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# **‘To Donate or Not to Donate? That is the Question!’ – an organ and body donation comic**

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## **Disclosure Statement**

The authors report no conflict of interest

# **‘To Donate or Not to Donate? That is the Question!’ – an organ and body donation comic**

## **Abstract**

Conversations surrounding end of life and death can be difficult or taboo for some, meaning that matters of organ and body donation are not widely discussed. *To Donate or Not to Donate? That is the Question!* is a comic developed to raise awareness and challenge common misconceptions about donation by encouraging the public to engage in informed discussions about the different options available. This case study proposes graphic medicine as an alternative method of presenting donation information to a public audience, and illustrates how the comic medium can communicate body donation information in an accessible and engaging way.

**Keywords:** graphic medicine, body donation, public engagement, medical art, comic

## Introduction

With less than 5,000 people dying in circumstances where organ donation is possible in the UK, every donor is valued. Between 2017 and 2018, the UK saw the number of deceased *organ* donors increase by 11% with 1575 donors registered (NHS Blood and Transplant, 2018; ONS, 2018). Even though the increase represented the largest rise in organ donors in 28 years, the devolved UK governments have replaced the ‘opt-in’ organ donation system with an ‘opt-out’ system (Wales in 2013, and Scotland and England in 2020) to combat critical shortfalls in available donor organs for transplantation due to public inaction (Miller, Currie and O’Carroll, 2019a). The number of people donating their *bodies* for medical education and scientific research is lower. In the same 2017-18 period, the Human Tissue Authority (HTA) – the organisation that regulates *body* donation – received 1,220 enquiries<sup>1</sup> about donation (HTA, 2018). Higher education institutions that rely on body donation for teaching and research are facing donation shortages in the near future (Cornwall, *et al.* 2012; Riederer, 2016; Saha, Sarkar and Mandal, 2015).

Conversations surrounding end of life and death can be difficult or taboo for some people. While people understand that death is inevitable, discussion on the subject is frequently avoided meaning that the topics of organ and body donation may not be widely discussed (BBC News, 2020). Organisations such as Hospice UK (<https://www.hospiceuk.org/>) are aiming to change public attitudes and behaviour around dying, death and bereavement through online campaigns such as ‘*Dying*

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<sup>1</sup> The HTA does not hold information on the number of bodies that have been received by medical schools in the United Kingdom (See [https://www.hta.gov.uk/sites/default/files/2014-03-26\\_FoI\\_response\\_body\\_donation\\_statistics.pdf](https://www.hta.gov.uk/sites/default/files/2014-03-26_FoI_response_body_donation_statistics.pdf))

*Matters*’ (<https://www.dyingmatters.org/>) and ‘*Awareness Week*’ but the topic of donation is not included in their campaigns. Under the new opt-out organ donation system, it is the role of “*the families to confirm the deceased’s objection to donation, otherwise consent is deemed*” (Miller, Currie and O’Carroll, 2019). It is therefore increasingly important for people to discuss their wishes with their relatives (Coad, *et al.* 2013) especially with those who are fearful of the topic.

Engaging the publics<sup>2</sup>, including those who have previously discounted donation, in discourse about the different types of donation and encouraging fact checking about the subjects is important. Creative interventions could assist in alleviating worries raised from the shift to an ‘opt-out’ organ donation system, and increase donation literacy to reduce any future shortages in body donations for research and education.

This paper considers if a comic that describes options for donation, highlights the rigorous nature of the donation journey and busts common myths, could be a potentially valuable and effective resource. The comic may help the publics in better understanding the types of donation, identify false information circulated online and in social circles, and potentially increase willingness to donate.

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<sup>2</sup> Thinking of the public as an undifferentiated whole is unlikely to help develop any kind of purposeful, responsive and respectful engagement. One commonly used tactic is to replace the term ‘public’ with ‘publics’, to try to convey this complexity (Knowles, 2017).

## ***Organ and Body Donation Attitudes***

According to the NHS Blood and Transplant organ donation website

([www.organdonation.nhs.uk](http://www.organdonation.nhs.uk)), the most frequently asked questions (FAQs) about organ donation include:

- *Doctors won't save me if I'm an organ donor*
- *I might not really be dead*
- *Organ donation will leave my body disfigured*
- *I'm too old, you wouldn't want my organs*
- *I can't donate blood, so I can't be a donor*
- *Organ donation is against my religion*
- *What if my relatives object?*
- *Donated organs/bodies can be bought and sold.*

Similar FAQs can be found on the HTA website (<https://www.hta.gov.uk/>) about body donation, evidencing a pattern of shared anxiety and confusion between each donation process that might contribute to increased apprehension and worry for those thinking about donation.

In a systematic review of qualitative literature on the topics of organ and body donation, Irving *et al.* (2011) states that there is a lack of accessible information available about donation. The authors report that urban myths surrounding the topic have become 'truths,' often leading to increased fears about donating. The review suggests that there are a number of influencing factors linked to common misunderstandings. These are linked to complex issues including "*a distrust of the medical system*" and "*ignorance about the donation process*" (Irving *et al.* 2011).

Even though many people have significant reservations about the donation process, the majority have positive attitudes about donation (Irving *et al.* 2011). The decision to be a donor is influenced by:

- *relational ties*
- *religious beliefs*
- *cultural influences*
- *family influences*
- *body integrity*
- *previous interactions with the health care system—medical mistrust, validity of brain death and fear of early organ retrieval*
- *the individual's knowledge about the organ donation process*

Conesa, *et al.* (2004) highlights that those who have limited higher education schooling are less aware about the types of donation, and consideration and discussion about donation of the body to medical education is seldom discussed (Khatri and Modi, 2019).

Richardson and Hurwitz (1995) surveyed potential donors' attitudes towards *body* donation. The results suggested that there was some anxiety surrounding the treatment of the participant's bodies after donation and many of the participants perceived there to be a shortage of bodies for dissection – a demonstrated integral teaching and learning method that requires a consistent supply of cadavers (Khatri and Modi, 2019). However, there was a willingness to donate their bodies if they knew that it would be a valuable gift and “*help others, to further medical knowledge and education, and to be useful after death*” (Richardson and Hurwitz, 1995).

Although this study was conducted over 20 years ago and attitudes may have changed, it highlights the importance of informing the public of the potential benefits of

*body* donation for teaching and research. It is important to note however that Richardson and Hurwitz's survey was conducted before the of the organ retention scandal at Alder Hey Hospital, Liverpool in the 1990s (Tomasini, 2017), which led to the consolidation of the Human Tissue Act (1961), the Anatomy Act (1984) and the Human Organ Transplants Act (1989), as the Human Tissue Act (2004). While there are no known published studies that demonstrate a link to a decline in body donation after the Alder Hey scandal explicitly, donation rates are dependent on public opinions, which may be influenced by external events (Asher, et al. 2005). The widespread media coverage of the Alder Hey scandal may have led to an increased distrust and hesitancy in seeking out donation programmes and contributed to the circulation of myths and rumour about body donation.

In a recent survey of 1202 members of the UK public about their thoughts on the introduction of the 'opt-out' *organ* donation system, researchers from the University of Stirling found that current NHS myth-busting campaigns, which focused principally on dissemination of facts, were less effective than "*narrative communication campaigns that employ fictional testimonies to refute organ donation myths*". Campaigns containing personal narratives have been shown to increase donor intentions (Miller, Currie and O'Carroll, 2019b). Those who tend to have favourable attitudes towards organ donation are medical staff who have more insight into the subject of donation, but this is not representative of the general population (Coad, et al. 2013; Flodén and Forsberg, 2009).

### ***Organ and Body Donation Information Materials***

Body donation and organ donation are regulated by two different donation systems in the UK. *Organ* donation is regulated by the NHS and *body* donation is governed by the



Human Tissue Act (2004) and regulated by the Human Tissue Authority (HTA) with further differences to regulation in Scotland where donations are governed by the Human Tissue (Scotland) Act (2006). There is a substantial volume of freely available information about different kinds of donation available online; from brain and tissue donation for research to donation of bodily fluids for transfusion, but this information is not easily located in one place.

The Human Tissue Authority's website contains a comprehensive repository of information relating to *body* donation regulations and the laws put in place to protect donors and their families. This includes the 'Body, Brain and Tissue Donation Pack' (<https://www.hta.gov.uk/sites/default/files/BBT%20Donation%20Pack%20Nov%2015.pdf>), which is a printable PDF version of the information on the website. Higher Education Institutes (HEIs) that have body donation programmes for dissection make their legal paperwork and detailed donation instructions available on their websites as downloadable donation packs. For example, the 'Body Donation Pack' from the University of Liverpool (<https://www.liverpool.ac.uk/media/livacuk/educationdirector/Body,Donation,Information,Booklet.pdf>). The NHS Blood and Transplant website has a number of *organ* donation materials available for download (<https://www.nhsbt.nhs.uk/how-you-can-help/get-involved/download-digital-materials/organ-donation-teaching-resources/>), including PowerPoint slides, activity sheets and case studies that aim to educate and encourage discussion about donation with friends and families. The intention of both the organ and body donation packs is to provide a diverse group of individuals with access to the essential information.

While it is important to ensure that any persons wishing to donate their body or organs are presented with enough information to make an informed decision, there

appears to be a weakness in the visual presentation of the donation packs that would aid the decision-making process. Currently, there are no published studies that look specifically at the accessibility and effectiveness of resources available online for potential donors. For people with limited literacy levels or for those who are unfamiliar with the terminology used to describe donation, the text-heavy donation packs and websites might appear daunting and inaccessible.

The National Literacy Trust estimates 7.1 million people in England have poor reading ability, meaning that they can understand short simple texts on familiar topics but reading information on unfamiliar topics can be difficult (National Literacy Trust, 2019). Finan (2002) states that the majority of health promotion and education materials place emphasis on images, with the purpose of the text being to explain or anchor the message conveyed by the image. Images in this context are proven to increase attention and recall of key health information and lower the risk of misunderstanding (Houts, *et al.* 2006).

Simple drawings versus complex health illustrations have been shown to be favoured by both adults and children. Delp and Jones (1996) suggest that adults with lower literacy benefit from the addition of pictures to text when reading health information, and that cartoons improve comprehension of instructions. Moll (1986) reported that health information materials containing cartoon drawings have the highest level of comprehension over other visual modes including photographs, especially amongst children. The dominance of images in health information can also influence decision-making (Houts, *et al.* 2006).

A visual demonstration of essential donation information could be useful in order to increase donation literacy, whether solely as a supplementary provision in current donation packs or as a targeted strategy to provide alternative means of access to

the topic. Comics have the ability to articulate aspects of social experience that we collectively experience. They are expressive tools that enable readers to understand the complexities of illness (Kasthuri and Venkatesan, 2015; Venkatesan and Saji, 2016) and could be suitable solutions to the problem.

### ***Graphic Medicine***

We live in a visual culture and acquire most of our information through images (Elkins, 2009). Comics written for adults are a popular and engaging way of transferring health information as they are able to recruit readers from outside the usual comic demographic (Williams, 2012), and have the ability to remove complex vocabulary and replace it with images that are easier to understand (de Rothewelle, 2019). Comics employ methods of visual storytelling that are more successful than the use of images and text alone, with studies showing that combining pictures and text in comic format increases understanding (Venkatesan and Saji, 2016).

‘Graphic medicine’ is a relatively new concept circulating in medical education communities. In the *Graphic Medicine Manifesto* (2015), M.K. Czerwiec explains that “*graphic medicine combines the principles of narrative medicine with an exploration of the visual systems of comic art, interrogating the representation of the physical and emotional signs and symptoms within the medium.*” Green and Myers (2010) elaborate on this definition by stating that graphic medicine stories are a valuable tool for presenting information on difficult or often misunderstood topics.

Comics can be penned in both a “*visual language (images) and a written language (text) with content distributed on a page in any combination of single images, sequential images, some writing or no writing*” (Cohn, 2013). Structured, sequential images contained within panels are easier to understand than isolated, unrelated images,

and gaps between the panels create pauses and breaks that encourage reading (Cohn, 2013; McCloud, 1993). The back-and-forth between the text and the image is subtle and complex (Williams, 2012) and is similar to experiencing events in real life (McCloud, 2006).

Although comics are often viewed as too simplistic or childish and reading them has been described as involving “*a lot of work; [where] images and words can give similar messages or suggest different meanings*” (Raphael and Rowell, 2018), they are particularly favoured by those with lower literacy levels (Green and Myers, 2010; Waite, 2019). Humour in comic narratives engages the reader's attention without trivialising the subject, especially with topics that might otherwise be avoided (Williams, 2012). For example, *Forensic Facts* is an Instagram comic series (<https://www.instagram.com/forensicfacts/>) that uses humour specifically to dispel pop-culture myths about forensics. Humour can also make readers of health messages less distrustful and accepting of unfamiliar facts (Hendricks and Janssen, 2017).

For the most part graphic medicine comics integrate subjective perceptions with objective truths that are often focused around personalised iconographies (Kasthuri and Venkatesan, 2015), and these attributes makes comics a highly communicative and ideal medium to represent shared experiences (Venkatesan and Saji, 2016). There is potential value in a resource that not only informs but initiates discussions and decision-making between people about donation. The affordances of graphic medicine suggests that comics are appropriate donation-literacy tools. If many people are ill-informed about the topic of donation, and available information about donation is difficult to locate in one place, could a comic about the different types of donation be a useful resource that facilitates informed decisions to donate or not to donate?

## Method

Adopting a practice-based methodology, the driving aim of this project was, through experimental design, to develop a comic that encourages the public to engage in informed discussion about the different types of donation and their benefit to society, in particular body donation.

The word “donation” most commonly means presenting an object, possession or your body as a gift to benefit a cause. From a textual and visual analysis of the available organ and body donation materials available online, including the NHS Blood and Transplant organ donation website and body donation packs from HEIs with body donation programmes, a singular comic titled *To Donate or Not to Donate? That is the Question!* was developed. Digital software was used to design and illustrate the comic, and supporting statistics were incorporated from the HTA and NHS Blood and Transplant websites. Consultation with an anatomist at the Human Anatomy Resource Centre (HARC) at the University of Liverpool, which currently has an active body donation programme, ensured that anatomical representation and body donation details were correct.

Most graphic medicine comics adopt a relatively simple style of illustration, and while drawing techniques and styles can vary per comic, it appears as though there is no right or wrong way to illustrate comics. Waite (2019) proposes a number of recommendations for the development of medical comics and specifically highlights that simple line styles, a high-contrast colour palette and sans serif font choices are effective tools in producing illustrations specifically for a broad spectrum of readers, and that anonymised characters allow the reader to see themselves reflected in the narrative (McCloud, 1994). For *To Donate or Not to Donate? That is the Question!*, a

series of illustrations were accompanied by text panels in a grid formation, and a singular character titled 'Donnie' led the reader through the information.

To create the illustrations an Apple Pencil was used in conjunction with the apps Procreate and Affinity Designer on an Apple iPad Pro. Initial storyboards by produced by hand and then digitised (figure 1). The refined storyboard and draft illustrations were created in Procreate (figure 2) but as the app produces raster based images, the illustrations were exported to Affinity Designer where they were converted to vector illustrations that could easily be refined and scaled up to poster size or for web display without losing quality.

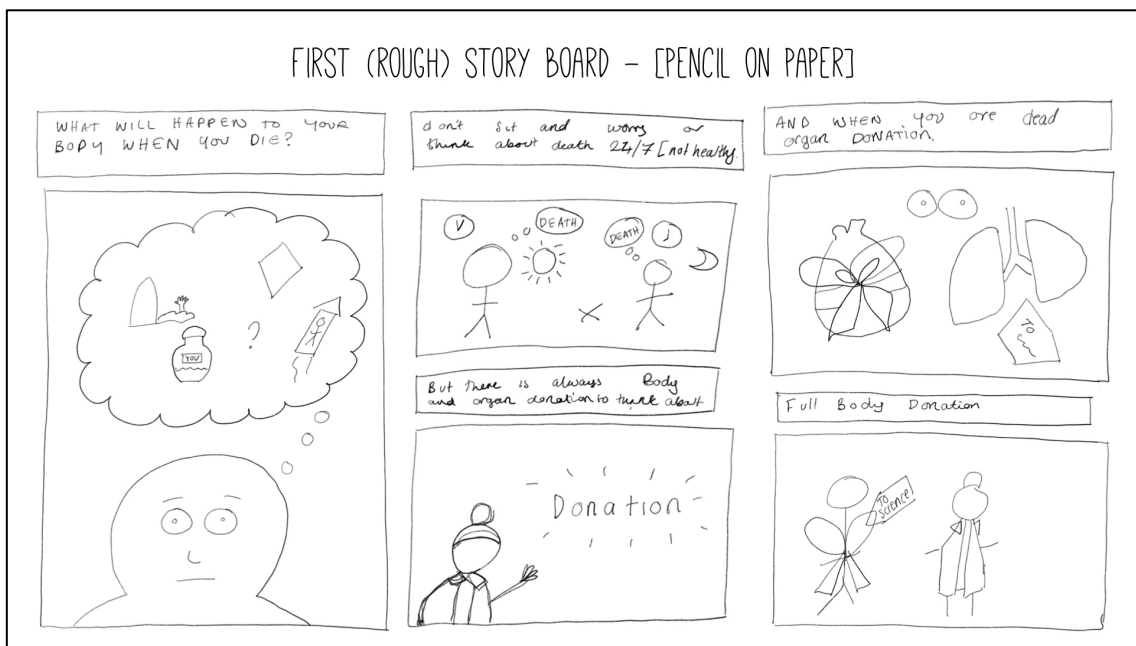


Figure 1 – Initial storyboarding for *To Donate or Not to Donate? That is the Question!*

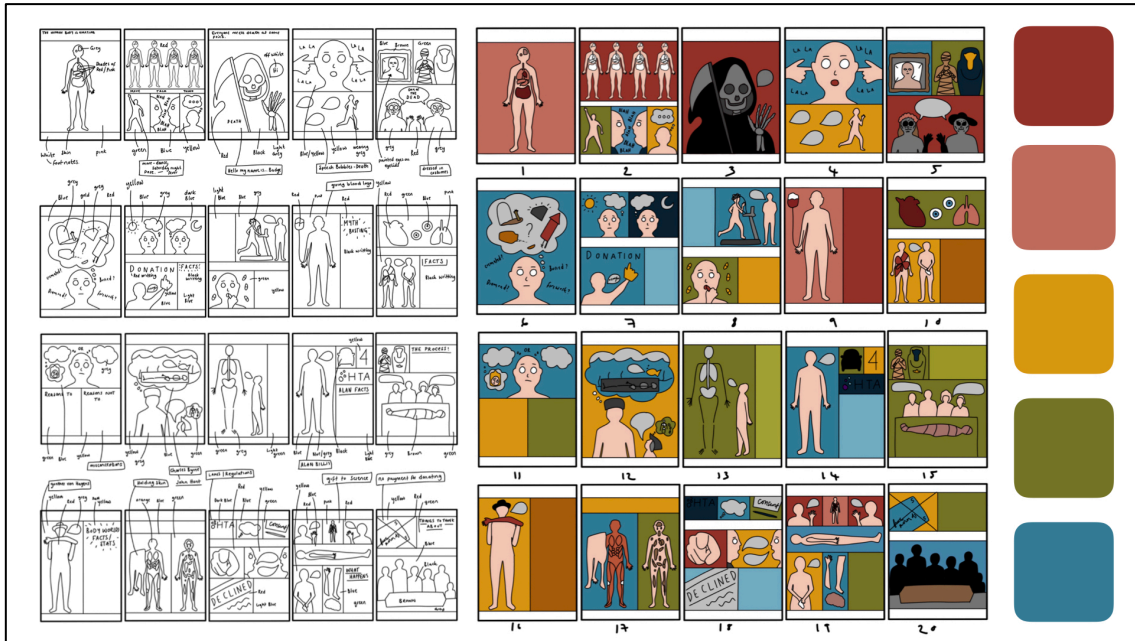


Figure 2 – Refinement of storyboard for *To Donate or Not to Donate? That is the Question!* Jessica Irwin©

The comic's narrative introduces the reader to types of donation including, organ donation for transplantation; whole body donation to medical science; donation of clinical imaging data for research, and donation of bodily tissues and fluids to help others (figure 3). It also questions some donation misconceptions and myths, including common fallacies that your head might end up in a jar after death if you donate your body to science (figure 4). A number of case studies that poke fun at outrageous and controversial stories of body theft and public display were also included to help to dispel any myths that your body could be sold and put on public display in a public museum without your permission.

One historical and two contemporary instances of controversial post-mortem display were researched and selected for inclusion in the comic. These include, the story of Charles Byrne (also known as the Irish Giant) whose 18<sup>th</sup> century skeletal remains were until recently on display at the Hunterian Museum at the Royal College of

Surgeons in London without his consent; the ‘modern mummy’ Alan Billis, whose remains are stewarded by the Gordon Museum of Pathology at Kings College London and was mummified as part of an experiment that was documented in a Channel 4 TV show in 2011; and the early Gunther von Hagens *Body Worlds* exhibitions that raised discussions as to whether there was appropriate consent gathered for the bodies that were plastinated and displayed in the touring exhibits (figure 5).

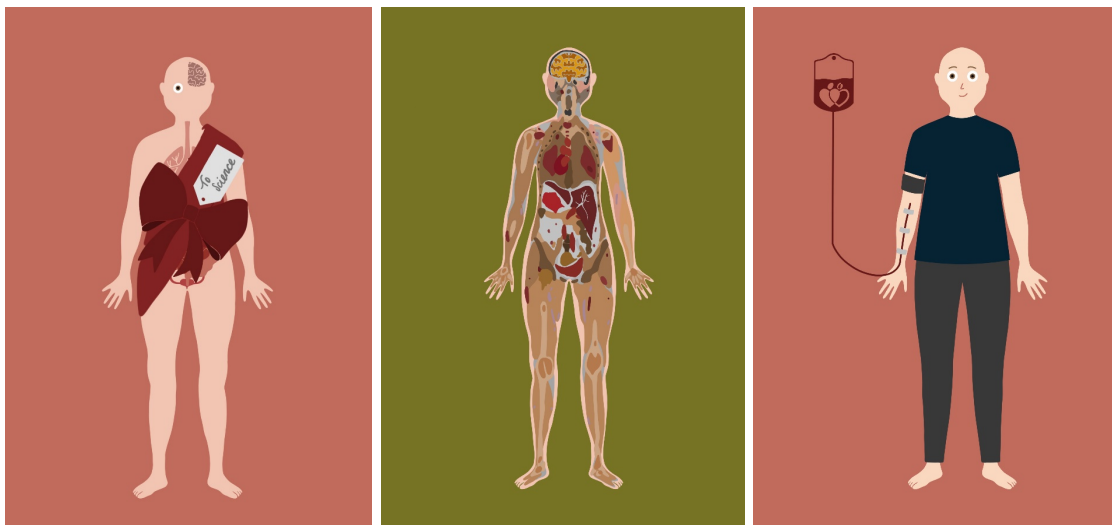


Figure 3 – Illustrations demonstrating some available types of donation; to medical science, for medical research, and bodily tissue/fluids. Jessica Irwin©





Figure 4 – Illustrations alluding to a fear of death and a donation myth that your head might end up in a jar after death if you donate your body to science. Jessica Irwin©



Figure 5 – Donation misconceptions; mummification and display in museums, plastination and display as part of von Hagens' *Body Worlds*. Jessica Irwin©

A layout for the comic was produced in Adobe InDesign CC 2018 with a suitable bleed and in CMYK colour mode. Here, the illustrations and accompanying texts were combined over 10 double-sided pages. Layout adjustments were made so that

an exported PDF version of the comic for print could be folded and stapled. An RGB colour mode PDF version of the comic was also produced, suitable for screen-based display.

*To Donate or Not to Donate? That is the Question!* was exhibited at Liverpool School of Art and Design Master's Degree Exhibition in the John Lennon Art and Design Building for two weeks in September 2018. The exhibition was open to the public during building opening hours. Here the public were able to view the comic and interact with supporting research materials. The comic was also exhibited at the *Encountering Corpses 4: 'Encountering the Post-Human Corpse: Death and Digital Technology'* symposium in Manchester on the 10<sup>th</sup> November 2018.

For display at the exhibition and symposium, additional materials were produced to supplement engagement with the comic and to engage younger audiences with conversations about death and body donation. These included a series of paper cut-out dolls that were inspired by anatomical fugitive sheets (figure 13), colouring-in sheets (figure 14), a soft toy labelled 'Donnie the Donation Doll' (figure 15), and a research table with snippets of background information about the project (figure 16). The materials were created primarily for use in family group activities where they might inform and influence donation decision-making and allay any reservations about the donation process by engaging in positive social interactions (Irving *et al.* 2011). The comic and supporting materials were displayed alongside current legal paperwork and the University of Liverpool 'Body Donation Pack'.

Due to time limitations associated with obtaining University ethical approval during this short three-month postgraduate project, it was not possible to gather formal qualitative feedback from bequeathal managers and a socio-culturally diverse range of members of the public for critical analysis of the impact of the comic on informed

decision-making. Nine students from the 2017-18 cohort of the MA Art in Science programme at Liverpool John Moores University reviewed the comic and exhibition, and informal feedback was recorded from the consulting anatomist from HARC at the University of Liverpool.

**Results: *To Donate or Not to Donate? That is the Question!* Comic**

Below are a selection of pages from *To Donate or Not to Donate? That is the Question!*



Figure 6 - Front cover of *To Donate or Not to Donate? That is the Question!* and the supporting character 'Donnie the donation doll' Jessica Irwin©



Figure 7 – Pages from *To Donate or Not to Donate? That is the Question!* that discuss death fears and statistics. Jessica Irwin©



Figure 8 – Pages from *To Donate or Not to Donate? That is the Question!* that discuss the possible journey that your body take take after death. Jessica Irwin©



Figure 9 – Pages from *To Donate or Not to Donate? That is the Question!* that differentiate between differing donation options, and list some common reasons given for donating or not donating. Jessica Irwin©



THERE ARE RULES AND REGULATIONS IN PLACE TO PROTECT YOU AND YOUR LOVED ONES IF YOU ARE CONSIDERING DONATING YOUR BODY TO SCIENCE FOR EDUCATION OR RESEARCH.

**HTA**  
HUMAN TISSUE AUTHORITY  
www.hta.gov.uk

**UNDERSTAND**

**Consent**

THE DECISION HAS TO BE MADE BY YOU, NO ONE ELSE CAN MAKE IT FOR YOU. IT'S A GOOD IDEA TO DISCUSS YOUR PLANS WITH YOUR FAMILY/FRIENDS AS THEY WILL HAVE OPINIONS.

I'M GOING TO DONATE MY BODY

OKAY! IF THAT'S WHAT YOU WANT?

**DECLINED**

REASONS WHY YOUR BODY MIGHT NOT BE ACCEPTED:  
 - POST-MORTEM EXAMINATION  
 - WIDESPREAD CANCER  
 - INFECTIOUS DISEASE: E.G. VIRAL HEPATITIS, HIV, ETC.  
 - SOME FORMS OF DEMENTIA  
 - JANDICES OF INFECTIVE ORIGIN  
 - MS (MULTIPLE SCLEROSIS): DEPENDING ON THE SEVERITY.  
 - DEEP SCARS: SMALL SCARS MAY BE ACCEPTABLE.  
 - RECENT OPERATIONS: WHERE THE WOUND HAS NOT HEALED (USUALLY WITHIN 12 WEEKS OF AN OPERATION).  
 - OBESITY: EXCESSIVE WEIGHT IN PROPORTION TO HEIGHT. (ON OCCASION THE MORTUARY MAY BE FULLY OCCUPIED.)

THE LAW SAYS THE DECISION OF WHETHER OR NOT TO DONATE IS UP TO YOU. "WHILE YOUR FAMILY HAS NO LEGAL RIGHT TO OVERRIDE YOUR DECISION, IN PRACTICE, THEIR SUPPORT IS ALWAYS SOUGHT." (ONSORGANIZATION, 2016)

IF YOUR BODY IS ACCEPTED THE PROCESS IS EXTREMELY EASY FOR YOU AS YOU'LL BE DEAD! YOUR BODY COULD THEN BE USED TO EDUCATE MEDICAL OR SURGICAL STUDENTS.

I'M A MEDICAL STUDENT

I'M GOING TO BE A SURGEON

I EMBALM THE BONES!

IF ACCEPTED YOUR NEXT OF KIN WILL NEED TO:  
 1. REGISTER THE DEATH WITH THE REGISTRAR AND TELL THEM OF THE WISHES OF THE DECEASED. THEY WILL BE ISSUED WITH A CERTIFICATE OF BURIAL OR CREMATION AND A DEATH CERTIFICATE. UNDERTAKERS CANNOT COLLECT THE DONOR WITHOUT THEM.  
 2. THEY WILL THEN BE SENT A YELLOW FORM (HTL) OR A GREEN FORM (HTZ) AN APPLICATION FOR CREMATION FORM AND AN INSTRUCTION FOR CREMATION FORM.  
 3. AT THEIR REQUEST, FAMILIES CAN ATTEND THE CREMATORIUM AND THEY CAN ALSO HAVE THE ASHES RETURNED TO THEM.

SMALL AMOUNTS OF FORMALDEHYDE, METHANOL AND PHENOL ARE DILUTED WITH WATER AND A CANNULA IS USED TO INTRODUCE THE EMBALMING FLUIDS INTO THE FEMORAL ARTERY: THE BLOOD IS THEN REPLACED BY THE EMBALMING FLUID.

Figure 10 – Pages from *To Donate or Not to Donate? That is the Question!* that describes regulation and donation for use in medical education. Jessica Irwin©

YOU DON'T HAVE TO BE DEAD TO DONATE YOUR BODY TO SCIENCE. THERE ARE SOME OPTIONS YOU CAN BE INVOLVED IN WHILE YOU'RE STILL LIVING IN YOUR BODY, SUCH AS...

**HUMAN RESEARCH EXPERIMENTS:**  
 MANY LOCAL UNIVERSITIES WILL REQUIRE HUMAN VOLUNTEERS FOR ALL SORTS OF DIFFERENT EXPERIMENTS. FOR MANY OF THESE STUDIES, ALL THEY ASK FOR IS NORMALLY HEALTHY PEOPLE, OFTEN WITHIN A VARIETY OF DIFFERENT AGE RANGES, TO PERFORM SOME BASIC TASKS OR PHYSICAL ACTIVITY.  
 IT'S ALL VERY SAFE, AS EACH EXPERIMENT HAS TO GO THROUGH STRICT ETHICAL APPROVAL. SOME WILL EVEN PAY YOU FOR YOUR TIME OR TRANSPORT COSTS.

YOU'RE DOING GREAT!

HOWEVER THERE IS THE POTENTIAL OF SIDE EFFECTS, SO CONSIDER THESE OPTIONS CAREFULLY AND PROCEED WITH CAUTION!

**DRUGS/CLINICAL TRIALS:**  
 THIS IS THE MOST RISKY OF ALL THE OPTIONS, AS THESE DRUGS ARE STILL IN THE EXPERIMENTAL STAGE, SO THERE IS A LIKELIHOOD OF SOME PHYSIOLOGICAL OR METABOLIC SIDE EFFECTS. SO PROCEED WITH CAUTION IF THIS IS SOMETHING YOU ARE CONSIDERING! (IT IS BEST TO CONSULT YOUR GP BEFORE APPLYING.) HOWEVER THESE TRIALS ARE NECESSARY, AND IF YOU ARE WILLING TO TAKE THE (MINOR) RISK, MANY OF THESE TRIALS DO CARRY A FINANCIAL INCENTIVE.

HOSPITALS AND CHARITIES ARE OFTEN LOOKING FOR HUMAN VOLUNTEERS TO BE PART OF CLINICAL TRIALS. INFORMATION ABOUT THESE CAN BE FOUND ONLINE VIA THE NHS CHOICES WEBSITE: [HTTPS://WWW.NHS.UK/CONDITIONS/CLINICAL-TRIALS/](https://www.nhs.uk/conditions/clinical-trials/)

THE MOST WELL KNOWN OF THESE (LIVING) OPTIONS IS DONATING BLOOD. MANY PEOPLE HAVE MISCONCEPTIONS ABOUT HOW BLOOD DONATION WORKS, SO MANY PEOPLE JUST DON'T BOTHER.

**MYTH BUSTING!**  
 -I'VE BEEN TRAVELLING IN SOME HIGH RISK AREAS SO I CAN'T DONATE. - MOST PEOPLE ARE ABLE TO DONATE AFTER TRAVELLING, HOWEVER THIS IS OFTEN DONE AFTER A PERIOD OF NO TRAVEL, FOUR TO SIX MONTHS AFTER RETURNING.  
 -LOTS OF PEOPLE GIVE BLOOD SO I DON'T NEED TO BOTHER. - THE AVERAGE AGE OF A BLOOD DONOR IN THE UK IS 44, MEANING THERE IS A GREAT NEED FOR MORE YOUNG PEOPLE TO DONATE BLOOD AND BECOME REGULAR BLOOD DONORS, TO REPLACE THOSE WHO CAN NO LONGER DONATE, SUCH AS PEOPLE OVER THE AGE OF 70.  
 -IT IS ESSENTIAL THAT THERE IS A VARIETY OF DIFFERENT BLOOD GROUPS AVAILABLE AT ALL TIMES. BLOOD IS MADE UP OF A NUMBER OF DIFFERENT COMPONENTS: RED BLOOD CELLS, WHITE BLOOD CELLS, PLATELETS AND PLASMA. EACH OF THESE COMPONENTS HAS A DIFFERENT SHELF LIFE. PLASMA CAN BE STORED FOR UP TO 3 YEARS, RED BLOOD CELLS CAN BE STORED FOR UP TO 35 DAYS AND PLATELETS FOR ONLY 7 DAYS.  
 -I HAVE A TATTOO OR PIERCING AND CAN'T DONATE DUE TO THE RISK OF INFECTION. - YOU MUST WAIT FOUR MONTHS FROM THE DATE OF YOUR LAST TATTOO OR PIERCING TO GIVE BLOOD. IF YOU GIVE BLOOD BETWEEN FOUR MONTHS AND A YEAR OF HAVING A TATTOO OR PIERCING DONATION STAFF WILL DO EXTRA SAFETY TESTS.  
 BEFORE YOU GIVE BLOOD YOU SHOULD EAT REGULAR MEALS, DRINK PLENTY OF FLUIDS AND AVOID VIGOROUS EXERCISE. THE WHOLE DONATION PROCESS SHOULD TAKE NO LONGER THAN ONE HOUR.

THIS IS HOW DONATED BLOOD WAS USED IN 2014: ~67% TO TREAT MEDICAL CONDITIONS LIKE CANCER OR BLOOD DISORDERS. ~27% IN SURGERY INCLUDING EMERGENCY SURGERY. ~6% TO TREAT BLOOD LOSS AFTER CHILD BIRTH. (GIVEBLOOD, 2016)

Figure 11 – Pages from *To Donate or Not to Donate? That is the Question!* that describes donation for medical research and list some common urban myths. Jessica

Irwin©

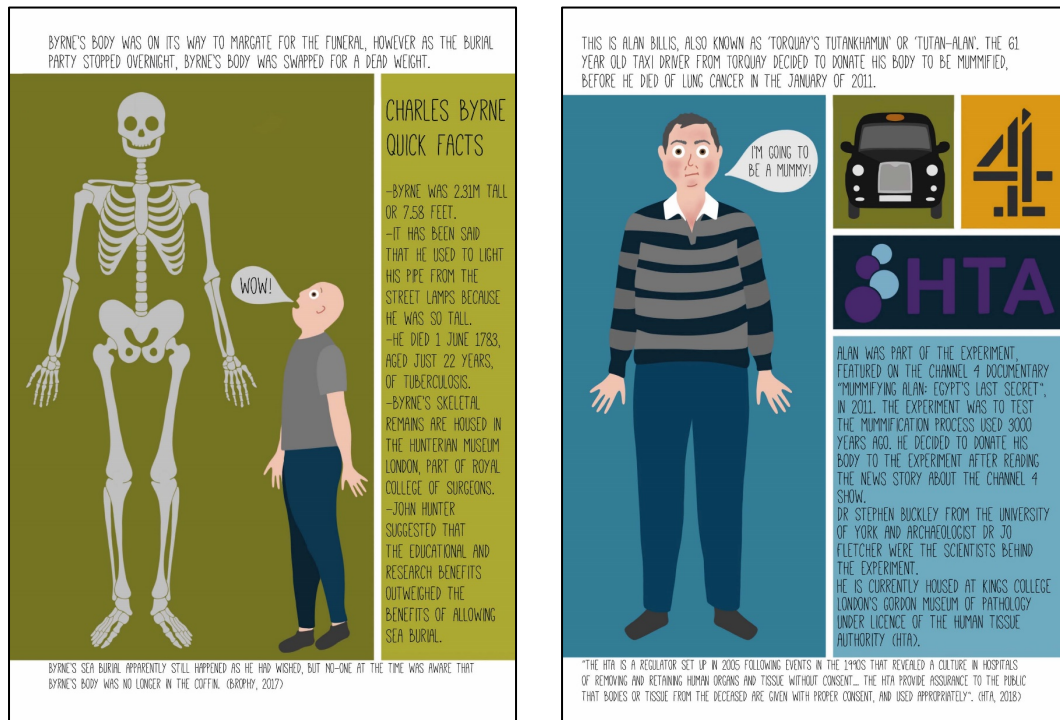


Figure 12 – Pages from *To Donate or Not to Donate? That is the Question!* that describe two mythbusting case studies: Charles Byrne and Alan Billis. Jessica Irwin©

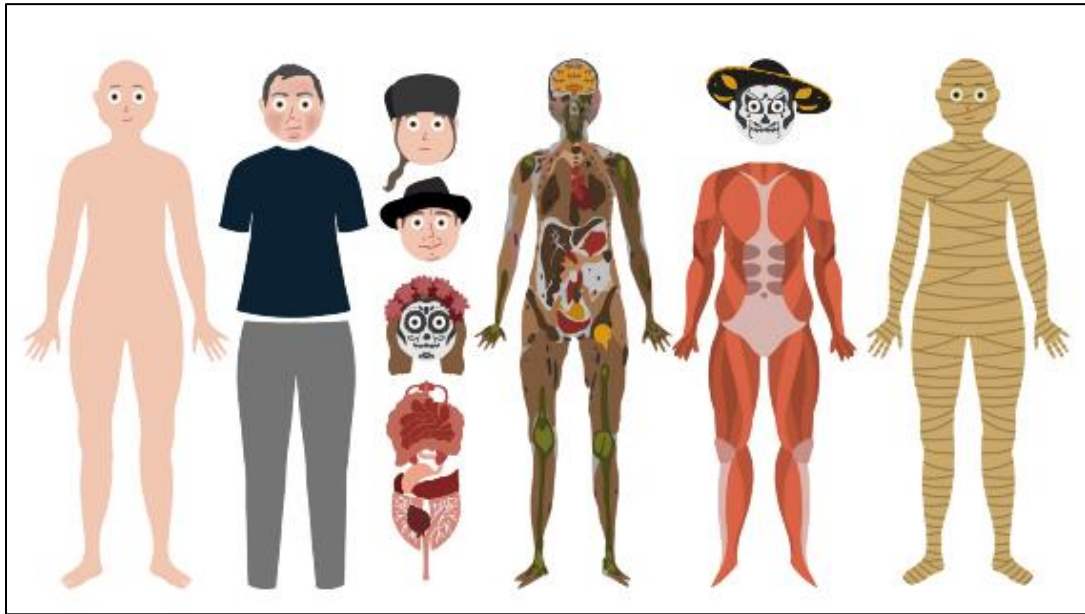


Figure 13 – Paper cut-out dolls used as tactile engagement tools during the exhibitions at Liverpool School of Art and Design and the *Encountering Corpses 4: 'Encountering the Post-Human Corpse: Death and Digital Technology'* symposium in Manchester.

Jessica Irwin©

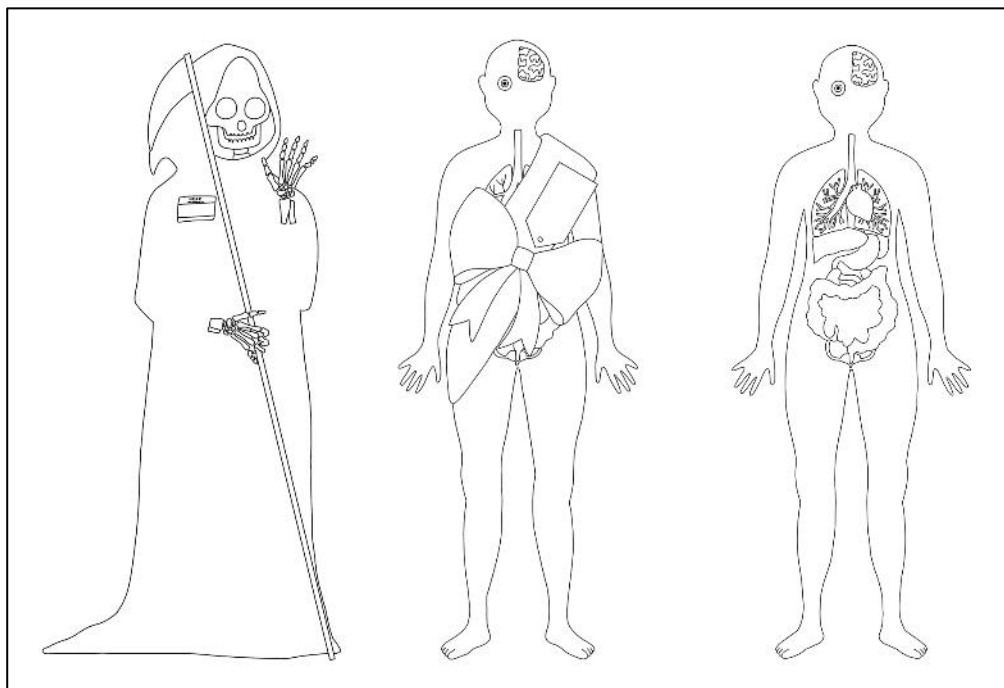


Figure 14 – Colouring-in sheets used as alternative engagement tools during the exhibitions at Liverpool School of Art and Design and the *Encountering Corpses 4:*



*'Encountering the Post-Human Corpse: Death and Digital Technology'* symposium in  
Manchester. Jessica Irwin©



Figure 15 – Display stand showing the engagement tools available during the exhibition  
at Liverpool School of Art and Design. Photo: Kathryn Smith



Figure 16 – Display stand showing the engagement tools available during the exhibition at the *Encountering Corpses 4: ‘Encountering the Post-Human Corpse: Death and Digital Technology’* symposium in Manchester. Photo: Mark Roughley

The consulting anatomist at HARC remarked that the comic was “*an excellent way of informing the general public about body donation*” and was “*informative and easy read that doesn’t overwhelm the reader*”. They went on to say that the “*comic touches on a lot of the important aspects of body donation*”, however, “*the tone in places is a little tongue in cheek and could maybe be reworded to be a little more sensitive*” (S Shankland, 2018, personal communication, July). Further commentary indicated that the graphic style of the comic was enticing but that the inclusion of one particular character – Donnie the donation doll tied in a bow – was a little ostentatious. The image of a person only dressed in a bow could be viewed as brazen or interpreted as inappropriate by some readers.

One of the main points made by the MA Art in Science students that reviewed the comic was that the three myth-busting cases studies should be reworded to more clearly state that these practices are not commonplace and should not be interpreted as an example of current practice. In particular, the *Body Worlds* pages should be prefaced with a few sentences about donation ethics in other countries that enables the reader to question the controversies of the project as a whole. Overall, the students praised the colourful illustrations, the quality of the printed comic and the supporting exhibition materials.

## **Discussion**

Graphic medicine has seen a surge in popularity amongst amateur and professional medical illustrators and healthcare practitioners (Noe, 2020). In an attempt

to raise awareness and challenge common misconceptions about donation, *To Donate or Not to Donate? That is the Question!* proposes graphic medicine as an alternative method of presenting donation information to a public audience by encouraging the reader to engage in informed discussions about the different options available and to challenge pre-existing beliefs and misunderstandings about donation that are perpetuated in social circles or by the media. The illustrations were designed to propagate facts about donation in a memorable and light-hearted manner, and the comic format was chosen as it has the potential to communicate donation information in an accessible and engaging way.

Evaluating the final comic design against the recently published guidance on writing medical comics by Waite (2019), highlights a number of areas for improvement in regards to accessibility, specifically in relation to font weight and style, and familiarity with the comic format itself. The layout of the panels in *To Donate or Not to Donate? That is the Question!* do not always follow the traditional ‘z-path’ – a common feature of most comics (McCloud,1994) – and the placement of some of the text boxes at the top and bottom of the page could disrupt a reader’s navigation of the page. While the font chosen was sans serif and selected for its specific visual appeal, the weight of the font was ‘light’ and may be difficult to read for some, especially when the background colour is not white. *To Donate or Not to Donate? That is the Question!* utilises high-contrast colours as recommended by Waite (2019), however, further consideration of the colour palette used is required before future publication. Focus groups with those who have a colour vision deficiency would enable rigorous testing of colour choices.

The target audience for the comic is people who are unfamiliar with body donation or those who are worried about the new opt-out organ donation system in the

UK. In the absence of qualitative feedback from bequeathal managers and a socio-culturally diverse range of members of the public, critical analysis of the impact of the comic on informed decision-making is not possible. Fellow postgraduate students exhibiting at the Liverpool School of Art and Design Master's Degree Exhibition gave positive reviews about the comic's design, content and production value, however, the students already have a basic understanding of body donation. Questionnaires or focus groups with the intended audience would allow considered analysis of the effectiveness of the design and content that could be responded to ahead of future publication.

Although the three controversial cases studies were included to bust myths that are frequently spoken to as justifications for not donating, it is clear that their inclusion requires further framing. The story of Charles Byrne was chosen to highlight the lack of ethical consideration in the past and the *Body Worlds* exhibition by Gunther von Hagens was selected to highlight some of the more modern controversies surrounding donation. The Alan Billis case study was included to highlight the ethics and regulations governing donation for research in the UK, which were adhered to by the research team behind his mummification. If these case studies remain in future versions of the comic they will be introduced clearly as sensational and unusual occurrences that are exceptional and not examples of modern donation processes.

In developing the written narrative for the comic, it was important to strike a balance between it being simple enough for people with lower literacy to understand but not too simplistic so that those with higher literacy might find it uninformative or boring. It is important to note that in trying to present both organ and body donation processes in one comic, some meaning might have been lost. A 2002 study that evaluated images in three health campaigns concluded that misinterpretation of images used for health promotion or education can easily occur if social and cultural

interpretations were not considered by the designer (Finan, 2002). Research by Houts, *et al.* (2006) and Dowse and Ehlers (2001) state that there is evidence that pictures in health messages that are culturally relevant and include representations of people like themselves are preferred, and facilitate comprehension of new information. Currently, there is a section in the comic that illustrates how death is dealt with in other cultures compared with western fears but this could be developed more expansively if the project was expanded. Development of the comic could be scrutinised by surveying a diverse socio-cultural group of participants before and during the design stages.

Future improvement of the comic could see *To Donate or Not to Donate? That is the Question!* split into a series of comics; the first would serve as an introduction to the topic of donation, and subsequent comics would explain each type of donation, and their associated specific processes and importance in more detail.

## **Conclusion**

Without the collection of formal feedback, it is difficult to know how successful the comic is in achieving the aim of stimulating informed discussions, busting myths and encouraging decision-making between people about donation. However, self-evaluation against the guidance on writing medical comics by Waite (2019) suggests that the comic's design and format is appropriate for the intended audience. The project proposes graphic medicine as an alternative means of presenting donation information to a public audience or to support existing donation paperwork, and poses that comics are effective vehicles for transferring challenging information about dying, death and donation to a wide demographic. In the UK, with the move to everyone being an assumed organ donor unless they specifically opt out, a resource like this could be even more essential.

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