

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Advanced Subsidiary Level

THINKING SKILLS

8436/02

Paper 2 Critical Thinking

June 2006

2 hours

Additional Materials: Answer Booklet/Paper

READ THESE INSTRUCTIONS FIRST

If you have been given an Answer Booklet, follow the instructions on the front cover of the booklet.
Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen.
Do not use staples, paper clips, highlighters, glue and correction fluid.

Answer **all** the questions.
Start each question on a new answer sheet.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [] at the end of each question.

This document consists of 7 printed pages and 1 blank page.

1 Study the following evidence and answer the questions that follow.

At approximately 5.45 p.m. on 24th April 1964, Lonnie Zamora, a police patrol officer, in New Mexico, USA abandoned a high-speed car chase in order to investigate "a loud roar and a flame in the sky". Driving up a narrow gravel road he suddenly saw a "shiny type object", 100-200 metres away. He also saw two figures which he described as wearing "white coveralls and looking like small adults or large children". Because he was wearing clip-on sunglasses, over his prescription glasses, he could not distinguish any features or headgear at that distance. Puzzled, he radioed police officer Sam Chavez in the nearby town of Socorro to assist.

Zamora says he approached to within 30 metres of the object and noted a red symbol on its side - about 1 metre wide. Then the roar began again, and became "very loud". As it increased, the object also emitted flame and stirred up a lot of dust. The "beings" he had observed earlier were now nowhere to be seen.

Scared by the noise Zamora ran for cover. From his notebook:

"As soon as saw flame and heard roar, ran away. Bumped leg on car – glasses fell to ground, left them there, ran to North with car between me and object. Object was oval in shape. It was smooth – no windows or doors. As roar started, it was still on or near ground. Noted red lettering of some type (see sketch). Insignia was about 1 metre wide I guess. Object still like aluminium-white. ...Kept running to North. Glanced back couple of times. Noted object rise to about 8 to 10 metres. Took I guess about six seconds.

I was scared of the roar, and I had planned to continue running down the hill. I turned around toward the object and at same time put my head toward ground, covering my face with my arms. Being that there was no roar now, I looked up, and I saw the object going away from me. It appeared to go in straight line and at same height – possibly 3 metres from ground. Object was travelling very fast. It seemed to rise up, and take off immediately across country..."

Whilst Zamora waited for Chavez to arrive he decided to make a sketch of the UFO (Unidentified Flying Object). Chavez was very soon on the scene of the incident. If he had not taken a wrong turning he would have arrived in time to actually see the incident. Chavez asked: "What have you seen Lonnie? You look like you have seen the devil!" "Maybe I have", replied Zamora.

Zamora and Chavez were joined by other officers who checked out the spot where the UFO had reportedly landed. In places the ground was still burning. They discovered four burn marks and four V-shaped depressions, about 5 centimetres deep around the burns. An engineer's analysis later stated that each would have been bearing a load of at least one tonne to press so deeply into the dense desert earth. Also, five smaller marks that looked like footprints were found nearby.

The US Air Force checked to see if any aerospace company had been privately developing an aircraft as described by Zamora - with no success. However, a car driver told the manager of a gas station on Highway 85 that he had observed some type of aircraft in trouble just south of Socorro.

At 3.00 a.m. on the 26th April 1964, Orlando Gallego saw a UFO, identical to the one reported by Zamora, land at La Madera, New Mexico. Gallego and his family denied all knowledge of the Socorro event and investigating officers found evidence of burning around the alleged landing site - and four inexplicable depressions in the ground.

Major Hector Quantanilla, director of the US Air Force agency investigating UFOs, wrote: "There is no doubt that Lonnie Zamora saw an object which left quite an impression on him. There is also no question about Zamora's reliability. He is a serious police officer, a pillar of his church, and a man experienced in recognizing airborne vehicles."

Historical note:

During the 1960s the US was engaged in a programme to send a manned mission to the moon, and may have engaged in trials of space vehicles in remote areas. These would probably have been top secret.



Investigating the site of the UFO landing, Lonnie Zamora on the left.



One of the four impressions found at the Socorro site.



Zamora's sketch of the 'UFO'.



From an oil painting based on photographs taken of the actual landing site. The image portrays the object just as it began to lift off and from a viewpoint near where Mr. Zamora reportedly stood. Mr. Zamora has seen this illustration and stated that it is a good representation of what he observed.

(a) Comment briefly on:

- (i) the reliability of Zamora as a witness; [2]
and
(ii) the plausibility of his account. [2]

(b) How strong is the corroboration given to Lonnie Zamora's story by the other witnesses and facts? [4]

(c) Does the passage offer strong support for the claim that the earth has been visited by aliens? Support your answer with reference to the evidence. [5]

2 Read the following passage and answer the questions that follow.

Positive discrimination is the practice of favouring applicants for a job or award who are perceived as having had a more difficult starting point. An example is that of universities which give special consideration to students from underprivileged backgrounds; they are awarded places on university courses when their results are below those of more privileged competitors. This attitude to discrimination, in the work place and in education, is wrong.

This is an attempt to redress an injustice by dealing out compensation rather than addressing the causes of the problem. If you find that a tyre of your bicycle is badly worn down on the rim where the brake pads are, you can either decide to strengthen the tyre at that point (or perhaps get a new tyre) or you can decide to re-align the brakes and adjust the system so that it is no longer wearing away. Favouring underprivileged applicants is like strengthening the tyres where they have been eroded. What we should be doing is looking for the cause of the problem.

The results of positive discrimination are not just superficial, but counter-productive. There are two reasons for this as can be seen from the following examples about university applicants.

Firstly, any favouring of underprivileged candidates will necessarily discriminate against the regular candidates. If someone is awarded a position when he/she has a less distinguished set of results then someone else will have had to sacrifice his/her place. The latter person has every right to feel discriminated against – their privileged upbringing is counting against them and they will feel that this is unfair.

Secondly, even if places can be reserved for the beneficiaries of positive discrimination (without affecting the normal candidates), there are reasons to be sceptical of the process. A survey of recent university entrants revealed that those who had won their places by being specially favoured were less confident than their fellow students, and that they were also treated with less respect. So the negative effects of the unfair treatment are likely to be more profound than the apparent rewards of the job or award that has been won.

- (a)** Identify the main conclusion of the argument. **[1]**
- (b)** Give the two reasons that the author offers for saying that positive discrimination is counter-productive. **[2]**
- (c)** Assess the relevance and adequacy of the analogy in the second paragraph. **[3]**
- (d)** Identify an unstated assumption made by the author in the fourth paragraph. **[2]**
- (e)** Give four points of assessment with respect to the strength or weakness of the reasoning in the last paragraph. **[4]**

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3 Study this article and then answer the questions that follow.

Caffeine is the most widely consumed psychoactive substance on earth, prized by almost every human culture for its ability to perk people up and keep them awake. In North America, around 90% of adults report using caffeine every day. At least half the population of the world consumes tea.

UK Study		
Average caffeine content for caffeine rich food and drinks		
	Volume (milliliters ml)	Caffeine content (milligrams mg)
Filter coffee	200	140
Instant coffee	200	80
Tea	200	40
Typical cola	330	32
	Weight (grams g)	Caffeine content (milligrams mg)
Dark chocolate	30	35
Milk chocolate	30	15
Fatal dose of caffeine – 10 g		
Average daily consumption of caffeine (UK adult) 280 mg		

Canadian Study

In a Canadian study of coffee consumption the mean caffeine content was about 80mg per 150ml cup.

However, the range of measurements for individuals was 30–170 mg per 150 ml cup. In addition, actual servings varied from 25–330ml.

Many people feel vaguely uneasy about their caffeine intake. There's the fact that it's addictive. It might give you a stroke or a heart attack. It might make you fat. Recent evidence, however, suggests that caffeine's critics are wrong. Caffeine has a multitude of health benefits.

24 studies now show that coffee drinkers have a 25% reduced risk of colorectal cancer. The more coffee you drink, the lower the risk. Several studies have also shown reduced risk of liver cancer and lower incidence of Parkinson's disease and type 2 diabetes among coffee drinkers. Caffeine may even help delay the onset of Alzheimer's disease and alcohol-related liver damage.

Nobody's really sure why coffee has such diverse benefits. According to one researcher many people think of coffee simply in terms of its caffeine content, but in coffee there are probably 2000 other chemicals. The anti-cancer effects may be due to antioxidants called polyphenols.

The debate about caffeine turns out mostly to be simple common sense. Too much caffeine will give you the shakes and keep you up at night. It might even give you disconcerting but largely harmless heart palpitations and you'll suffer mild withdrawal symptoms if you stop. On the whole, you should drink the amount of coffee you are happy with.

- (a) For each of the following decide whether it can reliably be concluded from the evidence in the above passage.
- (i) Someone who drinks four 150ml cups of filter coffee exceeds the average UK daily consumption of caffeine. [1]
 - (ii) It would be extremely difficult to consume a fatal dose of caffeine as part of a normal diet. [1]
 - (iii) In the Canadian study no actual serving contained less than 30mg of caffeine. [1]
 - (iv) The average daily caffeine consumption per person is greater in Canada than in the UK. [1]
- (b) How well does the evidence support the statement that “caffeine’s critics are wrong”? [3]
- (c) How would you respond to the author’s suggestion that we should drink the amount of coffee we feel happy with? [2]
- (d) “Nobody steals or commits murder for caffeine as they do for hard drugs.” How far does this comment answer concerns raised in the above argument about the addictiveness of caffeine? [3]

4 Critically evaluate the following argument. You should:

- (a) Show that you have a clear understanding of the argument by identifying its main conclusion and the reasoning used to support it. [3]
- (b) Evaluate the argument by identifying any **unstated** assumptions and discussing any weaknesses and flaws. [6]
- (c) Offer two further arguments which could be used in support of the argument, or against the argument. [4]

Big money in the game of football ruins the chances of less wealthy teams succeeding at the highest level. When a wealthy football team can buy the best players from every other team, it is inevitable that the club will win the most games and therefore always be at the top of the national league. The club gets more money from winning, and thus the cycle goes on. So, an annual limit on spending should be imposed on every football club.

Some footballers earn more in a week than a doctor would earn in a year. These kinds of wages do not reflect wages in the working world. Many youngsters idolize football players but the lifestyle that these players can afford creates unrealistic expectations, envy and dissatisfaction.

The higher levels of the league become a contest between two or three wealthy teams, who own the best players in the world. This kills competition between teams. So positions in the league become entirely predictable which reduces the interest for fans.

Teams lower down the league are forced to sell their most successful players when they face financial difficulties. The team's success will decline after the loss of their most talented players, which means that investment in the club will be reduced, and the team falls further down the league table.

If football clubs were limited in their spending on players, this would create wider competition between teams because all teams could retain their talented players. For football supporters, it would make the league more exciting to follow. It becomes less certain who's going to win, which is preferable to knowing which one of two or three teams will eventually take the title of champions.

A spending limit would ensure a more equal distribution of wealth and skills between the teams. It would mean that teams with poor training grounds would have a chance of improving their facilities which, in turn, would allow for young talent to be trained for the team.

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Question 1

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