

aim HIGH

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----- a JOKE + a CARTOON -----

A lawyer, a priest, and a young boy were in a plane that was going to crash, yet they only had 2 parachutes.

The lawyer proclaimed that since he was the smartest man on the plane, that he deserved to survive. He took a chute and jumped.

The priest looks and the young boy, and reflecting back on his life, told the young boy to take the last parachute since he had already lived a wonderful and full life.

The boy replied, "You can have the other chute because the smartest man on this plane just jumped out with my backbag!"



IS GREENLAND REALLY GREEN?



Greenland is the biggest island on Earth (almost seven times bigger than Poland). It was discovered by the Europeans in 10th century, when the Norwegian Eric the Red was sent into that area because of him committing assassination. He called this place Grønland just to encourage future tourists to come to this island. However, the south and west coast of Greenland were, just as today, covered with grass. But soil isn't the best there, so Greenlanders have to import almost everything from other countries. They themselves only get potatoes, meat and fish. Because of the poor land there are not many roads, so transport inside the country costs a lot. And it's not the only problem. The other are long distances and changeable weather. That's why if you want to go there, you must know exactly what you want to see, because you will not be able to move between cities and other places.

Things you want to do also depend on the month when you go there. If you're a fan of winter sports and you've always dreamed about dog sledge ride, you should choose May or April. If you like to know the culture of country you're in, June will be perfect for you, because then (on June 21) there is a national celebration of Greenland which is also the longest day of the year. In July they organize national canoeing championships. In the summer there is also the best chance to see whales. August and November are the months when hunters, but also ordinary citizens go hunting for reindeer. Also in November takes place a national soccer championship. If you love Christmas as much as I do, you should definitely go there in December. Celebrating this holiday and also New Year on Greenland is grand. December is also the best month to see the Northern Lights. The attractions that we can see the whole year are for example: the capital of Greenland - Nuuk with cute, colourful houses, characteristic for northern towns; Greenlandic National Museum, many viewpoints and animal skin processing workshop and glaciers which you can reach by boat, take a cup and drink glacial water which I have heard is very good.

But how to get to Greenland at all? It is best to go there by plane. The flight takes about 5 hours and costs 4,500 PLN per person. Even cheaper flights can be found, but with longer waiting times at the airport.

(Klara Przondo)





WHY YOU SHOULD VISIT JAPAN ALREADY.

Everyone is somewhat familiar with Japan, but have you ever wondered what to do if you actually were to visit this beautiful country? Basic ideas, like going for a walk in the capital or eating sushi are good, but I would like to recommend to all of you some things that I personally find the most appealing in this country.

Firstly, let's focus on the food you'd be able to try there. My personal favourite - ramen, it's a soup with noodles based on different products. There are various kinds, some of them being: shoyu ramen (based on soy sauce), shio ramen (the main component - salt) or tonkotsu ramen (based on pork). What's interesting, the dish was actually imported from China, but it has become one of the most popular foods in Japan.

Many of us love coffee, but have you ever drunk one from a can? Well, it's one of the most popular ways of drinking it on the streets of Japan. This country is full of vending machines and many of them contain various drinks like earlier mentioned canned coffee. There are lots of versions - you can even find flavoured ones, but what's more unexpected is the fact that in cold seasons the cans are warm and in hot ones they are cold. Japan is abundant with amazing foods - you could also try soba, onigiri and of course sushi.

Another thing that makes Japan a country that you should pay a visit to are the shrines. One of the main religions in Japan is Shinto, which is based on Japanese myths, it's polytheistic, so that's why there are many places dedicated to pay tribute and respect to all of the gods. One of the most characteristic part of a shrine is a "Tori" - a gate that's believed to be the one between the world of spirits and the material one. A lot of us will recognise the tori from Itsukushima, which is on the UNESCO list, it's for sure worth visiting. Shrines are actually the traditional place that people in Japan go to on New Year's Eve, they pray for good fortune for the upcoming year and get omens that determinate whether next 12 months will be full of amazing events or filled with bad luck.

Lastly, I have to mention that as we all know manga and anime comes from Japan, so for a fan it's a country full of places that they only dreamt of visiting. For example, on a station in Tokyo you can find a mural that extends for 30 meters with images of characters from some of the most popular anime, like "attack on titan", "my hero academia" and "haikyuu". Also, if you're interested, there are many second hand shops that offer manga for very cheap prices, since it's a used item and they are produced on a bigger scale for the Japanese audience. What really caught my attention are the products dedicated to specific anime characters, like detergents with an image of Levi Ackerman - one of the main protagonists from "attack on titan" - fun, right?

Overall, Japan is that kind of a country that everyone can find something for themselves in, considering all of the foods, attractions and sightseeing locations. If you have never considered visiting Japan, now is the time to do it for real. (Ania Regulska)





PHYSIOTHERAPY RESTORING HEALTH

Physiotherapy helps out with the malfunctional muscular, nervous, respiratory and circulatory systems. It can also protect us from surgery. Not a long time ago, patients went to physiotherapists directed by specialists, such as orthopaedists, neurologists or rheumatologists. These days, it has become common to seek their medical help on our own.

Physiotherapy - what is it?

Physiotherapy consists of various treatments, in which physical phenomena and reactions of the body to various stimuli are used. Depending on the damage to the body, it can be practised separately or as an addition to the pharmacological or surgical treatment.

Methods:

Healing massages – the kind usually depend on the disease;

Hydrotherapy and balneotherapy – treatment with water

Thermotherapy – the therapy using the flow of the thermal energy

Climatotherapy – based on the healing properties of the natural environment

Phototherapy – applies different types of radiation;

Electrotherapy – uses the direct and impulsive current;

Magnetotherapy – takes advantage of the magnetic field;

Ultrasonic Therapy - curing by ultrasounds;

Aerosol Therapy – implementing treating substances in the form of aerosol into the respiratory system;

Manual Therapy – skilful pressing on the painful places in the body.

Raw materials used in physiotherapy

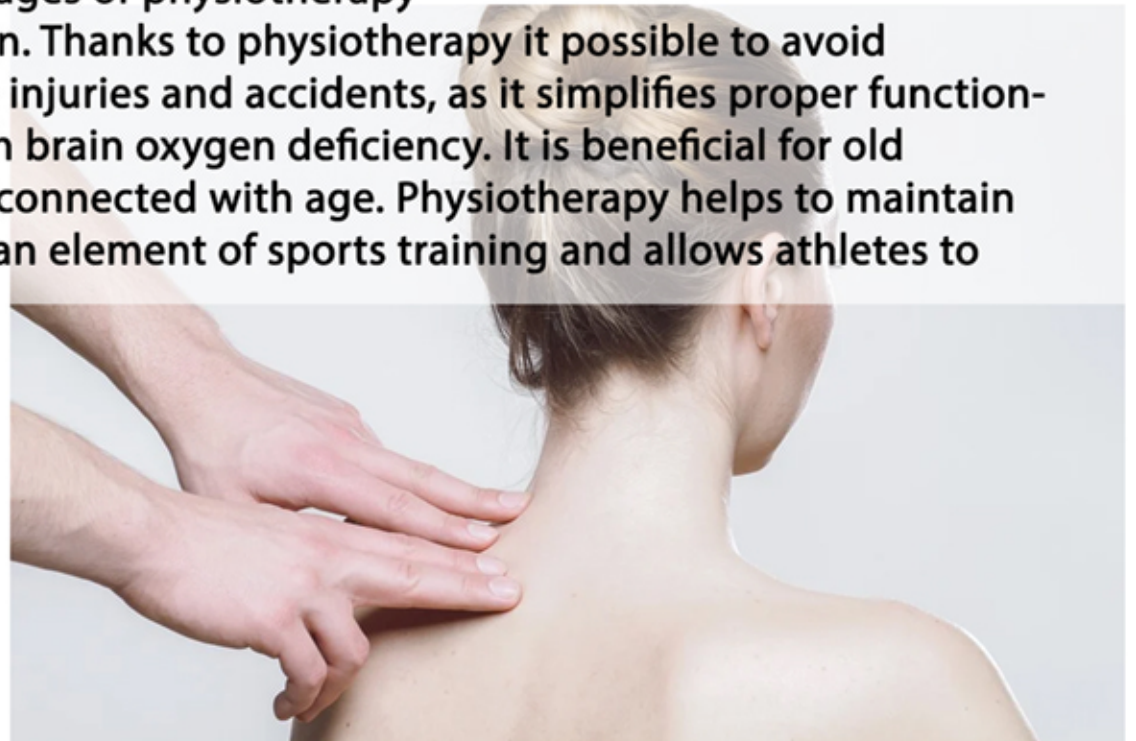
Most of the methods mentioned above use different sources of energy. In some, natural materials, such as mineral water, brine and curing gases are used. The most common mineral waters are the water that contains at least 1000 mg of permanent elements per one litre. Brine is the water with a concentration of NaCl, measuring a minimum of 1,5 percent. The curing gases are mostly carbon dioxide, hydrogen sulfide, radon, oxygen and air.

What does physiotherapy help with?

Physiotherapy can help to heal and attenuate the symptoms of many diseases, such as: myocardial infarction, carpal tunnel syndrome, jamming tendinitis, back pain, Parkinson, multiple sclerosis and others.

Advantages of physiotherapy

Physiotherapy helps to deal with the pain. Thanks to physiotherapy it is possible to avoid surgery. It is significant for patients after injuries and accidents, as it simplifies proper functioning for paralysed people or the ones with brain oxygen deficiency. It is beneficial for old people as well, suffering from problems connected with age. Physiotherapy helps to maintain internal body balance. This is also often an element of sports training and allows athletes to develop their skills. (Julia Daszkiewicz)



DOMESTIC CHORES



Did you ever wonder if having domestic chores as an adolescent has any impact on your future life? Lately, a group of psychologists have proven that it can positively affect your ability to fend for yourself and help you develop good habits, such as dutifulness.

I suppose that if you ask teens about their thoughts on having chores at home, most of them think of it as a duty they have to fulfil. But what they don't see are the benefits coming from that. Moreover, some may even say that it's just a technique their parents use to minimize their own list of household chores. If it comes to parents' view on that subject, I think that, for them, it's a way of teaching their kids responsibility. By helping with chores at home, teenagers may learn how to take care of their surrounding and keep everything organized. Moreover, kids should be taught how to be dutiful from a young age. Starting with parents cleaning with them as a form of a game may encourage children to do it by themselves in the future.

As for me, I think that having chores is crucial when it comes to family life. And I don't see a problem in having some domestic duties as well. However, the number of chores has to be proportional to the age and abilities of the person. Furthermore, as kids tend to follow their parent's example is very important to have a good work ethic at home. If the children see their parents cleaning the house, they are more likely to start doing it themselves.

Taking everything into consideration, I can't imagine a family where kids don't have any chores, as I see it as an inevitable part of living in a community (even the tiniest one). But I'm curious what's your opinion on this subject?

(Aga Zielńska)





TRUE ECOLOGY

In this day and age, all social media influencers, ads and even international corporations are advocating for the reduction of the negative impact that we have on our planet - and with good reason, since our "blue dot's" welfare is indeed a guarantee for a brighter future for us. Meanwhile, the difference between actual pro-ecology actions and those that only give feel-good vibes is sometimes hard to discern. For example, the use of a bamboo toothbrush in Poland doesn't translate to a smaller impact on the planet, since bamboo simply doesn't grow in industrial quantities in our country. The toothbrushes or bamboo must, however, be transported from a place like China on mazout-fired ships, in comparison with which oil could be a symbol of ultimate purity. (source: 300gospodarka) A better illustration for the problem could be the case of the electric car. It's interesting that such a vehicle doesn't necessarily always leave a lower carbon footprint than a normal car with a combustion engine. Why? The biggest reason for this is the process which leads up to the moment when you see the car in the dealership. Constructing just one car battery can emit up to 74% more CO₂ than producing an efficient conventional car if it's made in a factory powered by fossil fuels (for example in Germany). Keep in mind that this doesn't include the negative environmental impact of lithium extraction necessary for the production of these batteries. In fact, the average German car owner would have to drive a non-electric vehicle for about three and a half years (more than 50 000 kilometers) before a Nissan Leaf with a 30 kWh battery would beat it on carbon-dioxide emissions in a coal-heavy country (source: IndustryWeek). This again leads to the issue of the way countries power their power lines. As weather conditions are varied, electric and wind power plants simply can't provide a large enough amount of electricity to run a whole country. That is why more and more people look to atomic power plants, which provide a comparatively large amount of electricity. In fact, one uranium pellet produces the same amount of energy as 1 ton of coal or 120 gallons of oil (source: energy.gov). In new nuclear technologies, it is also possible to reuse once exploited uranium, which in turn means less waste and again less CO₂ emissions as a result. (source: Bizlog) Although nuclear energy isn't without its flaws, it seems to be the most

"green" alternative for all the other methods that we know to date.

To summarise, this small article is only the tip of the iceberg for this important issue - I highly recommend you read the sources I have linked in the text and research the subject on your own. Nonetheless, I hope I have given a bit of food for thought concerning the face of true ecology.

(Łukasz Magierowski)



SICILY

Last year, before the Covid-19 pandemics, I went with my brother and my parents to Italy's biggest island - Sicily. It was the truly magnificent vacation ever.

We arrived in Palermo (the capital city of Sicily) by plane from Wrocław. The journey took about one hour and a half. The first thing you can notice after leaving the plane is the climate. The temperatures in the south of Italy are much higher than in Poland, and also the nald there is drier and more sandy.



And here starts our journey. The first and obligatory thing you must try in a Sicilian café is a kind of cake called cannoli. It is a baked round cake wrapped around sweet ricotta (one of the most famous cheeses in Italy), most often served with a cup of espresso. I tried it first time in a small town of Cefalù, near Palermo. There is the cathedral of Cefalù. In front of this café. It may seem like another ordinary church from the outside, but if you enter, you will be surprised. Almost the whole ceiling is covered with gold and, honestly, I can say I've never seen so much shine in my life; it was beautiful.

The next monument worth seeing and where I actually went to is La Valle dei Templi di Agrigento. The Valley of the Temples, near the city of Agrigento, is the most famous archaeological site in Sicily. It is the number one place to visit, before the Temples of Selinunte and Segesta. In the valley there are eight temples that can be visited, but the two best preserved are undoubtedly the temple of Concordia and the temple of Hera. The walk between the temples is very pleasant and easy to do on foot. On sunny days it would be better to have something to drink because it is a hilly road, and you can get tired very easily. You can also go by bus, but the impressions won't be the same.

For me, the most spectacular and extreme monument is La Scala Dei Turchi. It is an enormous white rock located on the south coast of Sicily. The name comes from the shape of the rock that actually looks like a stair, this element was created not by human, but by erosion of the wind.

To understand why it is famous, you must come there in summer evening and sit for a while and admire beautiful sunset.

The last thing we visited in those days were Le Saline di Marsala. When you leave the city of Marsala, take the salt road that will take you directly to the salt pans. If you are near them, you can smell salt in the air. These giant fields of salt water are beautiful place to take a picture and, as in the previous example, you can admire sunset also from there.

If you are a fan of sunbathing, there is also something for you. Calamosche is said to be one of the most beautiful beaches in Sicily. A perfect location where you can really chill out, and the clear water allows you to swim with the mask and admire various species of water animals.

All of these places were very beautiful and full of surprises, and historical content. I've shown a small part of the Sicily island, but to visit the whole Sicily, you need at least two weeks. For me, this first time in Sicily was very amazing and breathtaking. So, if you're looking to spend amazing time while completely shifting your mindset, Sicily is the answer. (Sebastian Prestini)



BAN ON ADVERTISING TO CHILDREN



Have you ever tried counting how many advertisements you can come across during only one day? I suppose it's even impossible because of their availability at every step of our lives. Nowadays people are bombarded with them all the time, but not only on TV. Now we notice huge billboards on the roads, we constantly get a lot of notifications on our phones.

Moreover, advertisements occupied all platforms in social media, like Instagram or Facebook. Surprisingly, the scientists emphasise the disturbing impact of some adverts on children and urge that we should control who watches them. Are ads really so harmful to the young?

It would seem that they don't contribute negatively to children's lives but we forget about all the frauds and manipulative tricks involved in most of them. First of all, the directors of ads always try to refer to the fairy-tale characters, so as to arouse children's gullibility and mental immaturity. Producers are aware that they can't distinguish what's compatible with moral rules and make reasonable decisions. What's more, they portray actors as parents and teachers because they're usually kids' biggest authorities and are obedient to them at home and school. As a result, the young become an easier target and producers start using tricks to encourage them to purchase new inventions, promising that this item will change their life and is absolutely the must-have.

Children are always interested in everything that's noisy, vivid, weird and surprising. They let themselves be charmed by tempting offers. Kids follow only their emotions, succumb to excitation and become stubborn because they want to have advertised products from parents. And in this case, we should stress that they're minors and don't earn money on their own. Therefore, advertisements cause problems for members of the family who, as adults, must explain and make them forget about the desired items (what's sometimes really exhausting). Moreover, not all people can afford to provide their offsprings with these new extravagant toys and this is how envy is created among them at kindergarten or school.

The last thing is that children don't have only access to immature ads but also to these designed for adults. For examples, commercials which idolize the flavour of beer or present medicine for a nasty headache. Children aren't aware that these products aren't adjusted for their age and can cause health problems. Encouraged by an interesting ad, they reach out to try these at once. Therefore, parent must always keep track of what they are surrounded by.

To conclude, the advertisements aren't an appropriate source for the young. They consist of a lot of manipulatives tricks and frauds they can't notice. The next thing is that producers use kids' mental immaturity and encourage them to buy offered product causing parents problem, who support financially their kids. Moreover, commercials

can lead to a dramatic accident which will influence their lives. (Emilia Lesiewicz)



FRACTALS – THE ART OF REPETITIVENESS



Most probably you've come across the term "fractal". Many associate it with abstract images that have some hypnotic powers trapped inside more or less complicated doodles. If you are more interested in such things, you might be able to name a few most popular examples of those extraordinary pieces of graphics. However, from mathematical point of view, it's a little bit more complicated than that... Let me take you for a journey through the world of fractals with more in-depth look at them.

For starters, it's important to precisely define what fractals really are. And just at the beginning we encounter some problems. Mathematicians haven't come up with universal traits that are true for all the fractals. However, there are a few conditions which, when mostly fulfilled, allow us to call something a fractal. Here are the ones worth mentioning:

- it has nontrivial structure in any scale
- its look is natural (which means it's fimbriate, ragged etc.)
- the structure can't be described with traditional geometry language
- it's (at least roughly) self-similar
- has got quite simple recursive definition

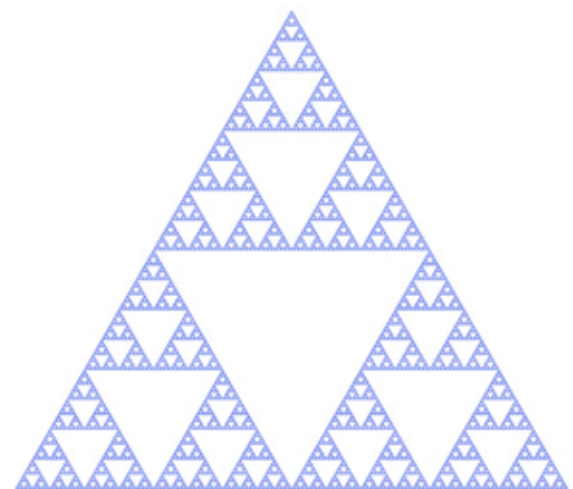
Now with the basic knowledge about fractals we can investigate their origin. Despite looking like an artificial creation of human mind, it is quite common in nature too. For ages we were able to see them on cauliflowers, properly formed ice crystals or ears of grain. The fact that someone noticed it can be proven by how traditional African architecture looks. For example, a circular village with circle-shaped houses quite closely resembles what we intuitively perceive as fractal. Nevertheless, the true beginning of fractal inquiry is attributed to Gottfried Leibniz, a German baroque philosopher and mathematician. His work on recursive self-similarity inspired next generations of superior mathematicians: Karl Weierstrass, Georg Cantor, Felix Klein and Waclaw Sierpiński.

Firstly, Weierstrass came up with the definition of function with graph which was a fractal (it's worth mentioning that his work was a breakthrough in a 200-year-long silence in fractal-concerning mathematics). Then Cantor, Weierstrass's student, followed in his teacher's footsteps and created one of the most recognisable fractal called Cantor set (graphically interpreted as a line which is divided into three with the middle part removed; to create Cantor set we would need to do the same thing with freshly formed parts ad infinitum). Another scientist, Felix Klein, came up with the idea of "self-inverse" fractals (most people associate him with Klein's bottle, an example of impossible object with only one side). For Poles, the most important of previously mentioned "superior mathematicians" is Waclaw Sierpiński. Born in Warsaw in 1882, Sierpiński was the creator of Polish mathematics school and, most importantly for us, author of many fractals. To these days Sierpiński triangle is considered to be a milestone in study of fractals and his works devoted to continuum hypothesis are appreciated by many.

Now, let's look at wider range of fractals. The variety of shapes they take is just astounding. As previously mentioned, many of them are actually similar to some natural objects or simple shapes like squares or triangles. In this category we can put for example Barsley fern, which as the name implies, resembles a common plant – fern. Sierpiński triangle and carpet or Cantor set are more unnatural, however, shapes used to construct them are uncannily banal – only triangles, squares or just lines (obviously, I am not meaning to underestimate impressiveness of these pieces of fractal art). More impressive, more abstract and harder to describe are fractals such as Mandelbrot set or Julia set. The true beauty of these and many more fractals can only be uncovered when we magnify their images. In countless YouTube videos you can see how magnitude impacts the look of fractals and truly say: "Wow, how did they come up with this?!".

Overall, fractals can be considered "the artistic part of maths". This topic intrigued many scientist through centuries and the results of their curiosity can be now spectated in graphic form. The truly mind-boggling fact is that patterns like that widely occur in nature. That one thing opens a large space for further speculations, similar to those concerning the golden ratio and Fibonacci numbers. Much as it looks like a topic with insanity-driven development potential, nature can hide some secrets behind those well-organised structures. This seems far from being purely coincidental and it almost for sure is caused by some kind of benefits it gives. Still there's probably more to discover and topic of fractals might not be finished yet.

(Dawid Mazur)



Sierpiński triangle

Why are animals around the world so alike? Convergent evolution



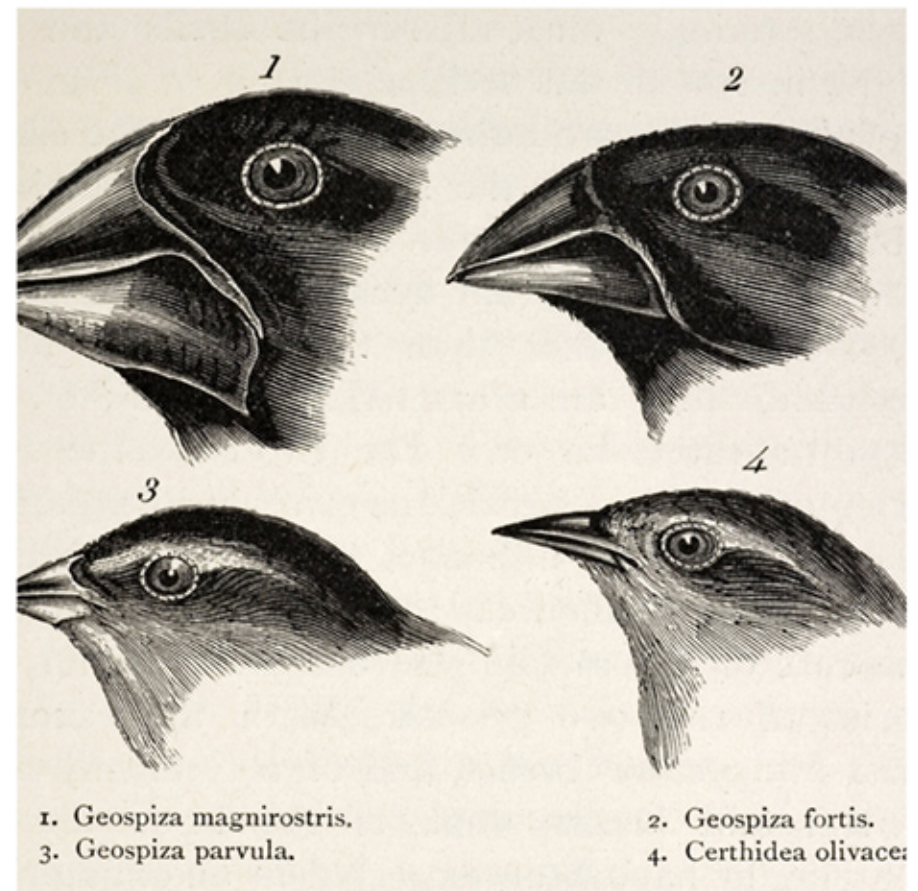
Convergent evolution is a phenomenon known in biology, when two species possess similar structures that have evolved independently (meaning that their last common ancestor lacked them). Scale of it can be different - animals can be in same family, or be in completely different taxa, being divided by millions of years of evolution, they can live at the exact time period or not - they could evolve just one feature analogically, or have whole bodies so similar, as to be almost indistinguishable by laymen.

The reason why convergent evolution happens is related to the way evolution works, through natural selection -

creatures who live in similar environment, or live in similar way, will evolve structures that help them be more successful, since those environments present analogical opportunities and threats, therefore structures evolved to cope with those threats will be similar.

There is truly a plethora of examples, one of the most well-known ones is a juxtaposition of dolphin and an ichthyosaurus - one being a kind of mammal, still living today, and other being an extinct reptile. Two animals are very similar, not only in their body plans, with thin and elongated snouts, made for catching fish and squids, hydrodynamic shape, frontal limbs turned into flippers, presence of both dorsal and tail fins, but both are viviparous (meaning they gave birth to living young). Recent discoveries suggest that both may even had similar, dark colouring, meant for camouflage in deep waters. Echolocation used by dolphins (and other toothed whales) has evolved in bats, twice, from separate, but same mutations. Active flight has evolved in birds, bats, pterosaurs and insects, each in a different way. Tree-dwelling mammals have evolved skin membranes used for gliding at least three times. Today we have flying squirrels and wrist-winged gliders (the former is rodent, the latter a marsupial), and there is *Volaticotherium*, which lived back in Jurassic period, and had similar structures.

Black-and-white colobuses have multiple-chambered stomachs like ruminants, with colobuses being monkeys, and ruminants are an order of mammals, that includes deer, cows and antelopes. Crab-like creatures have evolved so many times, that scientists have even created a term just for this type of convergent evolution- called *carcinisation*. And those are just a few examples of this fascinating phenomenon. [Mikołaj Lewczuk]



HOW TO BE A FLEXIBLE PERSON?



Flexibility in the way you think is one of the most important features you will need to be successful in today's world, because it relates to willingness to change and trying new things. Being flexible is very useful in many areas of life. The ability to adapt to the current situation at a given moment, react to it, and be in tune with the environment are just some of the very useful features.

Above all, flexibility ensures better comfort in operations and supports success. It gives more space for action and increases the possibility of achieving a certain goal. Flexibility is important when building and strengthening relationships. When you talk to another person, you usually intend to build a good relationship and gain trust. You also want the conversation to run smoothly and that each participant of conversation can benefit from it. How much easier it is to do this by being open to the other person's point of view.

Adapting to the converser, not forcing your own opinion, being ready to accept what someone has to say will bring a far better result than closing yourself to new ideas. The same is true when you become part of a team. Being flexible and fitting in there will not only benefit you, but also the group. Flexibility applies basically everywhere. Thanks to it, you can find yourself in a new environment, reality, and react to emerging situations and events. If you feel that you are similar approach into life, that's great. This means that you will find yourself everywhere without any problems, and any circumstances that arise will not be an obstacle for you, because you will be able to react appropriately and adapt, instead of panicking.

To release your full potential, first of all, you should want to get out of the prison of limited thinking. Try to be an open-minded person, not closed only to one possibility. Explore, experience, create, improvise, don't be afraid of your own imagination. Flexibility is your advantage, so be aware of that. You will see how much easier it is to achieve your goal and achieve success while being flexible.



(Ola Zakrzewska)