Interview with Katarzyna Stachowicz, winner of a L'Oréal fellowship for Women in Science

Private archives

Katarzyna Stachowicz strives to combine two passions: science and art. Last year her fascinating research on anxiety won her a prestigious prize for female researchers

Creative Passion

Academia talks to Katarzyna Stachowicz about her research on anxiety, her dual passion for science and art, her family, and the situation of young researchers in Poland

Academia: How did you end up exploring the mechanisms of anxiety disorders?

Katarzyna Stachowicz: I studied medical analysis at the pharmacology department of Jagiellonian University. From the beginning of my time at college, I dreamed of doing real science. That interest evolved into a passion once my master's thesis gave me a taste of real experimental work. I have focused on anxiety and depression since I started working at the Institute of Pharmacology. I owe that interest to my thesis advisor, Prof. Andrzej Pilc, an award-winning specialist on anxiety and depression.

What does your research involve?

Seeking to identify the mechanisms that underlie anxiety. Also, using a range of behavioral tests performed on living organisms (mice, rats) to show that metabotropic glutamate receptors are significantly involved in this reaction. Brain function is controlled by neurotransmitters – chemical compounds that relay signals between neurons. The most common neurotransmitters, glutamate (glutamic acid) and GABA (γ-aminobutyric acid), account for around 60% and 40% of all neurotransmitters, respectively. Even though noradrenaline, dopamine, and serotonin constitute just 0.001% all neurotransmitters, current treatments for anxi-

ety and psychological disorders are based on them. That shows how much we still do not know about how the brain works, and how poorly we understand the mechanisms underlying various psychological disorders.

What are anxiety disorders? How can they be treated?

Anxiety is a negative emotional condition triggered by external or internal stimuli; it is a natural phenomenon, biologically important for survival. But if anxiety becomes too intense or dominant, it becomes pathological. It is an ever-present component of neurotic conditions and many psychotic disorders. Anxiety may continue for many years. It is frequently accompanied by physical symptoms, such as headaches, shortness of breath, carbohydrate disturbances. The first anti-anxiety medications were barbiturates and carbamates, but because they had many side effects they were replaced with benzodiazepines, used mainly in treating generalized anxiety. Unfortunately their long-term use led to tolerance and addiction. Selective enzodiazepine receptor agonists have been found to have somewhat less side effects. Antidepressant medications – reuptake inhibitors of noradrenaline, serotonin, and monoamine oxidase – are another group used in the clinical treatment of anxiety, mainly for panic disorder, phobias, and obsessive-compulsive disorders. β-adrenergic receptors (e.g. propranolol) are effective in treating performance anxiety, although they cause drops in blood pressure.

Do you think that your research will lead to the discovery of an effective and safe drug for anxiety disorders?

It would be quite conceited to believe that my own research will discover a new medication. Many of my colleagues at the Institute and researchers worldwide are working on an anti-anxiety drug. Of course, everyone dreams about making a great discovery, but I prefer to think that my work will contribute one piece to the huge puzzle. The search for an anti-anxiety drug based on metabotropic glutamate receptors was initiated quite recently, in the 1980s. I think it will still take much work and long hours of research before such a drug is discovered, but we scientists are on the right track.

Science is not your only passion. You are also an interior designer.

Yes, in 2008 I graduated from the Kraków School of Art with a degree in interior design. Science and art are not mutually exclusive, but complementary. Art is a kind of "breather" from science, science the systematization of art. These two passions enable me to live life to the fullest and to tap into new potential. Many scientists have artistic talents that help them to recuperate and develop creatively – I am no exception.

You are also the mother of two sons.

Like every mother I wrestle with problems. If you want your kids to grow up to be not just smart but also well-adapted, you need to devote a lot of time to them and discuss things a lot. I think that I have been quite fortunate in life, in the sense that everything happened at the right time. My children were born when I was still at university; I had more time and energy during the "caretaking" period. Now my kids are school-aged, more independent. My husband is actively involved in raising and taking care of our kids, we share the responsibility and support each other, and that I think is the key to success – our joint success, not just my own!

Many women abandon their research careers because they find it too hard to reconcile different roles. There are more female PhD-earners in Poland than male ones, yet the higher one looks up the research hierarchy, the more men one sees. Sometimes a woman's research career does not depend on her, but on her environment, i.e. the glass-ceiling effect. Do you think that women in science somehow need to be supported institutionally?

I'm skeptical about any institutional promotion of women. I think that the glass ceiling should be fought more by making people aware of women's intellectual and organizational potential. This is something that needs to be discussed widely, brought up as often as possible. A great contribution towards supporting women and overcoming stereotypes is made by fellowships targeting female researchers. This sort of initiative is a milestone, making the whole world aware of just how much women can and do achieve. This is a better route than giving women promotions just because they are women. In my opinion that would be unfair both to men and to the women scientists themselves.

One problem faced by both women and men in Polish science is in the poor funding situation. Is it too late to keep young researchers from leaving Poland?

It is never too late. A lot of good things are happening in science, there are various grants, fellowships, and initiatives promoting young researchers. Perhaps the changes are proceeding too slowly, but there is hope. This is of course part of a broader problem – one grant will not solve everything for a scientist who receives a very low salary, and so faces a dilemma between pursuing their research passion or supporting their family. This is something the state government should try to improve. Unfortunately science always comes in last place, always getting put off until later.

Interviewed by
Patrycja Dołowy
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