

# Profiting off our biocapital

**CHIKAKO  
NAKAYAMA**



The media has reported that DeNA Co., a Japanese company with a wide range of mobile and online services, started a DNA testing service in mid-August in collaboration with a research laboratory of the University of Tokyo's Institute of Medical Science.

It was a fragmentary piece of news for most people, just like another little catchier one last year that a famous actress, Angelina Jolie, had gotten a mastectomy as a result of such testing.

The process of testing is quite simple: You register yourself on the website and choose a type of testing kit which costs ¥29,800, ¥19,800 or ¥9,800.

After getting the kit, you put your saliva sample into it and send it back for the test. You will get the results of the analysis of genetic tendencies on 282 or 100 test items — risks of cancer and other illnesses as well as predisposition for certain types of conditions with professional advice provided, or on only 30 test items giving your predisposition to obesity, body type, skin type, etc. All according to the type of kit you bought.

The spokesman of the company proudly said that it would contribute to the prevention of diseases as well as to daily body check and health care. Certainly the testing seems much simpler, less laborious, scientifically more advanced and even cheaper than a traditional thorough medical checkup called *ningen dokku* (literally "human dock") in which people have to undergo various tests at a medical facility spending at least half a day. This kind of checkup began in the 1950s in Japan and has gradually become a once-a-year standard practice for workers above a certain age — and is often mandatory.

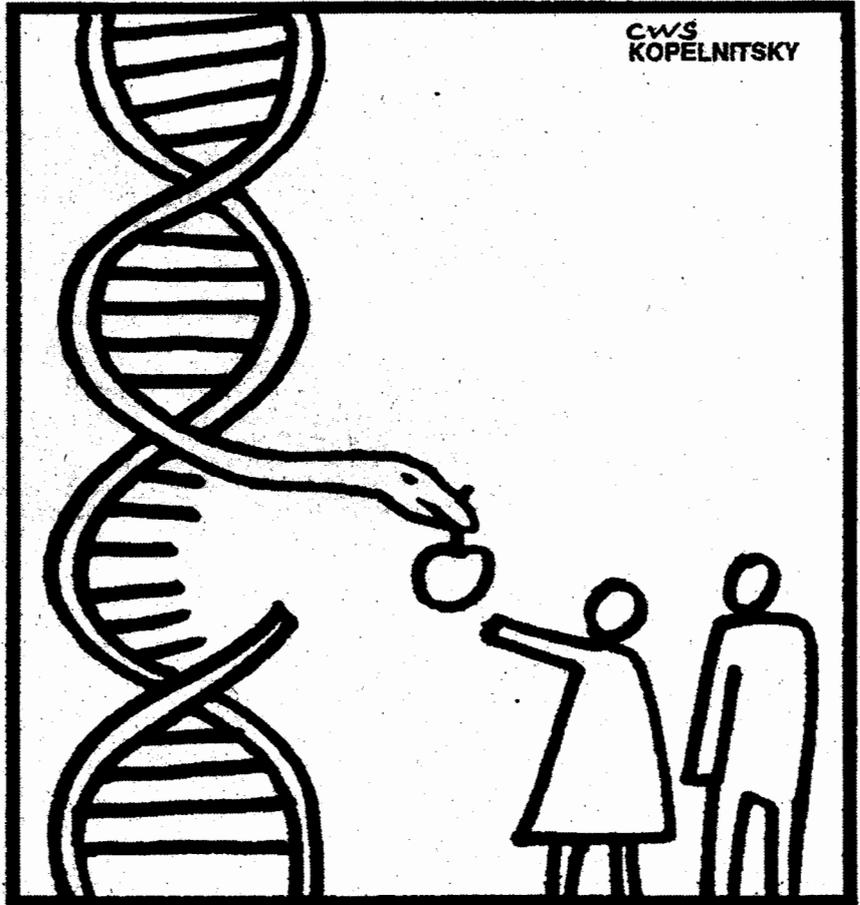
The new DNA testing service as provided by DeNA Co. may contribute to improving our health.

But there are several points in this easily accessible and useful service which we must be careful about. In the United States, a problem occurred in connection with a similar DNA analysis service in November 2013. This gave rise to discussions on some fundamental problems related to this new business. We can learn some lessons from it.

The U.S. Food and Drug Administration (FDA) demanded that 23andMe, a large company that has close connections with Google, stop selling and marketing its product, Personal Genome Service, until it could provide accurate results and adequate evidence.

The testing process and the prices of the kits were similar to those of DeNA, and half a million consumers had received some information, thanks to 23andMe's service, on their high or low risk of falling into certain diseases.

A case was made for the need of the FDA's approval and professionals' commitment. For example, it was pointed out that a consumer may undergo an unnecessary mastectomy, upon being informed of a risk of breast cancer through the cheap testing and possibly



without any professional judgment and advice. Undoubtedly it is unwise to lose one's precious organ or another part of one's body through blindly trusting the results of a test available in the consumer market at a cheap price.

Some would think that DeNA's case is no problem because advice will be provided by medical professionals. But people may choose the cheaper service that does not provide such advice. In addition, even professional doctors cannot be completely certain about the probability and risk of a future onset of diseases for a particular person having particular genes.

Still, even if someone is told that "there is no imminent danger to catch a disease immediately," he or she may become worried rather than relieved, and this anxiety may increase as time passes.

Actually problems related to DNA testing service are complicated because a DNA test clarifies the characteristics of cells and genes that do not necessarily have direct connections with medical problems.

In the American case, the right to know was discussed. The testing possibility through the new service not only awakens a new type of consciousness of one's own body but also promotes its "privatization." The strengthened sense of the privateness of one's body would generate a sense that an individual has complete discretion over what to do with one's body. But this means that one will have to accept heavier self-responsibility over one's condition.

Thoughtless attempts to determine everything related to one's own body on the basis of a DNA testing service would

corner a person into a situation in which he or she has to make an extremely difficult decision.

Another issue is related to the hotly discussed "big data," which explains why companies, both in America and in Japan, dealing in Internet and information technologies have an interest in DNA testing services.

The genetic data of each person are strictly personal but a massive collection of such data could be useful for scientific research and development, and offers a chance for business profits. Thus genetic data of individuals held by such companies would turn into biocapital, which they could use for commercial purposes. There seem to be high expectations for huge business chances in this area, as shown by the fact that almost 700 companies in Japan are engaged in the DNA testing business.

In this connection, we should remember that the Japanese government has recently discussed weakening restrictions imposed on treating such individual data in the interest of promoting business chances — allowing such data to be supplied to other companies without the consent of the individuals concerned only if their names and addresses are deleted.

Would such a condition be enough to protect our privacy? We have to be watchful to ensure that these data are not improperly used and that privacy rights are not violated.

*Chikako Nakayama is a professor of economic thought at the Tokyo University of Foreign Studies.*