ДОНСКОЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ

УПРАВЛЕНИЕ ДИСТАНЦИОННОГО ОБУЧЕНИЯ И ПОВЫШЕНИЯ КВАЛИФИКАЦИИ
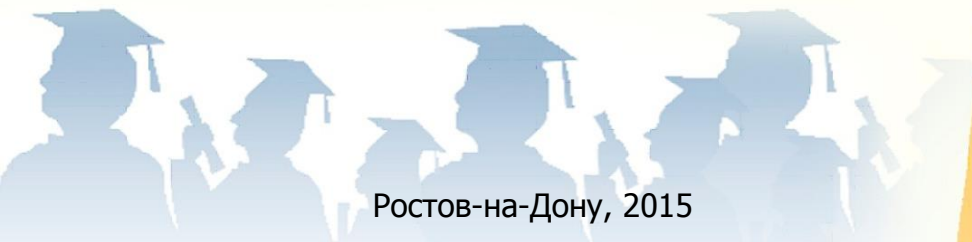
Кафедра «Лингвистика и иностранные языки»

МЕТОДИЧЕСКИЕ УКАЗАНИЯ
по дисциплине

«Практический курс перевода первого иностранного языка»

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Аннотация

Методические указания предназначены для студентов всех форм обучения направления 45.03.02.

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Оглавление

Лексические приемы перевода
(транскрипция, транслитерация, калькирование).

1. Переведите текст. Сделайте предпереводческий и переводческий анализ (найдите термины и терминологические сочетания, определите, в каких случаях уместно применить переводческую транскрипцию, а в каких следует прибегнуть к другим способам).

Science often means different things to different people. To many it means bodies of knowledge about the physical world grouped under different subjects; to some it means research or the pursuit of truth; to some it means the development of technology intended to benefit mankind; and to others it means finding out, experimenting, measuring. These are all different aspects of science, as the knowledge, experimenting, technology, etc., have all been produced by what could be called the "processes of science". Environmental problems are just one aspect of life to which science can be applied, but they are quite urgently in need of solution. Some science concepts are particularly relevant in the solving of environmental issues. Among them are:

1. <u>Energy</u> (types of energy, law of conservation of energy, and law of energy degradation);
2. <u>Ecosystem</u> (energy flow in ecosystems, law of conservation of matter, nutrient cycling in ecosystems, evolution of ecosystems);
3. <u>Resources</u> (the nature of resources: inexhaustible, renewable, irreplaceable);
4. <u>Food</u> (production, nutrition, energy use);
5. <u>Pollution</u> (pollutant, threshold, synergy, persistence, biological magnification);
6. <u>Human population</u> (growth and control, birth rate, death rate, fertility rate, marriage age, density, and distribution).

2. Переведите текст, обращая внимание на перевод названий учреждений и географических точек. Определите, в каких случаях уместно применить переводческую транскрипцию, а в каких следует прибегнуть к другим способам.

Research Triangle Institute is a not-for-profit contract research corporation located on a 180-acre campus in North Carolina's Triangle Park. RTI is a free-standing corporate entity created in 1958 by joint action of the University of North Carolina at Chapel Hill, Duke Univer-

sity, and North Carolina State University. RTI's organisation facilitates the formation of multidisciplinary teams to address complex research issues in many scientific, technical, and social subjects.

3. Переведите письменно следующие термины и терминологические словосочетания, употребляя транскрипцию или транслитерацию.

bonus
gold certificate
crossed cheque
clearing bank
close corporation
bank references
tariff quota
terminals of the airport
visual control
active interface
vibration monitoring
gas chromatograph
atomic mass spectrometer
Magna Carta
London Traded Option
future business

4. Выделите в тексте единицы, подлежащие либо транскрипции, либо калькированию, либо смешанному переводу.

The main body of the Salish, from whom the Bella Coola have become separated, occupy a large and continuous area in southern British Columbia and the Western portion of the State of Washington. They also occupy the eastern part of Vancouver Island, south of Cape Mudge, and the southern end of the Island around Victoria. On the mainland of British Columbia and the state of Washington the boundaries are less definite. Salish-speaking peoples live along the Frazer River and occupy its large tributary, the Thompson River. These interiour Salish tribes, the Thompson, Lillooet, and Shuswap, have never been considered as possessing the culture of the coast peoples since their houses, dress, food, religion, and art, are quite different not only from those of the Northwest Coast, but from their other neighbours as well.

5. Определите в тексте термины и терминологические обороты, которые подлежат кальки- рованию. Переведите письмен-

но текст.

After my April visit I was so impressed by the Great Pyramid that I spent several weeks researching its history. I discovered that it had been built around 2250 BC for Kufu (or Cheops), the second Pharaoh of the Fourth Dynasty, and that it was also the single largest edifice ever constructed by man. As I researched the subject further it became clear to me that the real purpose of the Great Pyramid was, in fact, a matter of considerable debate. On one side stood the most orthodox and prosaic scholars insisting that it was nothing more than a mausoleum. On the other side stood the pyramidologists — an apocalyptic tribe who pretended to find all manner of prophecies and signs in virtually every dimension of the immense structure. I then learned that a team of Japanese engineers had recently tried to build a 35-feet high replica of the Great Pyramid limiting itself strictly to the techniques of the Fourth Dynasty (as proved by archeology), which construction turned out to be impossible under these limitations.

6. Найдите термины, которым можно определить двойные соответствия: транскрипции и кальки. Переведите письменно текст, используя оба варианта.

Fundamentally, we can understand the way in which language *represents* the world to us, in terms of two *opposing positions.* According to one view, human beings generally (whatever their culture or language are endowed with a common stock *of basic concepts -* *"conceptual primes"* as they are sometimes known. Language, according to this view, is merely a vehicle for expressing *the conceptual system* which exists independently of it. And, because all the *concept systems* share a common basis, all languages turn out to be *fundamentally* similar. According to this position, thought *determines* language. We might characterize this view as *the "universalist" position.*

The *alternative position* maintains that thought is difficult to separate from language; each is woven inextricably into the other. Concepts can only take shape if and when we have words and *structures* in which to express them. Thinking depends crucially upon language. Because *the vocabularies and structures* of separate languages can vary so widely, it makes no sense to posit conceptual primes *of a universal nature. Habitual users* of one language will experience and understand the world in ways peculiar to that language and different from those of habitual users of another language. The latter viewpoint might be termed *the "relativist" position.*

Лексико-семантические трансформации (конкретизация, генерализация, модуляция).

1. Переведите следующие предложения, используя указанные приемы.

Конкретизация

1. It's sweet for you to see my patients *go wrong* and yours recover.

2. The painting was called 'Napoleon on his mount visiting the plague stricken in the streets of Jaffa'.

Генерализация

3. He was a thin, stoop-shouldered man not much under *six feet tall*.

4. At this moment O'Brian glanced at his *wrist-watch.*

Модуляция

5. The Liverpool by-election was *an acid test* for the Labour candidate.

6. At last he *found his voice.*

2. Найдите переводческие решения для выделенных единиц, используя прием конкретизации исходного значения.

1. There we are likely to see an inhospitable land *of rocks* and crazily precipitous *crags* and mountains under a big sky.

2. The tree also is *sitting* quietly, *doing* nothing; actually all parts of the cosmos are *doing* the same thing — *being.*

3. The millennia pass and the big round eyes of fish stare at the various shapes in this corner of the subaqueous *universe.*

4. When we, human beings, can stop using *language* or when we can use it to cope purely and only with the present moment, we find that the quality of our living is changed.

5. When we sit quietly with the same unselfconscious *concentration,* we also generate *organismal* joy.

6. Eight hundred years ago Toba, a Japanese artist, painted a long scroll with many scenes of apes and frogs and rabbits and deer *frolicking;* in this scroll, for example, a frog sits cross-legged in a 'sacred' place, as if he were the Buddha or a Buddhist *abbot.*

7. Many of us tend to think of life as a *parade,* something planned to be a triumph of *artifice* over nature.

8. True insight does not issue from specialized knowledge but comes from the preconscious *intuitions* of one's whole being, from one's own

code.

3. *Проанализируйте выделенные слова и найдите перевод-ческие решения для выделенных единиц, используя прием кон-кретизации. Переведите письменно текст.*

Dostoevsky was a deeply religious man and politically a *strong* conservative Slavophile. For a short time, he became editor of the archconservative magazine *The Citizen* and later a *regular* con-tributor. He waged war against the liberals and the revolutionaries, who repaid him by calling his *work* "corruption" and "lunacy". For Dostoevsky, Western society was too materialistic and *commercial;* instead he felt the values of the simple Russian people — meekness, compassion and acceptance of the will of God — were what society should *emulate.*

During their *parallel careers,* as Tolstoy was writing about the world of the country gentry, a class and a way of life which were gradually disappearing, Dostoevsky was creating the anti-heroes who *haunted* the dark streets of misty St. Petersburg. Yet, although they were very different — Tolstoy the *champion* of nature and man, the brilliant recorder of reality in its most precise detail, and Dostoevsky the relentless explorer of the dark *recesses* of men's souls — they were joined in their *belief* that in the Russian people lay the virtues that could *illuminate* the world.

4. *Проанализируйте выделенные слова и найдите перевод-ческие решения для выделенных единиц, используя прием кон-кретизации исходного значения. Переведите письменно текст.*

At one point during my *career* I held an administrative *point* in the government, which generally *precluded* the practice of ongo-ing therapy. I did *from time to time>* however, see people for brief consultations. Often they were high-ranking *political figures.* One such was Mr. R., a *wealthy* lawyer *on leave of absence* from his firm while serving as general counsel to a large federal department. It was June. Mr. R. had consulted me about his son, Roger, who had turned fifteen the month before. Although Roger had been *a good scholar* in one of the suburban public schools, his marks had de-clined gradually but steadily throughout the ninth grade. In his end-of-the-year evaluation the school guidance counsellor had told Mr. and Mrs. R. that Roger would be *promoted* to the tenth grade but suggested a psychiatric evaluation to determine the cause of his *ac-ademic decline.*

5. Переведите текст, используя соответствующие лексические и лексико-семантические приемы.

Over the centuries warring armies have *tramped* most of the *globe*, meeting for a few brief *moments* of bloodletting before continuing their *odyssey.* In some

of those conflicts the places where they met to do battle were already *scenes of note. Quebec.* Berlin. Moscow. *Paris.* Rome. In large measure the *Civil War* was different. It stands unique among conflicts for the number of simple, *humble* places that it immortalised. To be sure, the armies of *Blue and Gray* met at *Nashville*, fought for Richmond, even *skirmished* outside Washington. But the war was won and lost on other battlefields — *sites* not likely to be remembered otherwise. Shiloh. Manassas. Westport. *Antietam.* Some of these *locations* did not even appear on the maps of that era. Yet so important did they become for the history of the States that their names are *emblazoned* forever on the national consciousness. Standing above all the others is *Gettysburg.*

Грамматические трансформации

Членение и объединение предложений

1. *Переведите следующие высказывания, при необходимости применяя прием членения.*
1. The atomic power plant in Scotland could prove to be a most expensive — and destructive — white elephant», says Mr Wilfrid Andrews, of the Royal Civil Servants Club, in the February issue of Reader's Digest.
2. Britain's financial problems will be magnified — if not caused — by trying to run a world currency.
3. In a complex world, the companies that thrive will be those that can combine the traditional strength with something new.
4. It ought to be remembered that it was not the North but the South which undertook the war, the former acting only in defence.
5. It was a situation of delicacy to be tactfully approached — if at all.
6. Mrs Makin woke early to find two burglars carrying her TV set from her home.

7. So with the lamps all put out, the moon sunk and a thin rain drumming on the roof, a downpouring of immense darkness began.

8. Sometimes, when she saw him, she felt — there was no re-pressing it — plain irritated.

2. *Переведите следующие высказывания, при необходимости применяя прием объединения.*

1. Yet, at the moment consumers and government seem to be in denial. They refuse to accept their own responsibility.

2. His natural aptitude for native languages induced him to study African tongues and dialects and it was not many years before he was appointed to the Chair of Asiatic and African Languages which he now occupies.

3. He has shown that he has all the human feelings of one of the computers put out by the International Business Machine Corp.

4. I disagree with those in our industry who believe that the only answer to climate change and global warming is to question the science.

3. *Переведите следующие высказывания, при необходимости применяя прием членения.*

1. The two boys flew on and on towards the village speechless with horror.

2. How well I recollect it, on a cold grey afternoon, with a dull sky, threatening rain.

3. The United States reactionaries likewise cynically sabotaged cooperation with the USSR during World War 2, in the hope that Hitler's forces would so butcher the Red Army as to make it virtually powerless after the war.

4. Italian magistrates have issued warrants for the arrest of 40 people over a huge fruit and vegetable racket they say has defrauded the company of up to 3 million euro.

5. The blood-sucking leech, which fell out of medical favour a century ago after a career that predated the Christian era, is back in the science laboratories , as a result of research indicating it may have a role in treating tumours and other conditions.

6. House prices increased by 4% in the third quarter of the year, the same rise as in the previous quarter and giving an annual increase of 12% to the end September, according to the latest house price survey by the Nationwide Building Society.

7. A diesel engine is a ma-   chine which produces power by

burning oil in air which has been quickly compressed to a high pressure by a piston, moving in a closed cylinder.

8. From the example of people who lived in one of the finest climate but failed to make progress, let us turn to a case of quite the opposite type.

9. Polling booths closed in most of France at 6 p.m. this evening after a heavy poll of 75 to 80% of the electorate in the first round of the general election.

10. Both engine crews leaped to safety yesterday from a collision between a parcels train and a freight train near Morris Cowley, Oxfordshire.

4. Переведите следующие высказывания, при необходимости применяя прием объединения.

1. It is not possible to do the work in two days. Nor is it necessary.

2. The third center extended widely. Its eastern limit was on the western border of Persia. It embraced Mesopotamia, Syria, Egypt, and Greece, and on its flanks included surrounding countries such as Asia and Minor.

3. These merges and acquisitions don't constitute an endgame. The industry is not shrinking.

4. Demand for oil is 12 percent higher than it was a decade ago. Gas demand is 30 percent higher.

5. Переведите следующие высказывания, при необходимости применяя прием членения и объединения.

1. It's pretty tough to make people understand you when you're talking to them with two crab apples in your cheeks.

2. John decided not to utter another word, thinking that it would be futile.

3. It was a busy night; the bar was busy, the crap table was busy, the ping-pong table was busy.

4. There were four of them seated together at a table in the officer's club the last time he and Clevinger had called each other crazy.

5. In a bed in tte small private section at the end of the ward was the solemn middle-aged colonel who was visited every day by a gentle, sweet-faced woman.

Грамматические замены

1. Переведите предложения, используйте грамматическую замену формы слова.

1. She was paid fifteen <u>thousand</u> dollars.
2. Your hair's so lovely!
3. A finely written novel about the <u>lives and struggles</u> of the people of Trinidad.
4. This policy of strength involves serious <u>risks</u>.
5. A government with <u>a dollar</u> in one hand and <u>a gun</u> in the other.

2. Переведите предложения, используйте грамматическую замену части речи.

1. I'm a moderate <u>smoker.</u>
2. She looked like a very good <u>dancer.</u>
3. And yet, though I have read so much, I am a bad <u>reader</u> and I am a poor skipper.
4. When the French were doing most of the lighting against the Vietnamese, the New York Times <u>editorialized,</u> February 12, 1950: Indo-China is a prize worth a large gamble. In the North are <u>exportable</u> tin, tungsten, zinc, manganese, coal, lumber and rice, and in the South are rice, rubber, tea, pepper...
5. Don't forget that a war was fought in this country <u>to free</u> slaves. (Th. Dreiser)
6. Their contribution is great and those who <u>underestimate</u> it make a bad mistake.
7. Chopin had turned the piano a singer.
8. Lord Nasby stretched a <u>careless</u> hand.
9. The Democrats, cheered by striking gains in the November elections, were casting a <u>hopeful</u> eye toward 1932.
10. <u>Australian</u> prosperity was followed by a slump.
11. <u>Anglo-French</u> aims in the Middle East were not realised
12. <u>Cotton</u> capitalism
13. During the decades before 1914 Germany had therefore become more powerful than England, both <u>industrially and militarily</u>.
14. At the end of World War I, the big monopolies held the United States within their grasp more firmly than ever, both <u>industrially and politically</u>.
15. Continued laser weapon tests run counter to the strategic arms limitation agreements. 8.

16. Growing ecological movement is a sign of the time.

3. Переведите предложения, используйте грамматическую замену члена предложения.

1. She was brought here last night.
2. The psychiatrist was shocked by the smile. 3. He had nothing to say.
4. I know he was shocked by the marriage, I'm sure you all were, but that's no reason to be like this.
5. "Was it a break-in, a robbery?" "I don't think so. Nothing was taken"
6. Later that week, John received a telephone call at the office from his father.

ЛЕКСИКО-ГРАММАТИЧЕСКИЕ трансформации

Антонимический перевод

1. Переведите предложения, используя антонимический перевод.

1. It wasn't too far.
2. A murderer is only safe when he is in prison.
3. I cannot forget the smallest detail of that room.
4. You have to remember that this was in the sixties.
5. It wasn't a pretty story, was it?
6. I don't think he knew what he was saying.
7. Paul had very little difficulty in finding the dining hall.
8. He wished Betty were here.
9. I only wish I could. I wish I had the time.
10. Keep the child out of the sun.
11. Snowdrifts three feet deep.

Компенсация

1. Переведите, используя прием компенсации.

1. "Why can't you be human, like you used to be?" And he had replied, "You mean as I used to be".
2. Lou had not taken much notice of Elizabeth's dull little monthly letters, almost illiterate, for Elizabeth, as she herself always said, was not much of a scholar.
3. Mr. Prendergast made a little joke about soles and soles.

4. My daddy's coming tomorrow on a nairiplane.

5. I've noticed he don't – doesn't talk that way. He has nice manners.

Опущения и добавления

1. Переведите, используя добавления и опущения

1. delegates from various industries

2. The neighbours are very friendly

3. He wants a few days before Christmas up at Red Hill, did you know?

4. June set silent , with her face to the breeze.

5. She was upset. Something was very wrong. She and Irene had been such friends.

6. She looked up at "the Goya" hanging opposite.

7. I began a book.

8. Just and equitable treatment

9. You're a sweet person, Roxanne.

10. I've baked a batch of chocolate brownies.

11. Do you really and truly think so?

12. Roads and walls were painted with anti-war slogans 12 inches high

13. What difference does it make?

14. Wait, let me tie my shoes, will you?

Интернациональные и псевдоинтернациональные слова («ЛОЖНЫЕ ДРУЗЬЯ» ПЕРЕВОДЧИКА)

Слова, относящиеся к этому разделу, можно подразделить на три группы:

1. Слова, имеющие внешнее сходство (звучание и написание) со словами русского языка, но значение которых не всегда совпадает. Например: dramatic *драматический, драматичный, неожиданный, яркий, впечатляющий, сенсационный,* decade *десятилетие;* popular *народный, популярный;* formal *формальный, официальный;* nation *нация, народ, страна;* sabotage *вредительство, диверсионный акт, саботаж* и многие другие (в зависимости от контекста эти слова могут иметь другие оттенки значения и переводиться иначе).

2. Слова, которые во множественном числе приобретают новое значение, как например: difference *разница, различие* — differences 1) *различия,* 2) *разногласия;* development *развитие* — developments *события* и т. д.

3. Слова, употребление которых в единственном и множественном числе не совпадает в русском и английском языках. Например: industry *промышленность,* industries *промышленность, отрасли промышленности;* policy *политика, политический курс,* policies *политика, политический курс;* atomic weapons (мн. ч.) *атомное оружие* (ед. ч.).

1. Переведите следующие слова.

balloon, baton, billet, conductor, accurate, actual, minister, pathetic, pilot, fabric, intelligent, probe.

2. Переведите следующие предложения.

1. The heaviest blow that the atom bomb fanatics got, however, came with the *dramatic* announcement that the Russians also have got the bomb.

2. The Administration, of course, is loath to contemplate such a fundamental change in its foreign policy. The stakes are too high and American bonds with Europe too numerous to permit such a *dramatic* situation.

3. The Prime Minister's *dramatic* European move was timed to divert public attention from the more dismal news of Rhodesia and the freeze.

4. There is a *popular* tendency, among most newsmen and radio and TV commentators, to portray Congressmen as men who are working themselves to death, sweating and suffering heart attacks to serve the people.

5. He seems to have excluded himself from the vice-presidential candidacy at a time when the public opinion polls report that he is *того, popular* than both the President and the Vice-president.

6. The victory of the *popular* revolution in Cuba has become a splendid example for the peoples of Latin America.

7. This year the election falls on November 3. The outcome is generally known the next morning, though *formally* the balloting takes place in the Electoral College in early December.

8. If the talks make it clear that Britain is committed, the Government will be in a strong position if they decided to apply *formally* for membership next June.

9. The Prime-Minister will reply to the speeches on Monday, after *informal* talks last night, this evening and tomorrow with the Commonwealth Prime Ministers, who have been invited in three groups.

10. This policy will ensure that successive currency crises do not affect the level of economic activity and overall welfare of the *nation.*

11. The meeting expressed the hope that the remaining points of *differences* would be settled when the conference on the cessation of nuclear tests is resumed in Geneva.

12. The main item on the agenda, and one over which most *differences* exist, was the proposed nuclear non-proliferation   treaty.

13. A conspiracy is being brewed in Wall Street and Washington to deny the people any choice in the Presidential elections. The tactic is to suppress the issues and blur any *differences* between the Republican and Democratic candidates.

14. A general strike is one which affects an entire *industry,* an entire locality or a whole country.

15. Disarmament will release for civilian employment millions of people now serving in the armed forces and war *industries.*

16. This fact is recognition of the weight and power of public opinion, of its growing influence on international *developments.*

17. "Generally speaking," says the Survey, *"developments* last year were distinctly less encouraging than was expected."

18. Such *development* would emphasize the region's economic importance and growth potential which would reflected in its population growth, housing and overspill problems.

19. The Prime Minister said that the Government was prepared to set up publicly owned enterprises in the *development* areas.

20. Whereas, before 1914, only professional diplomats were entrusted with international negotiations, a new *development* began to take place: the appearance of statesmen on the scene, and the creation of a number of permanent international bodies composed of delegates, most of whom were not in the diplomatic service of their country.

21. Already very many sections of the Labor, trade union and co-operative movements support *policies* on these lines. Their members number millions.

22. To get the kind of budget the country needs means a fight for a different *policy* within the Labor movement.

23. It lasted the whole decade.

24. She has a very fine complexion.

25. She must be the lunatic.

26. Lincoln's Emancipation Proclamation.

ТЕКСТЫ

1. Переведите текст, используя переводческие трансформации. Сделайте предпереводческий и переводческий анализ текста.

Computer Scientists Develop Program to Decipher Location of Photograph

Computer scientists designed a program that can analyze a photograph to identify where it was taken. The program scans the scene on the photo, noting colors, textures and lines, and uses these elements to compare it to more than six million images previously tagged with locations on online databases. The program has an average success rate of 16 percent, which is better than random chance or a human guess.

A picture may be worth a thousand words - but years after it's snapped, it may be tough to tell where in the world that photo was taken. To solve the problem, researchers have devised the first computer program that can analyze a single photo and fill in the blanks.

Computer scientists at Carnegie Mellon University in Pittsburgh, Pa., designed the program. First, they upload the image. The computer scans the scene and takes note of color, texture and lines - things the human eye can't always perceive. Then, the computer compares its results to more than 6 million digital photos already tagged with locations on the digital-image-sharing website Flickr.

"It does well on landmark images, things that are very recognizable, like the Eiffel Tower or Tiananmen Square," said James Hays, a computer scientist at Carnegie Mellon.

The program also does well on geographic locations that have a unique look, like the deserts of the American Southwest. Computer scientists tested the program on a set of 200 photos.

"It succeeds about 16 percent of the time," Hays said. That number may sound low, but researchers say it's 30-times better than chance and better than the average person taking an educated guess. They also say the rates will improve as people continue to upload and share their photos in cyberspace, giving the program more data to

pull from. Computer scientists say the program could eventually be used in forensic investigations by detectives or in the military.

About GPS: the Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. GPS was originally intended for military applications, but in the 1980s, the government made the system available for civilian use. GPS works in any weather conditions, anywhere in the world, 24 hours a day. GPS satellites circle the earth twice a day in a very precise orbit and transmit signal information to earth. GPS receivers take this information and use a combination of signals to calculate the user's exact location. Essentially, the GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. Now, with distance measurements from a few more satellites, the receiver can determine the user's position and display it on the unit's electronic map.

What are pixels: "pixel" is short for picture element, and represents a single point in a graphic image. Graphics monitors display images by dividing the screen into thousands (or millions) of pixels, arranged in rows and columns. A megapixel equals one million pixels. Pixels are a measure of digital image quality: the more pixels, the better. The modern digital camera works on the same principle as a conventional camera, but instead of focusing light onto a piece of film, it focuses it onto an image sensor array - called a charged coupled device (CCD) - made of tiny light-sensitive diodes that convert light into electrical charges. It turns the fluctuating waves of light (analog data) into bits of digital computer data. The more sensors that are packed onto the CCD's surface, the higher the pixel count, and the higher the resolution of the final image.

2. Переведите текст, используя переводческие трансформации. Сделайте предпереводческий и переводческий анализ текста.

Natural-Disaster Mathematical Aid Systems Aid in Decision-Making

A team of mathematicians from the Complutense University of Madrid (UCM) has developed a computer application that estimates the magnitude of natural disasters and helps non-governmental organizations (NGOs) in the deci- sion making process. The re-

searchers have also presented an on-site humanitarian aid distribution model. Both could have been applied in the case of the recent Haiti earthquake.

"The Sistema Experto para el Diagnóstico en Desastres (SEDD) (Expert System for Disaster Diagnosis) is a natural-disaster diagnosis and prediction computer tool to help NGOs in strategic decision making," Begoña Vitoriano, co-author of a study published this month in the Knowledge-Based Systems Journal, and professor of the Statistics and Operative Research Department of the UCM Mathematics Faculty, explains.

The program starts by taking information about the type of disaster (earthquake, flood, hurricane, tsunami, fire, etc.), quantifiable units (Richter scale for earthquakes, wind speed for hurricanes, etc.) and a vulnerability measurement of the area. To obtain a vulnerability measurement, which is the most difficult to do, the scientists use the Human Development Index provided by the UN per country, and they modify it according to the situation of the affected region.

With these data, the computer application estimates the magnitude of the consequences of the catastrophe "in terms of fatalities, injuries, homeless people, others affected and cost," which is very useful information for NGOs. These variables have been chosen from the Disaster Epidemiology Research Centre database of Lovaina University (Belgium), which is a WHO collaborating centre.

To manage the highly imprecise and uncertain nature of the data gathered in these cases, the researchers work with fuzzy logic, a mathematical tool that operates with numerical intervals (not with exact s) to try to quantify "the highest or lowest" magnitudes as the number of injured or affected people.

Juan Tinguaro Rodríguez, also a member of the UCM team, points out that "The decision aid system that we propose could have been applied perfectly following the recent Haiti earthquake, as it is centred around the assessment of the consequences of disasters such as this, where primary information is scarce, unreliable or, in general, of low quality."

Another application developed by these mathematicians and that has just been published in the Journal of Multi-Criteria Decision Analysis, is a humanitarian aid distribution systems (HADS).

The tool is based on the use of a logistics map of the territory, with nodes (localities) and connections (streets and roads). The "graph" includes aid demand in some nodes (affected populations), supply in others (airports, ports or stores), availability and charac-

teristics of vehicles (type, capacity, speed, cost), as well as data on connections (distances, condition of roads, risk of attack).

"The complex problem of choosing the most suitable distribution routes is a matter that needs to be resolved as quickly as possible and through a multi-criteria decision approach," as it is important to consider aspects such as response time, budget, shipment arrival reliability, risk of attack, fairness of distribution or the priority of reaching certain areas," Begoña Vitoriano points out.

The expert recognizes that by presenting the problem in this way, "it is much more difficult to resolve, but is much more real and useful for organizations." The team continues to improve both models in order to provide a free access service via the Web to NGOs involved in humanitarian logistics efforts. To do this, they rely on the support of the IMath-Consolider public financing programme, within the R&D&i National Plan.

3. Переведите текст, используя переводческие трансформации. Сделайте предпереводческий и переводческий анализ текста.

Gene Test Can Identify Bits of Cancer in Blood

A personalized blood test can tell whether a patient's cancer has spread or come back, offering a better way to see if treatments are working, U.S. researchers said on Thursday. Having a test that can detect tumors in the blood could help doctors customize cancer treatments, offering more aggressive therapy to some patients while sparing others from unneeded chemotherapy or radiation.

"We're talking about what could be a management tool for a number of patients," said Dr Bert Vogelstein of Johns Hopkins University in Baltimore and the Howard Hughes Medical Institute, who worked on the study published in the journal Science Translational Medicine.

The gene-based test takes advantage of rapid advances in the technology to sequence whole genomes - all of a person's genetic code - once a very costly and time-consuming task.

"This is really personalized medicine. This is not something off the shelf," Vogelstein said in a telephone interview. "This is something that has to be designed for each individual patient."

For the study, the researchers took six sets of normal and cancerous tissue from four colorectal and two breast cancer patients, and mapped out the genetic code   in each.

In the cancer samples, the team looked for areas in the genetic code where there were extra DNA copies, or where sections of chromosomes had fused together.

"There are about nine or so rearrangements on average in every sample," Dr Victor Velculescu of Johns Hopkins told reporters at the American Association for the Advancement of Science meeting in San Diego. "They are not present in the normal tissue."

Once the team had identified a genetic signature of the tumor, they looked in patients' blood to see if they could find remnants of DNA that had been shed from the tumor.

They found it in two patients with colorectal cancer.

After these patients had surgery to remove their tumors, levels of the tumors' genetic signature or biomarker, fell, but later returned, suggesting that the cancer remained in the patients' bodies. After a second surgery and a round of chemotherapy, the cancer biomarker levels fell again.

The team thinks the blood tests could be used in cancer patients to detect tumors before they grow big enough to be spotted on imaging machines.

Right now, the test is too costly to be practical.

"It costs right now about $5,000 to do it," Vogelstein said. "There is no question in a couple of years that cost will come down by tenfold at least. Then, a test like this will cost less than an MRI or CT scan," he said.

Velculescu said the test could be available to a broad number of patients in as few as two years.

Meanwhile, the team plans to keep refining the technology and has filed for patents for the blood test.

4. Переведите текст, используя переводческие трансформации. Сделайте предпереводческий и переводческий анализ текста.

Cell Phone Viruses
Software Engineers Allow PCs to Scan Mobile Devices for Viruses

As cell phones, PDAs, and other wireless devices become more sophisticated, hackers are starting to spread viruses that can infect them. Software engineers have developed an application that

allows a PC to scan the memory of a mobile device and eliminate malicious software.

It takes constant vigilance to combat the viruses that persistently lurk in cyber space. While we all know our PCs are vulnerable to data loss, you might be surprised to find out so is your cell phone! A new technology could be the key to ferreting out electronic viruses forever.

That fancy cell phone you use to surf the Web and check e-mail could be infected with a computer virus.

"Our cell phones are becoming more and more sophisticated to look more and more like regular computers, and so they can also acquire viruses," says Adrian Perrig, an assistant professor of engineering at Carnegie Mellon University in Pittsburgh.

While most of us take steps to safeguard our PCs, cell phone viruses are so new you might not even know about them. Engineers at Carnegie Mellon University found a key to detecting even the most evasive electronic bugs. Perrig says, "Our technique is called Soft-Ware-based ATTestation, which allows an external host - like the laptop computer or even another cell phone - allows them to look into the memory of a device in a way that even malicious code executing on the device cannot hide."

Traditional anti-virus programs scan for a list of known threats, but if a threat is not on the list, it's not detected. With software-based attestation - SWATT for short - there's no virus roster. Rather it scans the memory of a handheld device. Because all viruses must dwell in memory, any deviation signals a potential virus.

Right now SWATT only detects bugs. Once they figure out how to exterminate them, it will go on the market. In addition to computers, PDAs and cell phones, this software can detect viruses in any communication device, even the navigation systems of luxury cars.

There are several different ways a computer can become infected. A virus is a small piece of software that attaches itself to an existing program. Every time that program is executed, the virus starts up, too, and can reproduce by attaching itself to even more programs. When contained in an email, the virus usually replicates by automatically mailing itself to dozens of people listed in the victim's email address book.

Unfortunately, viruses don't just replicate, they often cause damage. There is usually a trigger - a command or keystroke - that causes the virus to launch its "at- tack." This can be anything from

leaving a silly message to erasing all of the user's data. For example, whenever the current minutes on an infected computer's clock equaled the day (for example, at 6:27 pm on the 27th of any given month), the Melissa virus would copy the following Bart Simpson quote into the current document: "Twenty-two points, plus triple-word-score, plus 50 points for using all my letters. Game's over. I'm outta here."

Worms are a different type of infection. A piece of worm software uses computer networks and security holes in specific software or operating systems to copy itself from machine to machine. Because Microsoft's Windows platform is so pervasive, for example, many hackers design their worms to exploit security holes in those products. In 2001, the worm Code Red spread rapidly by scanning the Internet for computers running Windows NT or Windows 2000.

In contrast to a worm, a Trojan horse can't replicate itself at all: it is simply a computer program pretending to be something harmless - a game, for example - but instead does damage when the user runs it, often erasing the hard drive.