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## Wonders of brain – the home of our mind

Yasue Mitsukura

It is said that of all animals, only humans have cognizance. Recently some insist that animals like dogs can laugh or feel sorrow, but it is not scientifically proven yet. I have four dogs at my home. To me they sometimes appear to be laughing or feeling sad, but I know it's nothing but my subjective impression or an interpretation for my own convenience.

Incidentally, do you know where our mind is? In our heart? No, it's in our brain. If you put it this way, the human brain is a very wonderful organ, isn't it? The brain feels all emotions and expertly processes an enormous amount of information captured by the five senses. Oh, I forgot mentioning the sixth sense. If I remember correctly, there is a professor

specializing in "sixth sense engineering." Sixth sense engineering naturally involves the realm of philosophy, so it must be difficult to deal with.

It is well known that dolphins are intelligent. In fact, their cerebrum is far larger than that of humans and has capabilities beyond humans, allowing them, for example, to hear supersonic waves, which is used to measure the distance between the target and the dolphin itself.

Chimpanzees are another example. They have a cerebrum that has evolved to acquire a structure similar to that of humans. Sometime in the far future, their cerebrum may evolve to the extent that they come to have a mind like ours. If it becomes a reality, we may see a world as depicted in the movie "Planet of the Apes."

Let's return to the main subject. Of stimuli that come into the five human sensors (senses of sight, hearing, touch,

smell and taste), stimuli for sight are said to have the greatest impact on our brain. It is known that eye fatigue significantly influences our brain activity. With online shopping, you can purchase your eyeglasses simply by declaring your optical power level even if it is outdated. It is dangerous because you run the risk of wearing glasses that do not match your actual optical power level. If that is the case, according to a research report, your brain will continue to be put under stress, which may lead to poor memory.

"Brain" is a simple word, but the world of the brain is so deep that many questions remain unresolved. The ultimate question is: "Why did the mind (feelings) come into being?"

I occasionally think "If only I had no feelings . . ." But as I wake up the following morning, I always breathe a sigh of relief, saying to myself "Fortunately, I still have feelings." This is another function of feeling, isn't it?

## Science and Technology Information

### The 13th KEIO TECHNO-MALL 2012 "Passion of Science, Enthusiasm of Engineering"

<http://www.kll.keio.ac.jp/ktm/>

Date: December 7 (Fri.), 2012 10:00 ~ 18:00

Tokyo International Forum (Exhibition Hall 2, Basement 2)

Admission free, no prior registration required

The KEIO TECHNO-MALL, organized by KLL, is an annual exhibition of science and technology. For this year, a round-table session by researchers will be held in addition to some 80 exhibition booths and demonstrations. The main event is on the theme "Science, Creation, Emotion" which will feature a keynote speech by the novelist Mr. Hideaki Sena and a talking session by researchers from the Keio Faculty of Science and Engineering.

### The 16th KLL Industry-Academia Collaboration Seminar

<http://www.kll.keio.ac.jp/>

Date: February 22 (Fri.), 2013

This seminar will introduce our research activities related to "precision machining", "actuation" and "simulation" which are the core themes of mechanical engineering. Details of this seminar will be published on the above website.

### Editor's postscript

Associate Professor Yasue Mitsukura's character is so diverse that it's very difficult to describe her personality in one word. On one hand, she appears to be a "bulldozer" type because she is very powerful and completes jobs vigorously. On the other hand, when the bulldozer has passed, she turns into a "roller" making fine adjustments to bring the job to perfection. If you think of the nature of researchers, no wonder one researcher is required to play diverse roles, such as a designer, power shovel, bulldozer, roller and crane.

Ms. Mitsukura has worked for more than one university in the past, but in the interview for this issue she mentioned, "I've found a comfortable haven at Keio." More than one student in the doctor's course already belongs to her lab. I sincerely hope that research work at the Mitsukura lab will become more and more prosperous under Keio's culture of freedom and solidarity.

(Saori Taira)



A scene from the 15th KLL Industry-Academia Collaboration Seminar

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