



Body Donation Program

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Outline

- A (very) short history of Anatomical Science and teaching
- The Anatomy Act (1832) and The WA Anatomy Act (1930)
- What it means in practice for UWA and donors

- Ptolemy I Soter ($\approx 300\text{BC}$, Macedonia) was the first to allow for medical officials to cut open and examine dead bodies (executed prisoners) for the purposes of learning how human bodies operated





Galen of Pergamon (129-200 CE)

Prominent Greek physician, surgeon and philosopher in the Roman empire.

Dissection of Barbary apes was basis for his book of human anatomy

For next 1,500 years, intellectuals thought they knew all they needed to know by studying ancient texts

Symmetry



<https://en.wikipedia.org/wiki/Humorism>

Humour	Season	Element	Organ	Qualities	Ancient name	Temperament	Temperament characteristics
Blood	spring	air	heart	warm and moist	sanguis	sanguine	courageous, hopeful, playful, carefree
Yellow bile	summer	fire	liver	warm and dry	kholé	choleric	ambitious, leader-like, restless, easily angered
Black bile	autumn	earth	spleen	cold and dry	melas kholé (?)	melancholic	despondent, quiet, analytical, serious
Phlegm	winter	water	brain	cold and moist	phléγμα	phlegmatic	calm, thoughtful, patient, peaceful

Middle Ages ...



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- “Tonsure” ensured a steady income stream
- 1745 the surgeons split from the barbers, 1800 Royal Charter formed the Royal College of Surgeons

Andreas Vesalius (1514 – 1564)



McArdle (2010) Exercise Physiology. Lippincott

- Belgian anatomist who dissected human cadavers while he lectured.
- Studied Galenic medicine in Paris
- But made his own careful dissections and incorporated them into the books – publically available (Gutenberg 1439)!!!
- Suspected much of Galen was wrong

William Harvey (1578 – 1657)

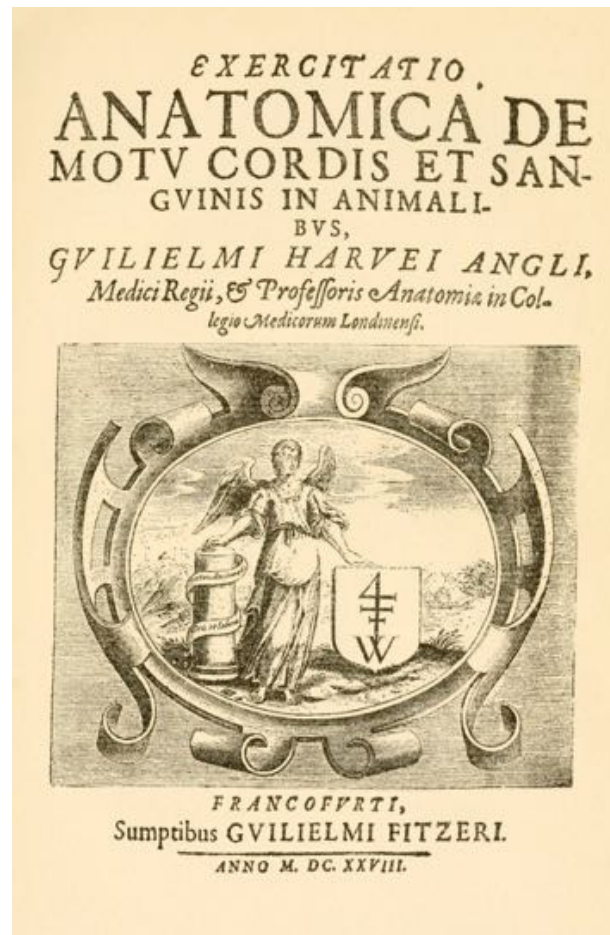


- Galen held (and the accepted wisdom was) that arterial blood flowed from the heart, and was consumed in the tissues. Venous blood flowed FROM the liver, and was consumed in the tissues

William Harvey (1578 – 1657)

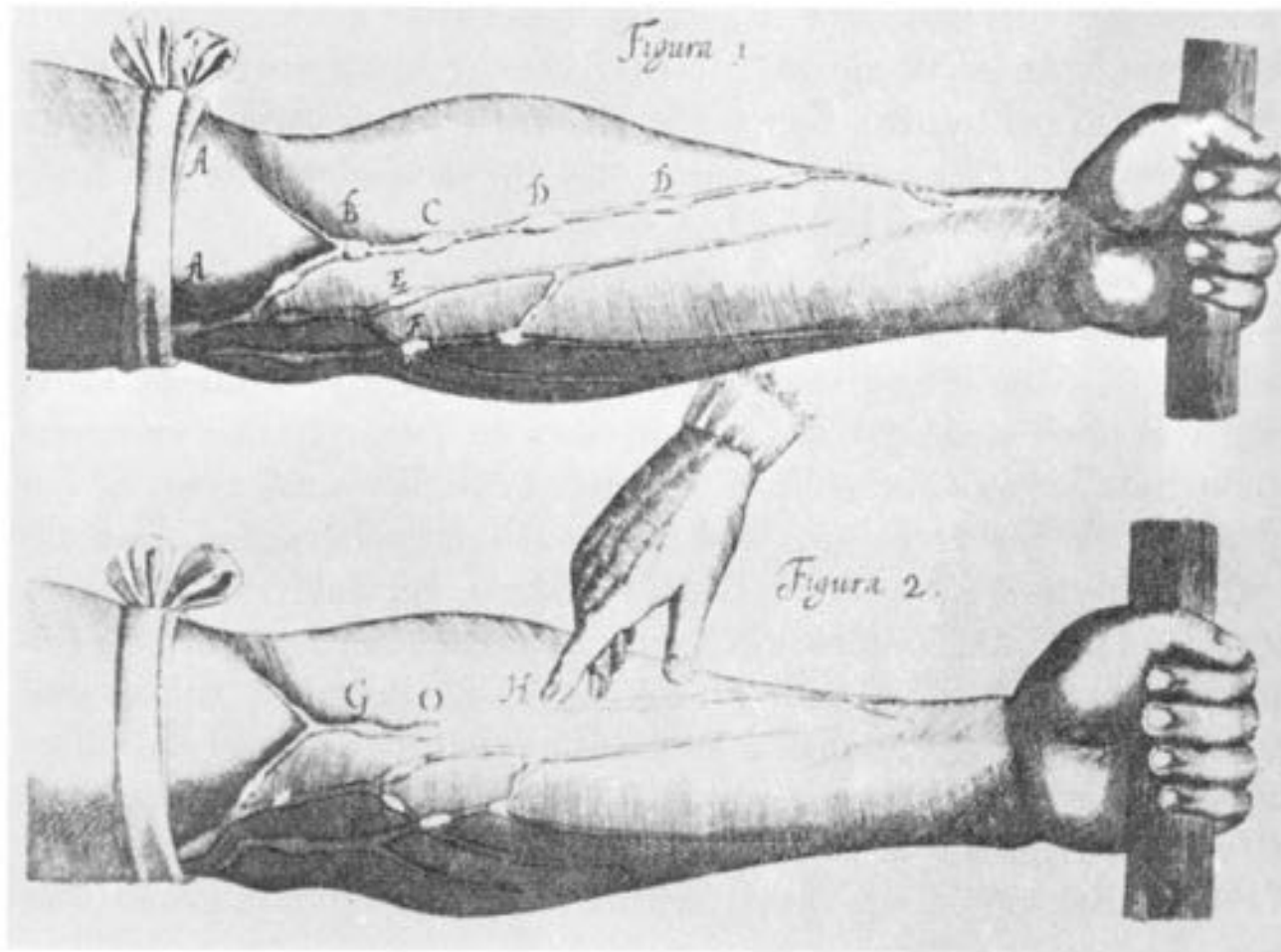


- Harvey had no evidence of capillaries
- Had no knowledge of oxygen



1628 –An Anatomical Exercise on the Motion of the Heart and Blood in Animals

*De Motu Cordis; On the Motion
of the Heart and Blood*



17th and 18th Century



The Anatomy Lesson of Dr. Nicolaes Tulp
(Rembrandt, 1632)

Certified anatomists were permitted to perform public dissections - often only yearly

Bodies were mostly executed prisoners, but sometimes deceased family members

Murder Act (1752)

- Permitted the remains of executed prisoners to be used for dissection and the teaching of anatomy
- Scottish Law permitted the use of prisoners who died in custody, suicides, foundlings, and orphans
- By the early 1800's, the rise of medical science (Royal Colleges demanded more anatomy in the medical curriculum, centres developed at Edinburgh, Padua, and Leiden) and a decrease in the number of executions created a problem for the fledgling anatomical sciences;
 - Demand >>> Supply

By the early 1800's

“Resurrection men”
supplied the schools



It was not uncommon for
relatives or friends to
“guard” the grave after a
funeral, to prevent grave
robbing



Some innovative solutions
were developed – such as
the “mortsafe”

The law didn't help ...

- It was illegal to disturb a grave
- And illegal to remove property from the deceased
- But the body itself did not belong to anyone, and so its removal was not “stealing”

- 1810 - formation of the Anatomical Society
(lobbied for changes in the law)
- 1828 – a parliamentary select committee was formed to report on the issue of anatomical dissections

1828: The West Port Murders



William Burke



William Hare

- Hare owned a boarding house in Edinburgh
- An indebted lodger died in the house
- Burke had a plan to recoup Hare's losses



Dr Robert Knox
Edinburgh Anatomy School

ANATOMY AND *Physiology.*

DR KNOX, F.R.S.E. (*Successor to DR BARCLAY, Fellow of the Royal College of Surgeons and Curator of its Museum,*) will commence his ANNUAL COURSE OF LECTURES on **ANATOMY AND PHYSIOLOGY** of the Human Body, on Tuesday, the 4th November, at Eleven A. M. His Evening COURSE OF LECTURES, on the same Subject, will commence on the 11th November, at Six P. M.

Each of these Courses will at each evening comprise a full Demonstration on both Anatomical Subjects, of the Structure of the Human Body, and a History of the Uses of its various Parts; and the Organs and Structures generally, will be described with a constant reference to Practical Medicine and Surgery.

FEE for the First Course, £4, 5s.; Second Course, £2, 5s.; Perpetual, £4, 5s.

N. B.—These Courses of Lectures qualify for Examination before the various Colleges and Boards.

PRACTICAL ANATOMY AND OPERATIVE SURGERY.

DR KNOX'S ROOMS FOR PRACTICAL ANATOMY AND OPERATIVE SURGERY, will open on Monday, the 6th of October, and continue open until the End of July 1829.

Two DEMONSTRATIONS will be delivered daily in the Classroom standing in the Rooms for PRACTICAL ANATOMY. These Demonstrations will be arranged so as to comprise complete Courses of the DESCRIPTIVE ANATOMY of the Human Body, with its application to PATHOLOGY and OPERATIVE SURGERY. The Dissections and Operations to be under the immediate superintendence of DR KNOX. Arrangements have been made to secure as usual an ample supply of Anatomical Subjects.

FEE for the First Course, £4, 5s.; Second Course, £2, 5s.; Perpetual, £4, 5s.

N. B.—An Additional Fee of Three Guineas includes Subjects.

* * * Certificates of Attendance on these Courses qualify for Examination before the Royal College of Surgeons, the Army and Navy Medical Boards, &c.

Edinburgh, 16, Broughton Street,
16th September 1828

- A few months later another lodger fell ill. Fearing a downturn in lodger trade with an infectious lodger, they didn't wait for her to pass ...
- By the time they were caught, Burke and Hare had killed 16 more (mostly homeless) and supplied them to Knox
- Hare turned King's evidence. Burke was hanged, dissected, and displayed. His skeleton remains in the Anatomical Museum of Edinburgh Medical School
- Knox was not prosecuted, but his house was attacked by angry mobs

The London Burkers



John Bishop, Thomas Williams, James May

- Operated as resurrection men, selling to anatomists in London
- Eventually followed Burke and Hare, and victims were lured and drugged before being killed, and the body sold to anatomists
- 1831 - Bishop + Williams hung

1832 – The Anatomy Act

- A License had to be obtained to practice Anatomy (carries into the present WA Act)
- Responsible for reporting on every body, and for the proper treatment of the deceased
- Section 7 stipulated that a person having lawful possession of a body could permit it to undergo "anatomical examination" (dissection) provided that no relative objected
- A person could donate the corpse of a next of kin in exchange for burial at the expense of the anatomy school
- Ended the business model for resurrectionists

1832 – The Anatomy Act

- Replaced in England and Wales by the Human Tissue Act (2004)

1930 – The WA Anatomy Act

- Authorised the establishment of Schools of Anatomy
- Activities permitted under license to License holder (Head of School)

UWA Anatomy formed in 1957 - Originally housed in an old WWII seaplane base - (what is now) the “Old Pharmacology” building





Dissecting Room (Old Pharmacology Building)
Mid 1960s — Mid 1970s







1930 – The WA Anatomy Act

- Authorised the establishment of Schools of Anatomy
- Activities permitted under license to License holder (Head of School)
- Grants license to permit removal of bodies from public institutions etc. for anatomical examination
- “lawful for any executor or other person having lawful possession of the body of any deceased person, and not being an undertaker or other person entrusted with the body for the purpose only of interment or cremation, to permit the body of such deceased person to undergo anatomical examination at some authorised school of anatomy”

In practice

- The UWA Body Donation Program
- [until 2016 The Body Bequest Program]
- Donors register -

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Anatomy, Physiology and Human Biology

Body Donation Program

The community of Western Australia plays a vital role in the work of the School of Human Sciences.

It is through these strong links that we are able to continue our research, including the Body Donation Program.



[Body donation program](#)

The School is licensed to practise anatomy and to accept body donations from members of the Western Australian community. These bodies are used for anatomical teaching, medical and scientific research and specialist training.



[Donors](#)

The School is licensed to accept whole body donations. The bodies are used for anatomical teaching, medical and scientific research and specialist training at many teaching and research institutions.



[Memorials](#)

The School holds a memorial service in Winthrop Hall every three years to honour the donors to its Body Donation Program. A dedication of thanksgiving expressed in the presence of relatives, special guests and students is the most appropriate way to acknowledge those who have bequeathed their mortal remains to the University.

In practice

- We receive a call from the NOK or medical staff (retirement home or hospital)
- We contact the supervising doctor or nurse
- Important criteria
 - Infectious disease
 - Open wounds
 - Peripheral vascular disease
- Family is notified of acceptance / decline
- We obtain death certificate
- Body transferred to UWA by funeral director

In practice

- Received bodies are embalmed or frozen (depending on greatest need) by mortuary technicians registered with the WA Health Department under the Anatomy Act
- Can be at UWA for 6 months to 5 years
- Funeral director organises coffin and cremation, family is notified
- Ashes go to family or into Memorial Garden at Karrakatta
- Plaque updated annually





MEDICAL SCIENCE
MEMORIAL GARDEN



IN MEMORY OF THREE
DONORS WHO HAVE
DONATED THEIR MORTAL
REMAINS FOR THE STUDY
OF MEDICAL SCIENCE IN
THE SCHOOL OF ANATOMY
& HUMAN BIOLOGY AT
THE UNIVERSITY OF
WESTERN AUSTRALIA







In practice

- Triennial Memorial Service in Withrop Hall











Who benefits ?

- Each year;
- ≈400 Science students studying Anatomy
- ≈400 post-graduate medical students
- ≈400 students studying medical science (pre-med; from 2017)
- ≈100 post-graduate students studying dentistry, podiatry, work health and safety
- The UWA Clinical Training and Evaluation Centre has trained more than 30,000 doctors, nurses, and healthcare professionals since it opened in 2000
- ≈500 students at other WA Universities

Thank you