i> (Cronbach's alpha = .92)				
After death my soul will become part of an all-embracing entity	.73			.77
After death I will be admitted to a reality that transcends the present	.92			.81
After death a higher power will support me	.91			.79
<i>II Notion of a personal afterlife</i> (Cronbach's alpha = .76)				
After death I will live through the things I have left behind		.83		.65
After death I will live on in what I have done		.73		.59
<i>III Notion of no afterlife</i> (Cronbach's alpha = .79)				
Death makes an end with everything once and for all			.81	.65
There is no life after death			.78	.64
Explained variance (%)	49.98	14.24	5.76	
Total explained variance: 69.98%				

Notes: Roman numerals refer to the order in which the factors appeared in the oblique (oblimin) rotated solution using principal-axis factoring. Factor loadings lower than .30 (abs.) are not reported. Factor inter-correlations are 0.44 (I-II), -0.71 (I-III), and -0.23 (II-III).

by item analysis. The table shows that the scales possess quite acceptable psychometric properties. The factors account for a fair proportion of variance in the variables and Cronbach's alpha suggests a reasonable degree of internal scale consistency.

The sum of responses to the three sets of items was obtained. Table 3 presents the percentage of donors who tend to agree with a particular notion of an afterlife. Most of the donors (41.4%) hold the notion that there is no life after death, one-fifth (23.1%) believes in a personal afterlife, and the rest (14.9%) supports the notion of a transcendence afterlife.

View of the Dead Body

As can be seen in Table 1, almost one-fifth (17.9%) of the respondents considers the dead body as something that is useful for science. Other respondents refer to what the body once was: the remains of a living person (15.7%) or mortal remains (4.7%). One of them wrote: "The dead body is a body that shows the marks of my appearance and the things I have done recently. It tells the story of who I have been." There are many respondents who see the dead body as something that has ended: as an empty container (8.7%), as finished (8.3%), as dead (8.0%) or as having no significance (6.0%). A notable number of respondents (7.2%) described the dead body with a metaphor, for instance referring to a house: "A dead body is a house where I lived, of which the rent is terminated; so I left." In some of these metaphors the usefulness of the corpse is prominent, for instance: "A dead body is like a coat that hangs in the hallway that can be reused," or "[a] dead body is like a present to be opened, so that it can be useful to other people."

Body donation is an anonymous act; the giver and receiver remain unknown to each other. After the acceptance of the corpse by an anatomical institute, the body's identity is reduced to a number, and finally, the bodies are cremated and the ashes are scattered anonymously. Although the privacy and the anonymity of body donation are guaranteed by the anatomical institutes, some of the informants are motivated in particular to donate their body to science because

Table 3. Responses to Notions of Afterlife

	# agree	%	N
Notion of an transcendence aftelife ^a	108	14.9	725
Notion of a personal afterlife ^b	167	23.1	722
Notion of no afterlife ^b	300	41.4	725

^a# cases with summated score ≥ 12 on 3-15 scale.

^b# cases with summated score ≥ 8 on 2-10 scale.

of their unique and unusual bodies, a uniqueness that may interfere with their anonymity. One of the informants, Mr. De Jong, who was born in 1925 as an only son, tells:

My motivation for body donation is that my physical condition can be scientifically interesting. For my parents, it must have been an enormous shock when they saw me at birth. I do not have a left arm, I only have a right upper arm and my left leg is shorter. It was a different time, back then, but my parents left nothing to chance. They encouraged me to do everything just like other children. I went to a normal school, my mother sent me out to go shopping, and stimulated me to meet other people. I had a great childhood. (Mr. De Jong)

Another informant, Mrs. Janssen, is an 82-year-old woman who attracts attention to her body because she has several tattoos. She started to have tattoos only recently, when she was 72 years old. Articular degeneration in her hands forced her to remove her so beloved rings. Consequently she decided to replace her rings by tattooed ones. On different parts of her body she got a little rose, a salamander, a bird, a flower, and a sea horse. When Mrs. Janssen is thinking of the dissecting room she imagines that students will recognize her by the tattoos:

When I think of lying in the dissecting room, I say to myself: "They will recognize you from your tattoos" (she laughs). Then I imagine that they say: "Oh that is the lady with the tattoos." (Mrs. Janssen)

Mr. De Jong and Mrs. Janssen both express that their unique bodies will probably transcend death. They assume that their individuality will be retained and, even after death, people will recognize them by their unusual body.

Advanced Age

Ages of the respondents ranged from 20 to 101 years, with a mean age of 69.1 ($SD = 12.2$). Ages of the informants ranged from 41 to 90 years, with a mean age of 73 years. Thus, in general, people make the decision for body donation at an advanced age. An explanation can be found in the theory of positive aging, or the movement of older people toward what the sociologist Tornstam has called gerotranscendence (Tornstam, 2005), a theory that is applicable to some of the body donors. Gerotranscendence means that older people become less self-occupied and more selective in their social contacts and activities. For instance, some of the donors realize that their appreciation of social contacts has changed as they have gotten older. Some have noticed that with age they became more self-confident. For instance, Mr. Smith said: "When you are younger, you follow established lines, but it becomes easier to follow you own way when you are getting older." He also has some advice on how you can retain your happiness when you are getting older:

When you are ageing, it is important that you do the things you still can do, and that you do not focus on what you cannot do anymore, otherwise you will become an unhappy and grumpy old person. (Mr. Smith)

Mrs. Van Dijk holds the same attitude toward life. She is not focusing on all the things she would like to do but cannot anymore. More than once, the informants heave a deep sigh about the grumbling of old people. Mrs. Van Dijk does not like elderly people. That is why all her friends are at least 30 or 40 years younger. Mr. and Mrs. De Vries are very happy with each other, but they also do not like to be among elderly people. They dislike how, in their opinion, the elderly complain and gossip.

Besides a change in the appreciation of social contacts, gerotranscendence theory also argues that the elderly tend to have an increased association with past and future generations (Tornstam, 2005). By donating their body, people express their care about future generations. Some of the respondents stated that they want to donate their body for the sake of their offspring, especially their grandchildren or, more generally, future generations (Bolt et al., 2010).

Furthermore, gerotranscendence theory states that the elderly feel more connected to cosmic processes, tend to redefine their perception of life and death, and experience a decrease in the fear of death (Tornstam, 2005). Most informants claim to not fear death. However, some are afraid of a death-struggle and others are afraid of the death of their loved ones, like their children. Of course, they do not look forward to the deterioration of the body, because this could restrict their abilities and cause unwanted changes in their lives.

Health

About half of the donors (49%) consider body donation as a way to express gratitude to medical science and healthcare (Bolt et al., 2010). About one-third (29%) of the respondents judge their health to be fair or poor and 27% judge their health to be (much) poorer in comparison with 2 years ago. The Body Mass Index (BMI) of the respondents shows that only 1% is underweight (BMI < 18.5), 48% has a normal BMI (= 18.5-25), 38% is overweight (BMI = 25-30), and 12% is obese (BMI > 30).

Developments in Medical Science

Many of the body donors witnessed the major developments in medical science in the 20th century. Since their birth, medical science has developed enormously. Some donors even owe the fact that they are still alive to medical intervention. It is no surprise that many of them highly appreciate the benefits of healthcare. Mr. and Mrs. De Vries, for example, have had such good experiences with medical science that they decided to register as body donors as a way of doing something in return. Mr. De Vries explains that medical science has twice saved

his life. The last time was a few years ago when he was diagnosed with intestinal cancer at the age of 80. Thanks to good medical care he overcame this disease. However, his admiration for medical science started earlier in life, around the age of 60, on a biking holiday in Germany. When he was cooking at a campsite, one of the little gas cylinders he was using exploded. The burst of flame burnt his body:

I turned around and rolled over the floor to stop the flames. My wife screamed and tried to help me. The campsite owner called an ambulance. I did not yet understand the need for an ambulance. I still kept on talking of where we could cycle to the next day. It was only in the ambulance that I started to feel an enormous pain. I was hospitalized for five-and-a-half weeks, where I benefitted greatly from their superb healthcare. (Mr. De Vries)

Mr. De Vries is very satisfied with his life. He believes that death will end everything and therefore he tries to enjoy life even more. He is thankful for the several extensions of life he has been given and very pleased with the treatment in the UMCG. Thanks to body donation, his death will not be useless and he has the opportunity to contribute to medical science.

There are also donors who appreciate science for reasons that are not necessarily health related. Some of the donors are very interested in science in general. They have wide interests, and they like to be informed about various scientific subjects. One of the donors, Mr. Mulder, is a devout Roman-Catholic, and is inspired by the Dutch cardiologist Pim van Lommel's ideas on near-death experiences and the existence of an afterlife within an infinite consciousness. He said:

Science has always formed an important part of my life, in particular when I was a teacher. When you are dead, your body is just a thing, a coat of meat and bone. I am very interested in life after death. I do not fear death. I believe that the moment of death is the most magnificent moment in the world. Compared to that moment, life will be just a poor display. I think most people will experience a near-death experience before they die, with a tunnel and light. I really look forward to experiencing this myself. I am not tired of life, do not get me wrong, but I really look forward to it, especially the moment when you go through the tunnel toward the light. (Mr. Mulder)

Mr. Mulder was one of the two informants who were inspired by Pim van Lommel's "scientific" approach to the afterlife. His scientific interests are integrated in many aspects of his life, from his professional views as a teacher to his personal notions of a life after death. For some donors, science is a field they wish they could have participated in. Growing up in a post-war environment, in difficult economic times, only a few people had the chance to study. Body donation gives the opportunity to fulfill a sometimes long cherished wish to contribute to science.

DISCUSSION

We not only found that many donors have a supportive social network and meaningful social relationships (Bolt et al., 2010), they are often registered together with their partner or other family members. Comparable results were found in a study derived from application files of potential body donors in Ohio which showed a tendency of couples to apply together for body donation (Lagwinski, Bernard, Keyser, & Dluzen, 1998), and in a study of body donors in New Zealand that demonstrated that many donors have other family members who donate their body (McClea & Stringer, 2010).

Previous research has indicated that the donors' "spreading the word" by word-of-mouth advertising strongly influences the information and decision making of the donors (Bolt et al., 2010). This explains in part the rise in registration numbers associated with the so-called snowball effect; the more people register, the more people will inform others about the possibility, resulting in more registrations. In addition, the Dutch media has disseminated knowledge about body donation. In particular, the media coverage of the recent unveilings of body donor monuments in 2007 and 2009 has caused a peak in the number of registrations at the anatomical institutes.

Another part of the explanation for the rise of registration numbers can be found in broader societal changes in the Netherlands, such as an increasingly ageing population, individualization, and secularization. These changes might have created circumstances in which people have become more likely to register as a body donor. First, we will look at the proportional rise in the ageing population in the Netherlands. The year 2011 marked an acceleration in the rise of the ageing population as this is the year in which the so-called baby boom generation reaches the age of 65 (Garssen, 2011), the common age to retire from professional life in this country. However, the increase of the number of elderly already started in the year 2002, partially caused by the increase in the life expectancy of the Dutch, but mainly caused by the increase of birth rates 65 years ago. Although many people have heard of the baby boom after World War II, few people know that the Dutch birth rates already increased before the war, that is, from 1937 onward. The rise in registration numbers for body donors coincides with the increase of the ageing population that began in 2002. Since our data have shown that body donation is usually made at an advanced age and since this group is now increasing, it is likely that the registration numbers will follow the same trend.

Previous research of the database of the UMCG found a remarkable feature of the body donor registrations. A substantial number (on average 29%) of registered donors died within 1 year after registration. They seemed to have made a "last-minute" decision to donate their body (Wijbenga et al., 2010). The large proportion of last-minute donations shows that some of the body donors are probably (mortally) ill at the moment of registration. The disease might motivate

them to reconsider their way of body disposition. Furthermore, these “last-minute registrations” were significantly more likely to be males than females (Wijbenga et al., 2010). One can wonder if the men of this generation look upon death differently than the women. A partial explanation for this sex difference can also be found in the rise of the ageing population. In the Netherlands, for a long time, the number of male senior citizens was much smaller than the number of female senior citizens. However, gradually, this changed, and in 2000 the number of male senior citizens was increasing twice as fast as the number of female senior citizens. Since then, the ageing population of both sexes increased considerably. Nonetheless, the number of old men still grew faster than the number of old women (Garssen, 2011).

The second broader societal change we will investigate is religious secularization in the Netherlands. In 2008, 42% of the Dutch population described themselves as non-church affiliated (Arts, 2009). With 79% of the body donors being non-church affiliated, they are distinctively less church oriented than the Dutch population as a whole (Bolt et al., 2010). Research has indicated that people who go to church have more social contacts, give more help to others, and are more actively involved in organizations (Schmeets, 2009). Our study seems to contradict this notion, as the body donors are a group of people who are predominantly non-church affiliated and have an above average desire to help others.

The last broader societal change we will address is individualization. In general, religion in the Netherlands has become more individualized and people use various sources outside of institutional frameworks when they try to make sense of life and death (Becker & Hart, 2006). Body donation can be seen as an alternative way to give meaning to one’s existence outside the context of institutionalized religion. The emphasis of body donors on making autonomous choices in life suits today’s more individualized society. Of course, an individualized society in this sense does not mean that people do not care for others. Their wish to donate ensues from their desire to help others. In this way they give an individual and unconventional meaning to death.

Our previous research has showed that body donors have made a very conscious choice consonant with their personality, ranging from autonomous, nonconformist, headstrong, and self-determined to more sociable attitudes. Body donation gave people the opportunity to symbolically express their personality posthumously (Bolt et al., 2011). Furthermore, it is remarkable that as much as 11% of the respondents were involved in education and 25% were healthcare professionals (Bolt et al., 2010). Apparently, by donating their body people can also symbolically express their identity posthumously, for instance as a teacher or a healthcare professional.

Body donation can also be seen as an act of contemporary solidarity (Bolt et al., 2010). Today, people do not need solidarity for survival. Body donation as an act of solidarity has become an individual and conscious choice from someone

who chooses to help others, often in an abstract and anonymous way. The ones who profit from this kind of solidarity are often large groups and, therefore, recent years have seen a growing support for charities and humanitarian goals (Komter, 2005). Body donation, with its anonymous, conscious, and helping elements can also be seen as an act of contemporary solidarity.

To summarize, we can conclude that there are many different issues that have influenced the increase of registered body donors. In general, we observe that body donation in contemporary, individualized Dutch society is an autonomous choice in which people can give meaning and sense to life and death outside the framework of institutionalized religion.

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Direct reprint requests to:

Sophie Bolt, MA
 Center for Thanatology
 Faculty of Philosophy, Theology, and Religious Studies
 Radboud University Nijmegen
 The Netherlands
 e-mail: s.bolt@rs.ru.nl