



ADVANCED GCE
CRITICAL THINKING
Unit 4: Critical Reasoning

F494/RB

RESOURCE BOOKLET

Wednesday 27 January 2010
Afternoon

Duration: 1 hour 45 minutes



INSTRUCTIONS TO CANDIDATES

- You should spend about 10 minutes reading the article by Madeleine Bunting and use it to answer Section B.

INFORMATION FOR CANDIDATES

- This document consists of 4 pages. Any blank pages are indicated.

Background information

Madeleine Bunting is the religious affairs editor for the Guardian.

Conventional medicine – this includes standard treatments e.g. drugs, surgery, physiotherapy, which have been developed through scientific research.

Complementary medicine refers to a group of therapeutic and diagnostic disciplines that exist largely outside the institutions where conventional health care is taught and provided. Complementary medicine is an increasing feature of healthcare practice.

A **placebo** contains no medication, but the patients do not know this. A placebo can sometimes have similar effects on patients as the real medication. The usual explanation for this is that the 'placebo effect' is psychological rather than physical.

Some common forms of complementary medicine

Acupuncture is an ancient Chinese system of healing. It involves the insertion of fine sterilised needles into various parts of the body to treat a wide variety of conditions.

Crystal therapists use crystals, gemstones and minerals in several ways to amplify and accelerate the self-healing processes within the individual patient, e.g. placing blood coloured stones on the body to remedy blood disorders.

Hypnotherapy induces relaxation to relieve certain symptoms or bring about a change in life style. It combines the skills of counselling and psychotherapy with the techniques of hypnosis.

It is unscientific to pour wholesale scorn on complementary medicine

Three new books share a common theme: *Suckers: How Alternative Medicine Makes Fools of Us All*; *Snake Oil Science*; *Trick or Treatment*. What these new books have in common is frustration at the rise of complementary medicine. It seems the aim of some of these authors is to finish off a fast growing health industry that they believe is based on charlatans and quacks preying on the gullible and desperate.

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The books reflect the growing exasperation in some quarters that public opinion is not as amenable to persuasion and scientific evidence as they would hope. The language gets lurid and alarmist; we are living in dangerous times as tides of irrationality threaten to overwhelm us. 'Reason is a precious but fragile thing,' declared Richard Dawkins, Professor for the Communication of Science, in his series, *The Enemies of Reason*, last autumn. 'Reason has liberated us from superstition and given us centuries of progress. We abandon it at our peril.'

2

What so troubles these science warriors is that it is estimated a third of people in the UK now use complementary medicine, at a cost of £1.5bn a year. There is an extraordinary paradox here: a half-century of astonishing conventional medical advances has not succeeded in eliminating complementary medicine. Quite the reverse: the breakthroughs in conventional medicine have been accompanied by the proliferation of other forms of healing – many of which have little or no evidence base to prove their effectiveness.

3

To the science warriors, this bizarre state of affairs can only be explained by irrationality. They bemoan the state of science education and lament how, contrary to expectation, literacy and access to information have failed to eradicate superstition. Meanwhile, in this increasingly sharply polarised debate, complementary medicine practitioners are equally exasperated by what they see as blinkered scientific reductionism.*

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So it takes a brave scientist to launch into this territory and risk getting attacked from both camps by daring to ask a simple question: is there anything science can learn from complementary medicine? That is precisely what Kathy Sykes is doing in her television series, *Alternative Therapies*. As Bristol University's Professor of Public Engagement in Science and the Director of the Cheltenham Festival of Science, no one can challenge her credentials as a scientist, yet her scrutiny of particular therapies throws up serious challenges to conventional medicine.

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Sykes is too good a scientist to give complementary medicine an easy run. In one programme she examines reflexology, and gives it pretty short shrift. There are 30,000 reflexologists working on a million British feet a year. They base their work on a theory that parts of the sole of the foot correlate to organs in the body. The only problem is that Sykes could find no one, reflexologist or scientist, who could explain how these correlations might work. Furthermore, it turned out that this 'ancient' healing system seems to have originated with an imaginative American woman in the 1930s. But patients swear by it.

6

Sykes investigates two areas of scientific research. First, she digs up new research on the importance of touch, which can have a profound impact on the brain. Even the hand of a stranger reduces anxiety and that of someone with whom one has a close relationship is even more significant. In fact, Sykes finds some scientific underpinning which goes beyond placebo in many of the therapies she looks at. But it is placebo which emerges as a recurrent and crucially important thread in her quest.

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This is one of the most common charges made against complementary medicine – that most of it is no better than placebo. But there is a way of turning that accusation around: perhaps complementary medicine is an effective way to harness placebo as one of the most powerful – and cheapest – of healing processes. So, rather than being derogatory about the phenomenon as 'just' placebo, perhaps we should see it as one of the most remarkable and little understood aspects of the human body. Harvard professor Ted Kaptchuk is publishing a study this week which shows that placebo is as good as any conventional treatment available for irritable bowel syndrome. The eight most industrialised nations spend \$40bn a year on medication for this condition.

8

Complementary medicine is most popular where conventional medicine fails, such as with musculo-skeletal conditions and mental health – stress, depression, anxiety (the recent revelations about the ineffectiveness of Prozac were another reminder of how shaky the science is in a large area of conventional medicine). Several complementary therapies are particularly effective at pain relief – you had to see Sykes’s footage of hypnotism helping a woman to have teeth extracted without anaesthetic to believe it.

9

Conventional medicine prolongs life but is less successful in prolonging good health – we can expect to spend more years of our life in poor health, as a government report showed last week – and in producing wellbeing. So people are voting with their feet, trying to find other ways to fill the gaps left by conventional medicine. We need scientists to help to identify what they are looking for and why, rather than pouring scorn indiscriminately on the whole field and on the relations between belief, mind and body, of which science still has such a fragmentary understanding.

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* Scientific reductionism – the approach in science that complex systems can be understood by reducing them to the interactions of their constituent parts.

(Madeleine Bunting, The Guardian, Monday March 24 2008)



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