

Vocabulary from Context

Read the conversations below and guess the meaning of the colored words and phrases by writing a synonym in the parentheses (____). If you need help, look at the choices in the box at the bottom of this page.

A. Ben: Computers have made great **advances** (____) in the last ten years.

[an] **advance** Mei: That's true. They are smarter, faster, and cheaper.
/əd'væns/

B. Bill: Has your car ever **malfunctioned** (____)?

malfunction Chie: Actually, I had a big problem with it last week. It broke down on the highway.
/mæl'fʌŋkʃən/

C. Dan: Which color are you going to **select** (____) for your new car?

select Kaho: I don't know. I like blue or yellow, so I'll probably select one of those.
/sə'lekt/

D. Kan: Which is **superior** (____), an American car or a Japanese car?

superior Lisa: I think American cars break down more than Japanese cars do.
/su:'piəriər/

E. Mary: I **predict** (____) computers will be smarter than humans by 2030.

predict ~ Keiko: I think so too.
/prə'dikt/

F. Steve: Is cancer a sickness which is **age-related** (____)?

resist (~) Saori: Well, it's true that senior citizens have a higher chance of getting cancer.
/rə'zɪst/

G. Mark: What are you **currently** (____) working on in your laboratory?

currently Shun: We just started a project today about what humans will be like in the future.
/'kʌrəntli/

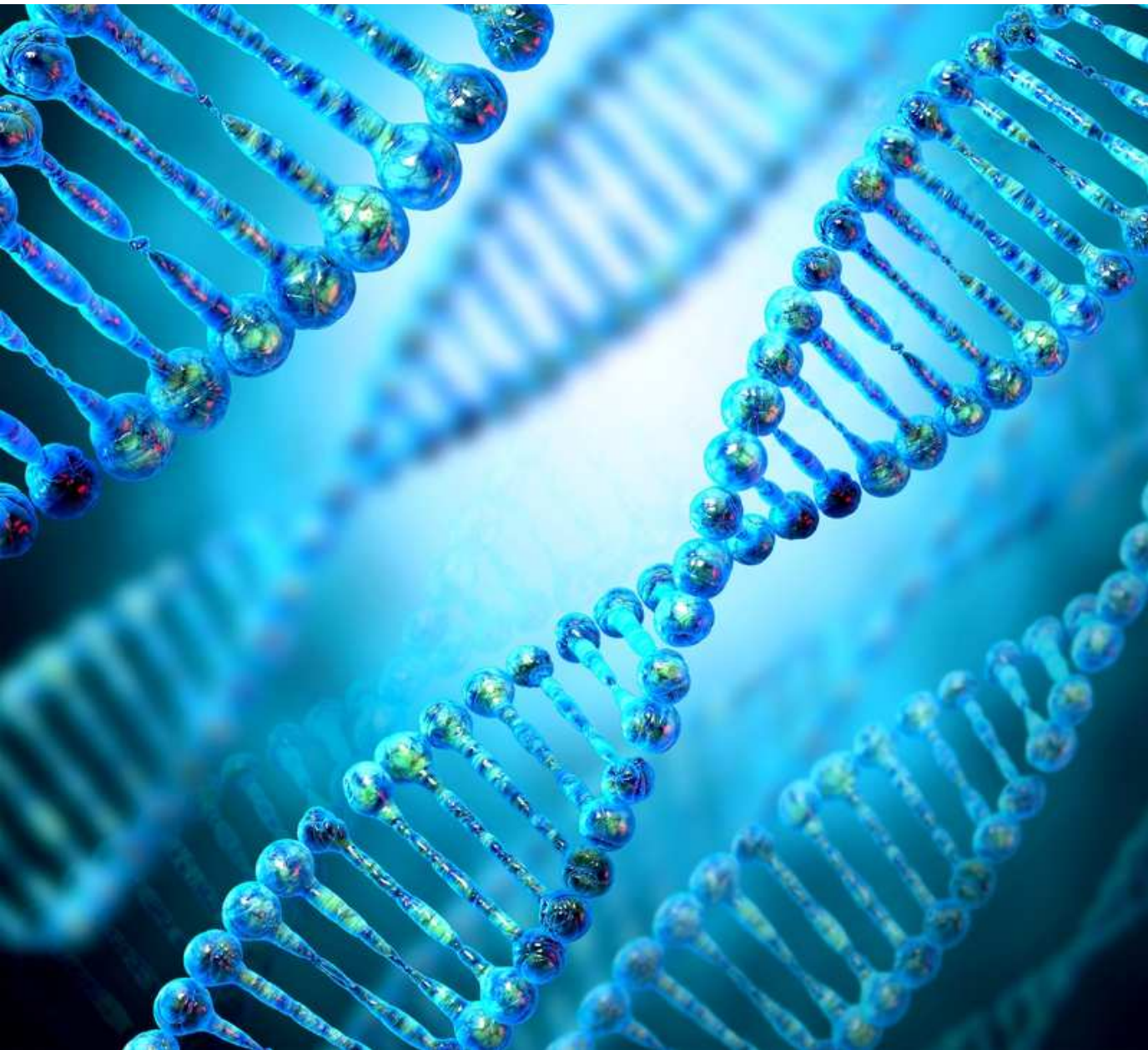
H. Amy: How was your meeting with Professor Nakayama?

brief Rie: It was good but very **brief** (____). We only spoke for five minutes.
/bri:f/

actually / because of being older / believe / better /
choose / now / progress / short / stopped working

In groups, discuss the following questions.

1. Imagine you could have chosen your own eye color, hair color, and height before you were born. What would you have looked like now? *I would have had ~ eyes, ~ hair, and been ~ centimeters tall.*
2. How will humans one hundred years in the future be different from humans today? Think about health, height, age, etc. *Future humans will (be)...*



New words

- 1 - [a] **gene** /dʒiːn/
- 2 - [a] **role** /roʊl/
- 3 - **genetics** /dʒəˈnetiks/
- 8 - **altogether** /ˌɔltəˈgeðər/
- 9 - [a] **breakthrough** /ˈbreɪkˌθruː/
- 10 - **CRISPR** /ˈkrispər/
- 11 - **occur** /əˈkɜːr/
- 12 - **treat** ~ /triːt/
- 15 - **co-develop** ~ /ˈkoodiˈveləp/
- 29 - **immune** /iˈmjuːn/

Expressions

- 2 - play a (very important) part in ~
- 3 - (human beings) of the future
- 4 - (people) of today
- 6 - if not (longer)
- 23 - so far
- 28 - wipe out ~

Our genes greatly affect who we are. They control the way we look and play a very important role in our health and in how long we live. But with fantastic progress in genetics, human beings of the future may be very different from the way we are today. Many of the diseases that affect us now will be gone, and people might live hundreds of years, if not longer. Let's take a look at some amazing advances in science, medicine, and technology that could change our species altogether.

Recently, there has been a huge breakthrough in genetic research. It is called CRISPR technology. Today, there are around six thousand diseases that occur due to genetic problems, and only about five percent of these can be treated. With CRISPR technology, we can fix damaged genes by replacing bad genes with good genes. Jennifer Daudna, a professor of chemistry at the University of California at Berkeley, is a scientist who co-developed CRISPR. She says that our genes are like software which runs our body. Sometimes, this software malfunctions. This causes people to have serious health issues, which can even lead to death. With CRISPR technology, we are able to find any genetic problems and fix them. Scientists are now using CRISPR in plants and animals, and so far, the technology seems to be working very well. According to one researcher, CRISPR has the ability to wipe out all disease and make our bodies immune to sickness.



Professor Jennifer Daudna

Even though CRISPR technology has not yet been used on people, other genetic techniques are already being utilized in human embryos. Dr. Jeffrey Steinberg, a fertility doctor, uses a process that allows parents to test for more than four hundred birth defects. In addition, Dr. Steinberg's techniques give parents the ability to choose desirable features for their future babies, such as sex and eye color. In the near future, this technology will make it possible for doctors and parents to test for additional birth defects and diseases and to select even more traits for their children, such as height, weight, and hair color. Dr. Steinberg thinks that we will be able to choose height by the year 2021.

Pre-birth services like the ones offered by Dr. Steinberg, have become very popular in some countries such as China, where genetic development is seen as a very important part of the country's success in the future. Thousands of Chinese couples are very enthusiastic about receiving various fertility techniques. Chinese babies with modified genes, or what some call "designer babies," are becoming more and more common nowadays.

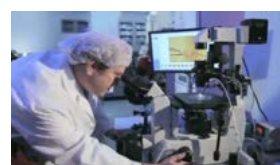
But is it ethical to design a baby? A recent survey in the United Kingdom showed that fifty one percent of people were in favor of using genetic techniques in order to identify birth defects, but only thirteen percent were in favor of using these methods to select desirable features in babies. Some also worry that only the rich would be able to afford such costly genetic processes. If that happened, those who are wealthy could become genetically superior to the rest of the population and might look down on others, perhaps like many people feel superior to animals. This could create a new gap between the rich and the poor and lead to many unforeseen problems.

New words

- 3 - [an] **embryo** /'embri,oo/
- 3 - **fertility** /fər'tɪləti/
- 4 - [a] **process** /'proʊses/
- 6 - **desirable** /də'zairəbəl/
- 6 - [a] **feature** /'fi:tʃər/
- 9 - [a] **trait** /treɪt/
- 16 - **enthusiastic**
/en,θu:zi'æstɪk/
- 17 - **modified** /'mɑ:də,faid/
- 18 - **nowadays** /'naʊə,deɪz/
- 19 - **ethical** /'eθɪkəl/
- 28 - [a] **gap** /gæp/
- 29 - **unforeseen**
/ˌʌnfɔːr'si:n/

Expressions

- 4 - test for ~
- 4 - [a] birth defect
- 12 - [a] pre-birth service
- 17 - [a] designer (baby)



Dr. Steinberg working in his fertility clinic