

The value of life



UNIT 1

This unit looks at ethical and social issues raised by a mechanistic approach to the human body and by some medical practice. The unit seeks to promote an appreciation of the wonder of life and of the value of an individual human being.

Using this unit

It is assumed that students will already have some knowledge of cell division, reproduction, genetics, DNA and controlling inheritance.

The unit is intended to provide springboards for going beyond facts and the mechanics of things, helping students to think about implications and consequences of certain medical practices. It could also help students to see the relevance of their studies, to apply it to their own lives, and to prepare them for some of the harder decisions they may have to make in life.

Each activity stands on its own as an assignment for class discussion or as homework. As a collection, they pull several areas of the syllabus together for an overarching consideration of the value of life.

Links with GCSE

Sc2 Life processes and living things

- ◆ The ability to make informed judgements about the economic, social and ethical issues concerning genetic engineering.

Sc0 The nature of science

- ◆ The use of scientific knowledge and understanding to evaluate the effects of some applications of science on health and quality of life.
- ◆ Understanding of the power and limitations of science in addressing social issues and some of the ethical dilemmas involved.

Moral and spiritual aims

- ◆ To promote an appreciation of the wonder of life.
- ◆ To provide real-life contexts for judgements of ethical issues.
- ◆ To show that some medical judgements involve the devaluing of life.

Notes on the activities

Activity 1: A beautiful model

- In meiosis chromatids separate. In fertilisation two chromatids, one from each parent, combine.

Activity 2: Design your own baby?

- 'Embryos which have divided fastest, and look more advanced', i.e., the most vigorous - because they are probably 'strong' and have a better chance of surviving.
- Embryos not chosen are either destroyed or frozen for research purposes.

Activity 3: Just a ball of cells

- If the 'parents' were born by natural means, there would be 10 'grandparents'.

However, if they were all born like the baby with 5 'parents', the possible number of 'grandparents' would be 25!

Activity 4: Abortion

- $27\% \text{ of } 127,600 = 34,500$ (to 3 s.f.)
- Perhaps the researchers just believed this group was fairly homogeneous in outlook and social mores. Perhaps they wished to draw attention to the fact that this group contribute more than any other group to the high rate of abortion. It could also be that this young group is considered ill-prepared to raise a child and will need a good deal of welfare support to manage successfully.

The figures could seem better to those who are 'pro-choice' because the numbers are smaller than in the 20-44 year-old group, thereby not drawing attention to the high rate of abortion in this age-group. They could also seem worse to someone with a 'pro-life' point of view, because the number of abortions per age year is actually very high in that group.

- The 20 - 34 year age-range.
- Unmarried women.
- This question is worded so that it can be asked of boys as well as girls. It could therefore lead to discussions about whose decision it should be, and about paternity rights and responsibilities.

Your life is at stake - 'D & C' is dilation and curettage - refers to the medical procedure during which the cervix is expanded and the lining of the womb is scraped.

'Sonogram' is an American term for 'ultrasound scan' which is a technique using echo location of high frequency waves to create a 'picture' of the baby.

Activity 5: Recalled to life

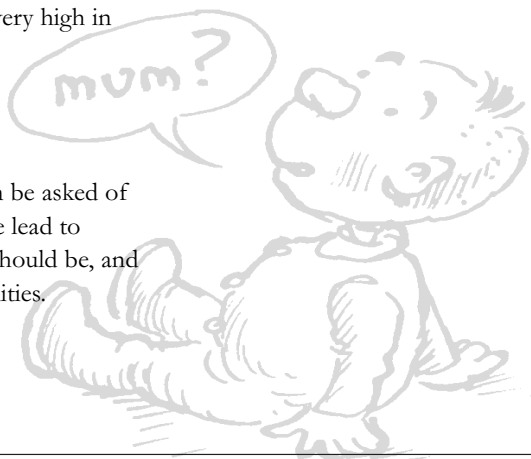
Possible reasons against keeping alive are:

- the money could be used for a young person who can contribute to society and not be a drain on resources;
- the person may never come out of coma;
- their quality of life is so low they might prefer to be allowed to die; and
- it is wrong to keep a person alive unnaturally - we should not 'play God'.

Possible reasons for keeping alive are:

- every person has a right to life, whatever their condition, and we do not have the right to deliberately take a life.
- sick people need fit people to protect them and fight for their rights.
- it is wrong to assume the wishes of the patient, just because they are unable to express them.

Adapted from *The Human Embryo: Between Oblivion and Meaningful Life*. D. Gareth Jones (*Science and Christian Belief*, Vol 6, No 1 p.4.)



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UNIT 1

In the 1950's, one of the greatest unsolved mysteries in science was the secret of life itself, i.e. the process by which all living things reproduce themselves. The mystery had been given the name 'gene', but no-one knew what it was or how it worked.

The structure of DNA - the material of which genes are made, was only properly understood and explained as recently as 1962.

This discovery by Frances Crick and James Watson in Cambridge, and Maurice Wilkins and Rosalind Franklin in London, opened up an entirely new field of science and led to many other very important discoveries.

Right - diagram showing the structure of DNA



1

A beautiful model

The BBC Horizon Special film *Life Story* tells the story of the discovery of the structure of DNA. The following is an extract from a conversation between Crick and Watson who solved the puzzle of how the molecule is structured.

They are gazing at the model they have built of the double helix. Francis Crick speaks.

That's it!

That surely is it!

I feel like Pygmalion - you build something beautiful and it comes to life!

All we wanted was the body, but we got the soul!

That's how it is!

Isn't that how it is, Jim?

Pull the chains apart and each chain reproduces the other.

One becomes two, two becomes one.

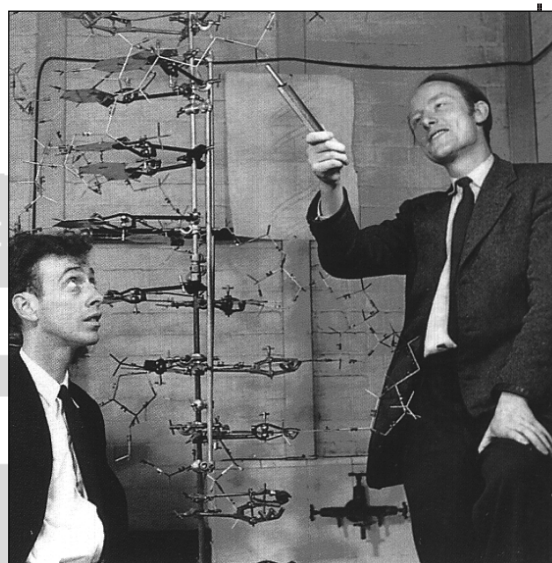
Generation upon generation, all the way from Adam and Eve to you and me!

It never dies, Jim. It never dies!

One simple shape.

The womb of humanity, endlessly, effortlessly fertile, dividing and reforming itself, from the beginning to the end of the world.

It's the closest we'll ever get to immortality, Jim!



Watson, Crick and DNA model
Science Photo Library: A. BARRINGTON BROWN

1. Crick and Watson's model was made of bits of metal and clamp stands. What was beautiful about it?
2. Put in your own words what Crick is so excited about.
3. What does he mean - 'one becomes two, two becomes one'?
4. Crick was not a Christian, yet he referred to Adam and Eve. How do you think life began?
5. Do you think life is just a matter of molecules and chemical reactions?

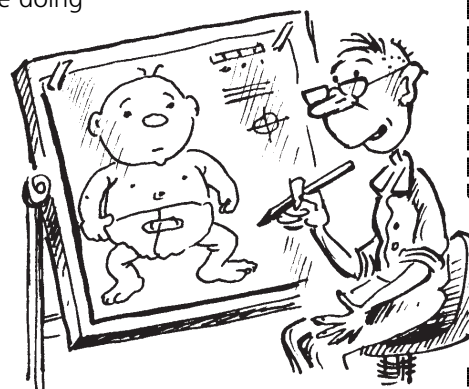


2 Design your own baby?

Many couples who cannot have children naturally are assisted in having a child by a process called 'in vitro fertilisation'. It is sometimes called the 'test-tube baby' process because eggs and sperms join in a 'test-tube' and then some are implanted back into the mother's womb.

However, parents sometimes do not want to have a child who has inherited a gene defect like Down's Syndrome. Some doctors who are doing research on embryos have discovered a way of preventing births of babies with gene defects. One of them said,

"We are now able to use in-vitro fertilisation to screen those embryos for gene defects, using this technique we have developed called 'pre-implant diagnosis'. This is a very restricted technique and only available in one or two places around the world. What we tend to do is to choose the embryos which have divided fastest and look more advanced. Two embryos are put back to improve the chances of pregnancy."



1. Why do some parents not want a Down's Syndrome child?
2. Do you think parents should be able to choose not to have such a child? What else should they be able to choose when having a child? Gender? Eye colour?
3. Which gender would you choose for your baby? What problems could result if people were given the choice?
4. What is the best kind of embryo according to the doctor? Why?
5. What do you think he does with the other embryos not chosen?
6. What value does the doctor put on the life of an embryo not chosen? Give it a score out of 10.



3 Just a ball of cells?

A husband and wife went to a fertility clinic hoping to have a baby by invitro fertilisation. The following is an extract from a conversation between them and a doctor:

Doctor: "Are you happy with the procedures?"
 Husband: "Yes."
 Wife: "They are not taking part of the embryo away."
 Husband: "It's far from being a baby or a foetus at that point.
 No, just a ball of cells, that's all."



1. Do you agree? Is that all?
2. At what point does it become a baby?

It is now possible to create a normal baby with up to 5 'parents': (i) the infertile mother and (ii) the infertile father who together bring up the child; (iii) the surrogate mother who bears the child; (iv) the egg donor; (v) the sperm donor.

3. How many possible grandparents could there be?

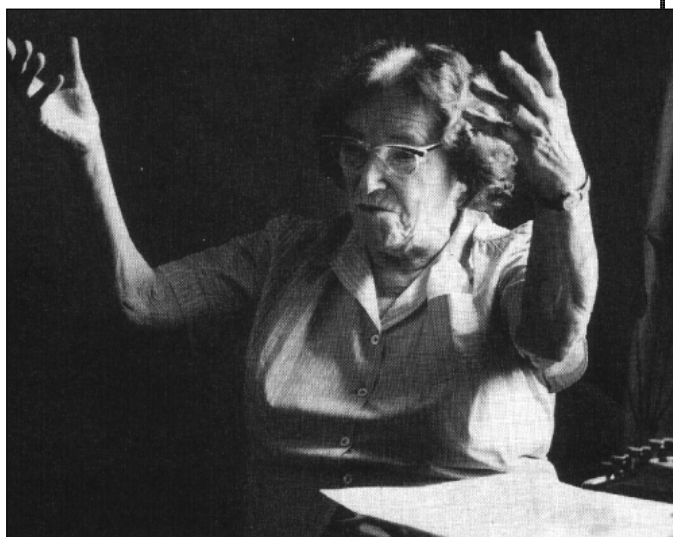


4 Abortion 'the premature expulsion of the foetus from the womb'

Dora Russell, born in 1894, was an early campaigner for abortion to be legal and available.

She said that women should have the right to choose, and felt that it was better to have an abortion than to bring an unwanted baby into the world.

Her campaigning played a significant part in the passing of the Abortion Act in 1967, which gave doctors the right to perform abortions under certain conditions.



Dora Russell



	1971	1981	1991
Single Women: Total Abortions	63,400	96,400	127,600
	%	%	%
Under 16	4	4	3
16-19	36	39	27
20-34	56	55	67
35-44	2	2	3
45 and over	0	0	0
Married Women: Total Abortions	58,600	55,500	42,000
	%	%	%
16-19	1	2	1
20-34	64	67	70
35-44	32	30	28
45 and over	1	1	1

(Sources: Office of Population Censuses and Surveys, National Health Service in Scotland, Commons Services Agency)

Using the data given in the table above, answer the following questions:

1. These figures are percentages of the total numbers at the top of each column. Calculate the number of abortions had by 16-19 year old single women in 1991.
2. The age-ranges in the table do not cover the same number of years. The 16-19 age-range is not as wide as the others.
Why do you think the researchers chose to make this age-range narrower? Does this make the figures for this age-range seem better or worse from your point of view than if the age-ranges had all been of the same width? Give reasons for your answer.
3. Between 1971 and 1991, the number of abortions increased. Which age-range contributed most to that increase?
4. Who is most likely to have an abortion - a married woman or an unmarried woman?
5. Under what circumstances, if any, do you think a person should consider having her baby aborted?

Your life is at stake!

Jean Thompson lay on the examining table, her heart beating fast. She and her husband had waited long and prayerfully for a child. But now, 11 weeks into her pregnancy, she was bleeding heavily. The doctor told her that she needed a D. and C. (D. and C. is an abbreviation for 'Dilation and Curettage'. It refers to the medical procedure during which the neck of the womb is enlarged and the lining of the womb is scraped.)

"Doctor, what will that do to the baby?"

"Baby?" the doctor responded brusquely, "What baby?"

"You know I'm pregnant," Jean said softly.

"You've passed tissue," the doctor said, "You'll have to have a D. and C."

"You don't understand," she said, "My husband and I have been waiting 12 years for this baby. Isn't there any other kind of test I could take?"

"No, you don't understand," said the doctor angrily, "You are bleeding, your life is at stake. You need a D. and C. immediately."

Jean said she would see another doctor. She signed papers absolving the doctor of responsibility. Her husband helped her to walk to the car and they went to see another doctor.

After a physical examination, he did a sonogram - and there was her baby - alive and well!



1. Choose to be either the mother or the father of the child in this story.

Write a letter to the first doctor, informing him or her of the results of the sonogram test and how you feel about what happened.

5 Recalled to life!

For months, Christopher was in hospital in a persistent vegetative state in which he was awake but totally unresponsive to his environment. He had a damaged brain through a motorcycle accident.

His mother came in every day. She nursed him, cleaned and brushed his teeth, talked to him, read old childhood stories - convinced that her love could reach the depths of his subconscious mind.

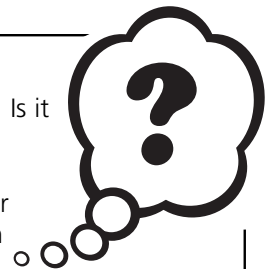
Then one day, nine months after the accident, her care and attentions were rewarded by a subtle sign of Christopher's awareness. He made gradual steady progress and returned home to be cared for by his family and friends.

(Christopher's story is retold in *Recalled to Life* by Myrtle Yeoman.)



1. It costs a lot of money to keep people in a persistent vegetative state alive. Is it worth it? Give reasons for your answer.

2. Do you value somebody's life so much that you would do what this mother did? Make a list of the things you would talk about and do, to try to reach the subconscious depths of the person in a coma.



6 The rescue



Imagine the following:

A laboratory attached to a hospital has just been demolished by an earthquake. At the time of the tragedy, there were several people in the building and some failed to get out of it in time before it started to gradually collapse.

You are Head of the Rescue Team - you have limited time and you may not be able to rescue everybody.



Trapped inside the building are:

- ◆ a 40 year old woman who is in charge of the laboratory and who singlehandedly set up this first rate research unit,
- ◆ a pregnant woman who is waiting for Down's tests: she has no reason to think that her foetus has Down's Syndrome, but if it has, she will want an abortion,
- ◆ another pregnant woman in the fourth month of her pregnancy who is there for routine tests,
- ◆ a petri dish containing three 16-cell embryos: these are being finally checked before being implanted back into the mother's womb,
- ◆ a sperm bank containing samples of sperm from 20 individuals ready for artificial insemination,
- ◆ a young woman who has forced her way into the clinic to protest against abortion,

1. Who, or which, will you rescue first? Is there anyone you would consider not worth rescuing?
2. Construct a table giving the reasons for and against each one, then write out your rescue list in order.

	For	Against
Head of Unit		
Woman for Down's test		
Woman for routine test		
Embryos		
Sperm		
Protester		

"For you created my inmost being;
 you knit me together in my mother's womb.
 I praise you because I am fearfully and wonderfully made;
 your works are wonderful,
 I know that full well."
(Psalm 139 vv 13-15)
 Does God see it the same way?