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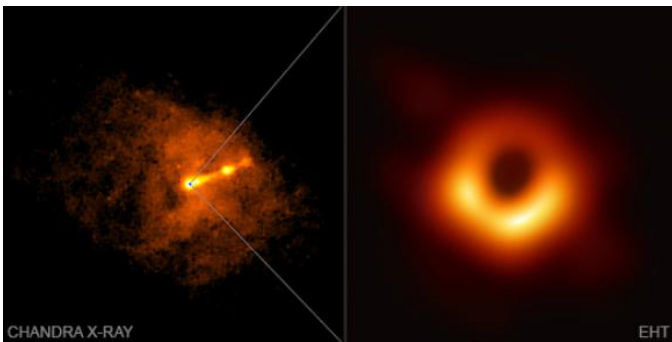
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THINGS TO SEE AND HEAR INSIDE A BLACK HOLE

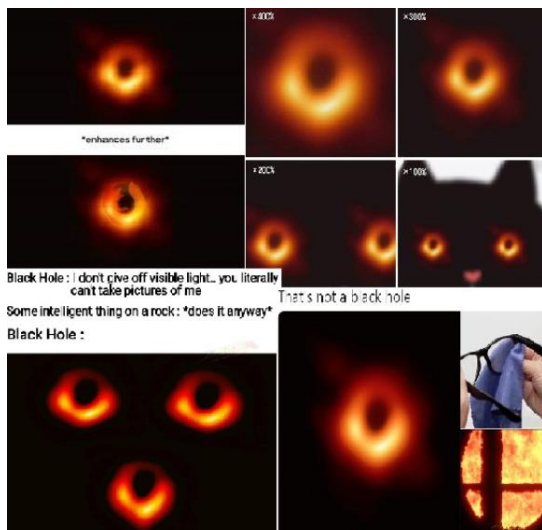
This is a bit longer of a piece than the usual you hear from me, but I think it is worth reading! Ahead of you lies an adventure deep inside the most incredible object that you have never seen and one that has puzzled scientists for decades, with no end in sight! I hope you enjoy it!

Back in April of 2019 astronomers managed to capture the first actual image of a black hole, so admittedly I am rather late to the party (and yes, every other image of a black hole you have ever seen is likely either an artist's interpretation or a composite generated by a physics engine). Here it is in all its glory:



Credit: X-ray: NASA/CXC/Villanova University/J. Neilsen; Radio: Event Horizon Telescope Collaboration

You might recall that this picture shows us the supermassive black hole at the center of Messier 87, a supergiant (hint: it's big) elliptical galaxy located about 53 million light-years away from Earth. If you ever feel compelled to and are in possession of a telescope, you can find M87 near the Virgo constellation, although you might not see too much... But if you are anything like me, you probably remember this black hole more by one of the following images:



Credit: I am sorry, but I have better things to do than credit meme pages; Everyone steals memes anyway

Before we continue, I want to give you a real appreciation of this black hole's size, however. The shadow in the middle of the EHT radio image is 38 billion km across. For reference, our sun has a diameter of 1.39 MILLION km. In other words, 27.3 thousand suns would fit in a line across the shadow.

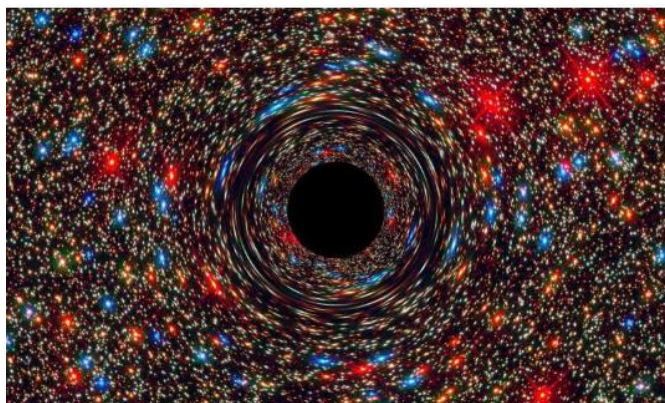
That is obviously a lot. I would expect it to be more than the entire pixel count of the EHT image (Yes, I just took a shot at a million-dollar research paper, don't @ me). However, that is not the whole story. The M87 black hole is 6.5 billion times more massive than the Sun, though that number really does not effectively convey how much matter is condensed inside of it. Considering that the black hole is actually about 3 times smaller in diameter than its shadow in the image, it has a density 300 times that of our Sun! For comparison's sake, if we took the Sun's density to be equal to that of Styrofoam, then the black hole's density would be almost exactly 7 times greater than diamond.



Now that we have hopefully learnt to appreciate the size of supermassive black holes just a bit more, I suppose we are ready to tackle the crux of the matter. Above is a still from the movie Interstellar. Did you know it was actually the first accurate physics-engine-based rendition of a black hole? Even though it was created in cooperation with scientists, the sight was so eye-opening to them, that three completely new research papers were written with the help of the CG artists who had made it. Admittedly, it and the EHT image differ greatly, but some common features can still be seen! So, what gives rise to such alien-seeming geometries? Short answer: the curvature of space-time. Brace yourselves for the longer explanation, though.

Let us begin with the big ring around the black hole, which is called an accretion disk. It is a disk of huge amounts of matter rotating very quickly around the black hole and slowly falling towards it. This is the process that actually leads to the black hole gaining most of its mass. The particles inside the disk experience constant friction against one another, which is why they shine so brightly with radiation, much like a heated bar of iron emits bright light. This disk begins around 3 Schwarzschild radii (A unit I will describe more closely shortly) from the center of a black hole. This is the Innermost Stable Circular Orbit (ISCO) for matter, or the minimum distance from the center for something to have a sustainable orbit around the black hole instead of plummeting down into it. Returning to the original X-ray image captured by Chandra, we can see a bright line, called a jet, which is shot out from the black hole at each of its coronae. There is another jet on its other side, but that one cannot be seen, as it is covered by the rest of the M87 galaxy.

Before we dive head-first into other spooky features of a black hole image, let's consider a phenomenon called gravitational lensing. Light is made up of massless photons. Although they have no mass, they do have momentum, which is why they can be interacted with by the force of gravity. If gravity is strong enough (where else would it be strong enough, if not near a black hole?) then the path of light can be shifted, effectively allowing us to see objects which are behind the actual black hole! This is just a taste of the mind-bending space-time curvatures we will be exploring in just a minute.



Credit: NASA, ESA, and D. Coe, J. Anderson, and R. van der Marel (STScI)

At the center of the black hole's shadow is its event horizon, the size of which is what defines a given black hole's Schwarzschild radius. There is not much to say about the event horizon from our current perspective. We cannot see it, because no light can escape to our eyes from beyond it. However, the shadow is larger than the event horizon, at 2.6 Schwarzschild radii! That is, again, due to the curvature of space-time and the black hole's incredible gravitational tug, as shown by the image below. The bright white circle represents the event horizon.

Only photons which are 2.6 radii away from the black hole's center can enter a temporary orbit around it, and escape it afterwards. One insane feature of the shadow arises from this graphic. Every single point on the surface of the event horizon is mapped to the shadow somewhere. That is right, you can see both its front and behind at once! Infinitely many fronts and behinds, in fact, as a photon in the shadow region might circle around the black hole arbitrarily many times before eventually crashing into the event horizon. This results in a faint white circle around the center of the black hole and just below the accretion disk, which can be seen in the screenshot from Interstellar!



Credit: Veritasium. How to Understand the Black Hole Image

But how does the biggest, most beautiful and strange feature of that image come to be? What causes that incredible double halo effect? We need to combine our newfound knowledge of the accretion disk and gravitational lensing. In the image from Interstellar, the actual accretion disk is that in front of the black hole. As you can see, with most black holes, we can see their disks at some angle towards us. In this case, the upper part of the disk is angled towards us, and the lower – away from us. By the power of gravitational lensing, the image of the backside of the accretion disk (covered by the black hole's shadow) comes up and down around it, and that is why we can see it! That halo is literally the backside of the disk. We can see virtually every point on its surface. Because of the aforementioned angle of the disk, the halo above the black hole is more prominent than that below it.

Last, but certainly not least as far as the external structure of the black hole is concerned, is a feature that was omitted by the CG artists working on Interstellar, likely for aesthetic value, but one that can still be seen on the EHT image. The accretion disk is spinning very rapidly, but one part of it spins very rapidly towards us, and the other very rapidly away from us. To any physics enthusiasts, this should be screaming: "Doppler effect!" The parts of the disk moving towards us will appear to be brighter and more blue-ish, while those moving away dimmer and redder. This is caused by the Doppler effect, or more specifically two associated phenomena: relativistic beaming and wavelength-shifting. It still is amazing, how the same phenomenon that causes fast-moving vehicles on earth to produce that nyoom sound is what causes such an intriguing sight on the cosmic scale. And that's all we see in the EHT image.



Credit: J.-P. Luminet. Image of a Spherical Black Hole with Thin Accretion Disk

Naturally, the best idea is to now get closer to the supermassive, somewhat inescapable, beautifully deadly black hole, right? I thought so, too! Imagine yourself in a spaceship on a one-man or one-woman expedition to the border of the universe – the surface of a black hole. You have a spaceship, a gravitational sensor and a rock at your disposal – those two are our guinea pig tools for later!

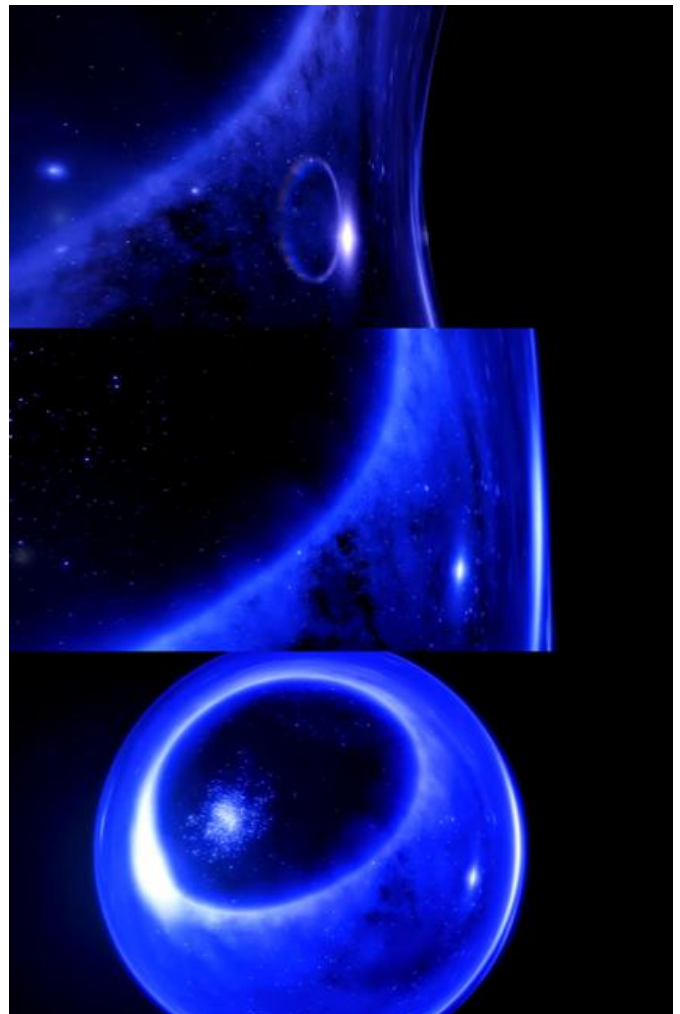
The accretion disk viewed from an extreme close-up is going to be brilliantly bright. Do not cover your eyes for too long, though! We are used to seeing things in the absolutely normal, Euclidean geometry fashion. To us, a straight line is straight. Or so we would wish. Remember gravitational lensing? As we get two times closer to the black hole, we would expect it to get two times larger in our field of vision, just like in everyday life. However, the black hole grows much more quickly in our eyes, due to the curvature of space-time, so watch where you are going!

We need to remember that nothing, not even light, can escape from beyond the event horizon, so we must be very cautious not to pass it. Now would be a good time for a break and an experiment to pass the time. Let us be reasonable here and before we get any closer let's see what happens to a rock if we throw it towards the black hole's event horizon! The following sequence of events is closely linked to Einstein's General Theory of Relativity and I am afraid you just have to take my word for what happens next. You would expect an object to accelerate as it approaches a massive body. We see that all the time. When thrown on Earth, rocks accelerate on the way down. But here, the gravitational field strength is so unusually great, that our commonsense intuition completely breaks down, like a high school student before finals.

From our perspective, time passes more and more slowly for the rock as it nears the event horizon. This causes it to seemingly approach the horizon more and more slowly. What is more, the rock becomes red, due to red-shifting. The light that bounces off it and into our eyes, which allows us to see it struggles more and more to escape from the black hole's gravitational pull the closer the rock gets to the horizon. And then, when it touches the horizon, it stops and just disappears. No one: not you, not me, will ever hear from that rock. Ever again.

So, of course, we get closer. Now, before we reach the horizon, there is one final incredible stop. At 1.5 Schwarzschild radii, we encounter the aptly named photon sphere. Previously, in the image courtesy of Veritasium there was a gray circle at this distance away from the black hole's center. Remember when we talked about the ISCO of matter in the accretion disk? Light also has an ISCO, which allows it to circle the black hole steadily at a distance of 1.5 event horizons. From the outside, this region is completely shrouded in the darkness of the shadow, so this is your first chance to see it. Photons whizz all around you in all directions. And the most mind-boggling thing? Look to the side. You can see the back of your own head. The light that bounces off of it travels all around the black hole and into your eyes, allowing you to see yourself. This is your last chance to contemplate the life choices that brought you to this point.

But we are explorers, we need to go further. Beyond the ISCO of light, there is nothing but darkness in front of you. There is nothing but darkness to your sides. The event horizon wraps around you and all is black, except for a continuously shrinking circle behind you. That is all you see of the universe. Your 360° field of vision is still there, it is just that all of it is condensed into this ever tinier hole.



Credit: Metro.co.uk

Although to an outside observer you behave much like the rock you threw earlier, in your frame of reference you are definitely accelerating, and so is all the radiation coming in behind you. All the photons that fall into the black hole with you, all of them become massively blue-shifted. That means that all you see of the world is very blue, nigh invisible, even, once it moves out of the visible spectrum and into UV light territory as the black hole's monstrous gravitational force energizes it. You move closer to the event horizon and... not just our intuition, but all the collective might of every single law and theory of physics breaks. We do not know what happens next. Our two best theories are at odds here. Let me show you why.

On the one hand, Quantum Mechanics highlights a serious paradox related to black holes and their event horizons. In our universe information is a conserved quantity. There is randomness at its smallest size scales, but information persists. Information can have many forms. For example, it can be the arrangement of particles in your body. However, if your body, like any other mass, passes through the event horizon, it only results in increasing the black hole's diameter. That is one of the very few quantities that describe black holes and one which takes much less information than to describe the arrangement of atoms inside a human being. Therefore, information is seemingly lost, which is absolutely paradoxical. But there might be a solution. Sadly, it would lead to a painful, fiery death of yours. A black hole spontaneously emits particle pairs around its event horizon, due to a process called creation. In this case, it is more specifically referred to as Hawking (rest his soul) Radiation. These particles are highly energetic, and would literally cause you and your spaceship to burn up. The emission of these particle pairs is what drives black hole evaporation. Due to this process, every black hole will eventually dry up. Small black holes that we ourselves can create on Earth only last femtoseconds because they radiate away instantly. Big ones, though, can last for billions of billions of billions of years. The fact remains: even these black hole behemoths will one day die out. They will outlast us, and every other civilization. They will outlast all stars, but eventually, they will die too.

That got grim. Back to the issue at hand. Relativity, devised by none other than Albert Einstein, would have you believe quite the opposite. It states that you should be able to pass through the event horizon. There should be nothing stopping you from doing so, if you ignore the well-documented Hawking Radiation... What it comes down to is this: you get inside the black hole. The speck of the universe behind you closes completely. You see nothing at all, because the event horizon envelopes you from every direction. Even here, a deadly threat looms.

Do not let its name fool you, although it sounds quite friendly, namely spaghettification. Once you get close to the center of the black hole, the difference between the gravity pulling at your feet (stronger) and that pulling at your head (weaker) will become greater and greater until it literally and figuratively begins to rip you apart. These are referred to as tidal forces. Honestly, the best you can hope for at this point is that your nerves break before you pass out from the pain. Your entire body will be broken down into a string of molecules, before each of these get further broken apart into subatomic particles shaped like a noodle.

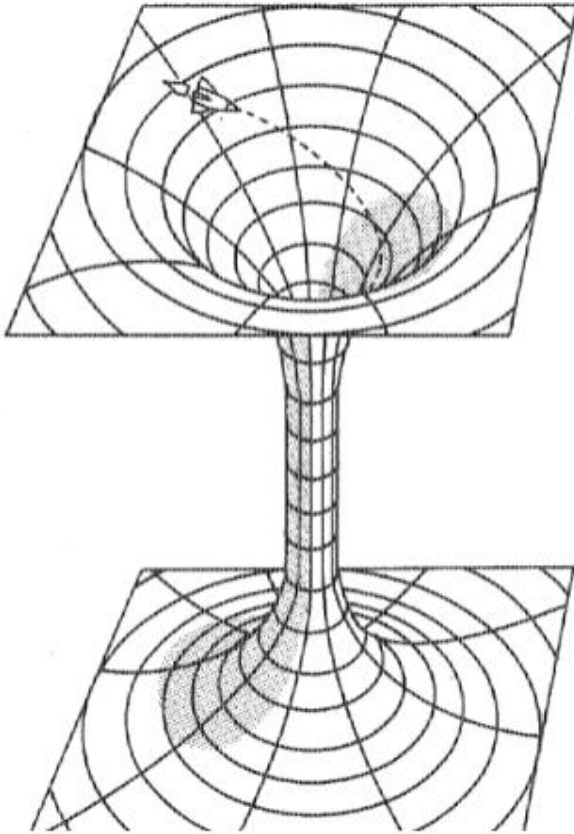
That sounds really painful and not fun, so let's ignore it. Relativity is what let us first discover and describe black holes. Quantum Mechanics is one of the most successful and well-established scientific theories ever. How can they be reconciled? Perhaps if we actually sent someone inside the event horizon, they would be able to say which was true. Problem is, they would never be able to return that information to us. The best we can do is theorize. Perhaps when you meet the event horizon, a pair of parallel universes forms? One in which you pass through unscathed and one in which you are stopped dead in your tracks by Hawking Radiation?

For now, let's just assume you made it inside the event horizon and are still alive. Fun question for you! Which way is down, specifically...? You whip out your gravitational sensor to check and sure enough, the direction you remember you have been moving in still leads to the center of the black hole, just like you expected. But what is this? Every other direction around you leads to the center, too! No matter if you go up, down, left or right, whatever these directions even really mean at this point, you will move CLOSER to the center of the black hole. It makes sense, though! No matter which way light would go, it could not escape. You are the same. No matter which way you turn, eventually you have to arrive at the center of the black hole.

It is here, that time and space merge in a sense. In everyday life, we have control over our spatial position. But we always travel forward in the temporal dimension (time) at a fixed rate. We constantly near some future. Beyond the event horizon, you lose control of your space. The best thing you can do is not move at all, and just drift towards the inevitable center – the singularity. A point in space you simply have to reach, just like we simply have to reach the future.

The singularity is a tricky beast. Physics is not mathematics and it does not find infinities easy to work with at all. A singularity is a point of infinite density and thus infinite space-time curvature. Einstein's equations make some sense out of it, but what is really there? What was really inside the singularity at the beginning of the Big Bang?

We really just do not know as of now. What we know about the singularity is that it is like the future. We do not know our future until we actually see it become the present. In much the same way, you will not know what the singularity is until the very moment you arrive at it. Only then will you know what it is.



Credit: semanticscholar.org

Physicists have been thinking about it for a long time and they have some rad ideas, though. One of them, and a rather old one at that, is the Einstein-Rosen Bridge. It is the idea that the singularity at the center of a black hole in our universe is connected to a singularity at the center of a white hole in another universe. White holes are objects that emit a lot of matter instead of sucking it in like black holes do. This kind of bridge is called a wormhole. Both wormholes and white holes are theoretically viable solutions to Einstein's equations, so we would expect to find some of them in our universe. The problem is that we have already found many black holes, but not a single white one...

As weird as this sounds, and I am very aware that it sounds very weird, white holes might only exist in universes which have a reversed arrow of time, so ones that travel from what we would call the future to the past. It is much more possible than my description would make it seem. If you wish to learn more about this crazy concept, you should read up on CPT Symmetry. Then, maybe white holes only exist in those other universes? Maybe black holes would let us teleport to these vast, new, unknown and unexplored worlds?

We do not know. But that is not the only complication connected with wormholes. In the middle, they are connected by the two singularities which are normally non-traversable because they are single points. However, with the use of exotic matter, this problem can be solved! But what is exotic matter, exactly? It is neither matter or anti-matter. It is matter that has NEGATIVE mass. It might be difficult to believe, but we are capable of creating very tiny amounts of something to that effect, although nothing on the scale required to run a wormhole.

Furthermore, wormholes take infinite time to traverse fully by definition and the hypothetical ability to travel faster the light, which they could give us, results in a multitude of time travel-related paradoxes. Generally, an idea so plagued with problems is unlikely to work.

Since the times of Einstein, many others have tried to explain what happens at the singularity. Some theories are more or less far-fetched than others. Some favor Relativity and others Quantum Mechanics. Ultimately, no one is sure. It might just take a daring expedition to the center of the scary shadow of a black hole to really find out.

~ Marcin Andraka

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FEMINISM IN THE PRESENT WORLD

The global village is something we all heard about numerous times on almost every subject we chose. This term describes the world as a place that has become 'small' due to 'easy travel, mass media and electronic communications' or in other words globalisation. The Earth became a single community, but, with the significant domination of the big economies such as the USA. Because of that poor countries get poorer and rich ones get richer. Another thing is that some cultures have already slowly started disappearing after being overtaken by the first world.

This phenomenon is however not all bad. Thanks to globalisation information travels very fast. In a matter of seconds, you can find out what is happening on the other side of our planet. And that is why feminist movements such as '#MeToo' have been able to be so successful. This movement began in 2017 with the intent to break silence on sexual assault and harassment. Through the power of media and the Internet women connected with each other, shared their story and finally felt empowered. It felt unimaginable how they created solidarity and fought for their rights together.

This affected not only women from the US or Europe but from a vast majority of countries. It all showed women from nations whose cultures oppress them that standing up for yourself is an option they can choose.

It made them believe that they can be independent and men are not superior in any way. And that not means, for instance in terms of Muslims, taking off their burkas and forgetting about their religious values, but rather slowly progressing from the men-dominated world to a balanced one where men and woman can work for the same wage and can voice their opinions if they wish to.

And that is what feminism nowadays is all about. Equality. However, not only for women but for everybody. Feminists fight discrimination against gender, race, and sexuality amongst many others, and focus on liberation and individualism. They believe that nobody should be treated with prejudice on the basis of anything.

Even though it may seem that nowadays there is no need for something like feminism because women can vote and are not forced to stay at home, it is not true. There are many areas where the man has it better. Work, for example. The pay gap is something women are seeking justice for. Men in most countries still earn more money for the same job. This clearly shows the importance of this movement in the present society.

Brigham Young once said: 'You educate a man; you educate a man. You educate a woman; you educate a generation.' Equality is closely linked to prosperity and success, therefore we should all be feminists.

HOW DOES A FILM MAKE IT TO THE DOLBY THEATRE?

The Oscar season is over, however, have you ever wondered how a film actually wins? In the 90 years of Oscar's existence, what constitutes being the best picture has changed dramatically.

In the 70s, stories of criminal and illegal activity were trendy (The Godfather) In the 80s we had over-the-top dramas set in far-off lands (The last Emperor, Out of Africa). This last decade has given birth to a new trend: enter the film festival. For the past 10 years, every film that has won Best Picture premiered at one of these world-renowned festivals. Film festivals offer a unique space, where moviegoers, film critics, Academy members and Hollywood stars all come together for a few short days to celebrate and see new films. Film festivals have become so widely popular that there's a festival for everyone (e.g. Moustache Film Festival held in Portland Maine) but of all the active film festivals (and there's a lot), we're going to focus on just 5.

First up Sundance, which takes place each January in Park City, Utah, Salt Lake City, and at the Sundance Resort, and is the largest independent film festival in the United States. It is a place where films go to find a big studio buyer. For the lucky few films that are purchased, award season consideration is guaranteed until the end of the year. Next, we have the South of France summer bash that is Cannes; dramatically chic and perhaps a little over the top, you never really know how the audience is going to respond, ranging from a chorus o

boos to overwhelming applause. Now, fast forward a few months because the end of summer brings: Venice, Telluride and the Toronto International Film Festival. If your film is serious about award season recognition, you're pulling out all the stops here. As summer comes to an end, the Venice International Film Festival kicks off, it's the world's oldest Film Festival and serves as a jumping-off point for films with a solid chance of both award and commercial success. Nestled in the mountains of Colorado is the most intimate of the bunch and in recent years the most impactful: Telluride Film Festival, where a quiet contender packs a big punch like 2018's nominees: Lady Bird, The Shape of Water and Darkest Hour. Lastly, we have Tiff. For two weeks in September, the entire industry packs its bags and heads to Canada. The beauty of the Toronto International Film Festival lies in the numbers, while Cannes is easily the most prestigious of the bunch. It's accessible to only around 30,000 film industry professionals, whereas, Toronto opens its doors to moviemakers and movie consumers. In 2016 it's estimated there were 480,000 attendees. The bigger the festival, the bigger the buzz. This is where Oscar dreams are made and that's it? Not exactly, there's a hidden path here that filmgoers and Academy members alike can't ignore: premiering well before Oscar season. These films are more than just well-made. They have a message that connects with a moment in history. Most recently a film like 'Get Out' falls into this realm, others include 'Mad Max: Fury Road' deemed by some as the feminist picture of the year (2015) and the little known winner 'Titanic' for being...Titanic.

With a new Oscar candidate premiering every week, Studios need to find ways to keep their films at the centre of the conversation. This falls to the shoulders of massive marketing campaigns in two phases; phase one: getting the nomination. Much like any campaign, there are highly crafted slogans, strategic meet-and-greets and advertisements begging Academy members for their consideration. Marketing teams can make or break the race with the right campaign strategy, as 2010's *The King's Speech* 'find your voice' tagline or by promoting Korean cinema and showing that it can be as excellent as Hollywood productions, as it was done this year with *'Parasite'*. Now the film needs to find its second act to further resonate with the cultural zeitgeist. Take the 2016 contender *'Lion'*, initially pushed as a story of a boy reconnecting with his past. Once the film lacked nominations, the Weinstein company's pivot was motivated by President Trump's immigration banner. They went with a fresh framing of immigrants' right to a new life, essentially telling Academy members a vote for *'Lion'* was a vote in support of immigrants. This politicized approach received mixed reviews from Academy but behind all these strategic moves, lies one reoccurring theme which has been mentioned several times already. This is an all exclusive Hollywood group, consisting of 8,000 members. The Academy. The Academy is split into 17 branches each with their own set of requirements for entry, for example, directors need at least 2 directing credits with one in the last decade, you get the picture. Academy members can only nominate within their field, with the exception being Best Picture, which everyone can

nominate. After all the campaigning and film festivals, what does it take to actually get nominated? There are between 5 to 10 slots for Best Picture, and to receive a nomination, a film needs at least 5% of the votes from the Academy. The Academy of Motion Picture Arts and Sciences includes more than 8,000 members, so around 400 votes will do the trick (this is assuming all 8,000 members vote).

After a film receives a highly coveted nomination for Best Picture, things get even more complicated. In order to win, like in politics, the popular vote will only get you so far. In every other category, if you get the most votes you win, but that's not the case for Best Picture. That's where something called 'preferential balloting' comes into play. If there are 10 nominees, voters rank them from 1 to 10. If no nominee gets 50% they drop the lowest ranked film and their votes are given to the second choice on their ballot and they keep ranking the nominees until one finally rises above the rest, breaking through that 50% threshold, plus one extra for good measure. When that finally happens, voila, you have your winner. After that, a slew of accountants officially tally the results and the winning cards are sent over to the presenters and, assuming it all goes well, the winner is declared. And that is how you win Best Picture.

-Małgorzata Rojs

COVID-19 PANDEMIC

There is no denying that you have heard about the coronavirus outbreak all over the world. Today's influence of mass media on people's lives is unbelievably huge and it is hard to refuse to recognize it. Media is an ever-changing field and is being criticized now more than ever by the general public. The overall impact of mass media has increased drastically over the years and will continue to do so as the media itself improves.

In case of an issue such as a disease epidemic, it is advisable to keep up to date, but not to overthink. The coronavirus outbreak poses a great example of media manipulation, where the audience is so over-provided with information that to some extent they change their lifestyles and view of the recent situation.

The proof for that phenomenon is the fact that the staple supplies such as noodles and rice have already been sold out in many supermarkets (not to even mention face masks or hand sanitizers) located in areas barely touched by the disease.

This happens due to the circumstance that people often choose media over scientists and the real data they provide.

Therefore, below there is some information that as far as I am concerned- should be noted:

-Gabriela Kruaze

Pause a minute.....

One of the worst days so far for Coronavirus was the 10th of February. On that day, 108 persons in CHINA died of Coronavirus.

BUT, on the same day

26,283 people died of Cancer

24,641 people died of Heart Disease

4,300 people died of Diabetes

and on that day, Suicide, unfortunately, took more lives than the virus did, by 28 times.

Moreover, Mosquitoes kill 2,740 people every day, HUMANS kill 1,300 fellow humans every day and Snakes kill 137 people every day.

Take a deep breath, and wash your hands.

CHINESE SYMBOLISM PART 2!

Happy New Year! I wish everybody 幸运 xìng yùn and 身体健康 shēn tǐ jiàn kāng! The first month went in the blink of an eye and we are approaching the second one. To start our year with happiness I have two gifts for you. The first one, of course, is finding a translation of my wishes. Don't you think that it is happiness? No? So my next gift is this lovely article about two new symbols. Are you ready to absorb more happiness? 我们走吧! Wǒmen zǒu bā! Let's go!

Rat 鼠 shǔ As China will celebrate this year with its lovely rodent, I feel obliged to introduce it to you. Rat is the first of the twelve Chinese zodiacal animals. It is also written as 大鼠 dà shǔ (big rat) to distinguish it from a mouse - 小鼠 xiǎo shǔ (small rat) and a squirrel - 松鼠 sōng shǔ (pine tree rat). In the rat's character you can see its head, whiskers and tail.

It is said that the rat is the first animal in the zodiac due to its intelligence. In the story it was smart enough to jump onto ox's back to be the first in the queue when animals were being named. Rats are mostly associated with money because they are also associated with misers. Now I will present you with some legends. These little animals are believed to have brought rice for people, introducing it as a nutritious food. Unfortunately, they are also believed to turn into demons and (fortunately) in another legend, into quails at springtime. Rats are often shown with trailing plants, symbolising a wish for long life for all generations of children. The last belief is that if a rat comes to your house it will be abandoned soon.

Peach 桃 táol chose peach as the second symbol because... P and R are next to each other in the alphabet and... peach was (and still is) a popular fruit on the Internet. Honestly, I was surprised that peach was an important Chinese symbol.

You may notice peaches on many art pieces because they are a common art motif. According to a legend, peaches grow in the gardens of the Queen Mother of the West (Xiwangmu) and they bear fruit every 3 thousand years. Chinese god of longevity is often shown emerging from a peach. That is why this fruit is associated with immortality. Another meaning is linked to... marriage! This comes from girl's complexion, as she blushes in peachy colours and the fact that spring is a favourite time to get married. Nowadays, peach trees grow all over China and are often used in traditional medicine. Its timber is used to keep away demons and its branches are placed at the entrance of the houses, during Spring Festival. This use may come from the homophone of 淘 táo, meaning - to eliminate.

I hope you liked this new form of the article to learn about Chinese symbols. From now on there will be fewer symbols, which (I hope) will help you to remember them better. Did I bring happiness with these two new words (and wishes at the beginning)? Yes? 很好! If you are interested in Chinese culture, not just symbolism but culture, read my previous article about Chinese New Year. 拜拜! bàibài!

Urszula Chocian II H

MAYBE WE DO MATTER

ostatnio dużo myślę o naszym znikaniu,
o tym, gdzie pójdę w przyszłości, niekoniecznie tej dalekiej.
wczoraj patrzyłam, jak szkarłatna krew
wschodzącego słońca rozlewa się na chmury,
a niebo staje się paletą pełną różnych odcieni złota.
czułam, jak całe to miasto budzi się z wilgotnej ciemności nocy.
pamiętam, że chciałam (i wciąż chcę)
zostawić to wszystko i wyjechać gdzieś bardzo daleko.
bo przecież w pociągu zawsze jest jakiś aromatyczny kubek herbaty,
przy którym mogę w spokoju czytać stare kryminały i rozmyślać nad tym,
jak mali jesteśmy w porównaniu do reszty tego świata.
galaktyka i droga mleczna przykrywają piaskiem wszystko, co pozostaje
niezbadane,
ale to właśnie nasz ślad, który zostawiamy po sobie na tym świecie;
dotyka nocnego nieba jak okruchy gwiazd,
rozlewając się w konstelacje,
wyprowadzając kolejnego wędrowca z ciemności.
i chociaż możemy skończyć jak cassini,
bo też przecież nieustannie przecieramy orbitę przez pokolenia i pokolenia,
to dalej jesteśmy przyszłością.
to dla ciebie,
dla mnie,
dla nas- cassini,
które bezlitośnie płyną po lepsze jutro.

ZORZA NAD RZEKĄ

ROZDZIAŁ 1.

Na ulicy panował mrok. Jedyne nieliczne okna rzucały podłużne światła na wiekową kamienną kostkę, która widziała już niejednego rozlew krwi, a głębokie bruzdy, jak zmarszczki, znaczyły zimny kamień. Wysoko na widnokręgu księżyc niestrudzenie sprawował swoją wartę, obserwując miasto pogrążone w cichym, niewinnym śnie, nieświadome wydarzeń rozgrywających się tej nocy.

Ciemność przeciął dylizans wiozący młodą parę bogaczy prosto do ich domu, zakłócając nocną ciszę. Wzbił w niebo tumany kurzu i piachu, które zanieczyściły i tak gęste od brudu powietrze.

Zakapturzona postać, ukrywająca się w cieniu budynku, naciągnęła kaptur jeszcze głębiej na oczy. Chłopak zmarszczył się z niesmakiem, wdychając mieszankę kurzu, brudu i smrodu z rynsztoka. Poruszył nieznacznie łopatkami, pobudzając mięśnie do ruchu po długotrwałym staniu. Zmusił się do głębokiego aczkolwiek nieprzyjemnego wdechu.

Jak to miał w zwyczaju, obserwował uważnie otoczenie. Nic nie umykało jego bystremu wzrokowi. Z niezwykłym zaciekawieniem oglądał świat dookoła oraz zachowania ludzi. O ile naturę dobrze znał, o tyle mieszkańcy często go zadziwiali.

Obok niego przeszły, zanosząc się głośnym chichotem, dwie skąpo odziane kobiety. Chłopak rzucił im lekceważące spojrzenie, nie wychodząc z cienia i dziękując w duchu, że go nie zauważyły.

Czekanie zaczynało go nudzić. Nauczył się stać w bezruchu przez wiele godzin, jednak atmosfera tej uliczki męczyła go potwornie. Stanie w brudzie i smrodzie to nie to samo, co stanie na łonie natury i wdychanie czystego powietrza.

Pozwolił sobie na znużone ziewnięcie. Jego rozwichrzone brązowe włosy wysunęły się spod kaptura i zasłoniły mu oczy gęsta kurtyną. Dmuchnął w górę, odgarniając je z twarzy i rozglądając się czujnie.

W czarnym dymie na końcu uliczki dojrzał kontury ogromnej postaci, wręcz wielkoluda. Jego łysa czaszka była osadzona na grubej, muskularnej szyi. Rozbudowane mięśnie rąk i nóg potęgowały nieprzyjazny, nawet wrogi wygląd. Kiedy osiłek wkroczył w smugę światła rzucaną przez jedyne okno, chłopak dostrzegł wojenne tatuaże zdobiące jego nagi tors.

Dreszcz przeszedł Barta. Ta łysa głowa ze spiczastym nosem i głęboko osadzonymi oczami wcale nie należała do jego przyjaciela.

Zmrużył swoje intensywnie niebieskie oczy, zapisując w pamięci widok długiej, bogato zdobionej szabli u pasa wielkoluda.

- Cha, cha, cha! Bart! Co tak na mnie patrzysz, jakbym ci coś ukradł?- prawie wykrzyczał na powitanie. Jego głęboki bas zaatakował uszy chłopaka, wwiercając się w mózg.

- Bo tak właściwie to mi coś ukradłeś. Skąd ta radość na mój widok?- burknął nieprzyjaźnie chłopak zwany Bartem.

- Jedyne, co ci mogłem ukraść, Bart, to twoją dumę, nic więcej - powiedział niewinnym tonem, wbijając wzrok w jarzące się pod kapturem tęczę chłopaka.

- Mniejsza z tym. Mam to, o co prosisz - wymruczał swoim melodyjnym głosem.
- No, mam nadzieję. Po to przyszedłem - powiedział przybysz, zacierając grube łapska.

- A jednak ci się nie spieszyło – rzucił, nadal stojąc bez ruchu pod ścianą.

- Bart, nie pogrywaj ze mną. Nadal jestem twoim szefem - odburknął.

Sam jestem swoim szefem, pomyślał Bart, jednak wsunął dłoń za płaszcz i wyciągnął mokrą sakiewkę. Rzucił ją niedbale na bruk przed łysym osiłkiem, nie martwiąc się o maniery. Z sakwy sączyła się posoka, wsiąkając w ziemię między kostkami i formując krwawe rzeczki.

- Cóż to?- spytał lekko zaniepokojony „obdarowany”.

- To, o co prosisz - powiedział bez wyrazu Bart. Doskonale wiedział, co jest w torbie i ani trochę nie był z tego dumny. Jednakże tłumaczył sobie, że to już ostatnie zlecenie i więcej nie popełni tego samego błędu.

Obrzucił sakwę pogardliwym spojrzeniem.

Wielkolud schylił się po zawiniątko. Krzywiąc się, podniósł ociekającą przesyłkę.

- Gdybyś przyszedł wcześniej, byłaby jeszcze ciepła - wytknął Bart. Szef spiorunował go zimnym wzrokiem i wyjął zawartość z worka.

W rękę trzymał odcięta ludzką dłoń ociekającą krwią.

Podniósł wzrok na Barta.

- Zmyślne. Muszę przyznać. Zmyślne - mruknął, zdejmując z serdecznego palca nie swojej ręki złoty, wysadzany klejnotami pierścień. - Przyniosłeś całą dłoń, żeby udowodnić, że prawdziwy - uniósł w górę sygnet, oglądając go dokładnie i gryząc delikatnie.

- Równie dobrze mogłem przynieść ci dłoń kogoś innego - zauważył chłopak.

- Wtedy zauważyłbym, że nasz delikwent ma dwie dłonie - odparł, głaszcząc kończynę. Oderwał oczy od przesyłki i spojrzał na Barta. - Nie żyje?

- Tak - odpowiedział niechętnie chłopak. Byłem zmuszony, nie miałem innego wyjścia, powtarzał w myślach.

- Noooo, za tak dobrą robotę dostaniesz dwa razy więcej. Chyba, że mnie okłamujesz, wtedy inaczej pogadamy.

Jego głos z wesołego stał się nagle niski i groźny. Na karku młodzieńca stanęły włoski.

- Już niedługo będzie głośno o śmierci sir Mac Flowe, ale bez obaw, żadnych śladów. Mózg Barta walczył sam ze sobą. Z jednej strony był dumny z tak dyskretnego włamania i morderstwa, z drugiej był wściekły na siebie za zabójstwo wysoko postawionego urzędnika.

- No, ja myślę. Łap! - rzucił mu dwie sakiewki ze złotem. - Dobra robota! Tak pomyślałem...- zaczął, schowawszy uprzednio przesyłkę w głębokiej kieszeni. Skoro teraz tak dobrze ci poszło, to może "wykradłbyś" mi coś jeszcze?

Chłopakiem wstrząsnęła fala. Fala szoku. Fala ekscytacji. Fala zgorzenia. Wiedział, że szef chce, żeby zabił kolejną osobę. O pierwsze zabójstwo go nie prosił, pewnie myślał, że nie sprosta. Teraz sytuacja się odmiała i to on był temu winien.

- Rox, nie chcę już zabijać niewinnych ludzi - bąknął lekko łamiącym się głosem.

- Ja tu jestem szefem i będziesz tańczyć, tak jak JA chcę. Miły i pogodny RoxWarder zniknął na dobre. Teraz przed Bartem stał bezwzględny, niebezpieczny siłacz.

Mięśnie chłopaka naprężyły się, prostując go jak strunę. Bart czuł ciężar złota w kieszeni, choć kolejna godziwa zapłata wydawała się kusząca. Jego nerwy i honor były już jednak zszargane. W myślach dokonał szybkiego rachunku.

15 winnych zabitych

7 śmierci żałowanych

1 niewinny zabity

Już dość zabijania, powtarzał w myślach jak mantrę.

- Rox, w takim razie wychodzę z tego interesu. Już dość ludzi zabiłem, nawet wtedy, gdy o to nie prosiłeś. Dość domów obrabowałem. Niektórym już do końca życia nie spojrzę w oczy - wyrzucił ze skrucą w głosie.

- To słodkie. Złodziej się nawrócił - wycedził Rox. - Dołączyłeś do nas dla pieniędzy, zdaję sobie z tego sprawę, ale ty powinieneś wiedzieć, że tak łatwo z tego nie wyjdiesz. Jesteś naznaczony. Tak jak każdy z nas. Ponadto łączy nas tajemnica zawodowa. Jak myślisz, co się stanie, jeśli hrabia RoxWarder doniesie księciu na łowczego? Stryczek.

Bart z wysiłkiem przełknął ślinę. Stryczek. Powtarzało się echem w jego głowie. W jednej chwili zalała go gorycz. Jak mogłem się w to wpakować, krzychał na siebie, gdzie ja miałem głowę?

Chłopak opanował emocje i przybrał obojętny wyraz twarzy. Obmyślał i kalkulował. Jego mózg pracował na najwyższych obrotach. Jedynym, co zdołał wymyślić była natychmiastowa ucieczka z kraju. Słona zapłata za uwolnienie się od Roxa.

Z gardła Barta wydobył się warkot.

- Rox, nie możemy rozwiązać tego jak ludzie? Bądź człowiekiem. Nie chcę już zabijać. Nie chcę rabować. Nie chcę być złodziejem. - Chyba, że będę zmuszony, dodał w myślach.

- Chcesz, żebym puścił cię wolno- skonstatował Rox. - Skąd mam mieć pewność, że nie doniesiesz na mnie? Skąd ty będziesz miał pewność, że ja nie doniosę na ciebie?

- Możemy zawrzeć umowę - Bart zazgrzytał zębami.

- Ciekawe. Zwykle takich ludzi się zabija, a ty chcesz zawrzeć umowę. No dobrze, słucham, ale nie obiecuję, że ta historia będzie miała szczęśliwe zakończenie.

- Przyniosę ci coś, czego naprawdę pragniesz, a w zamian puścisz mnie i zapomnisz o moim "zatrudnieniu"- wyrzucił Bart. Jego dłonie zaczynały się pocić, ale zachowywał zimną krew. Wiedział, co może oznaczać ostatnie zlecenie, ale pragnął żyć bez pęt łączących go z Roxem.

- Hm, czego pragnę, powiadasz- mruknął w zamyśleniu.

- Przyniosę ci plany - wyszeptał chłopak z ciężkim sercem.

Oczy Roxa zapłonęły żądzą. Wbił spojrzenie w twarz ukrytą pod kapturem. Cenił młodziaka i to bardzo. Był zwinny, szybki i pomysłowy, czego brakowało jego pachołkom. Szkoda go, pomyślał, przydałby się nam jeszcze.

- A zatem umowa stoi. Masz czas do jutra. Spotkamy się w tym miejscu o tej samej porze - powiedział chłodno, obracając się na pięcie, żeby odejść. Jednak w ostatniej chwili odwrócił się i dwoma długimi susami dopadł do Barta. Chwycił go łapą za koszulę i uniósł pół metra nad ziemię.

- Jeżeli spróbujesz mnie oszukać, to zapomnij o wolności. Zapomnij o świetle dnia. Znajdę cię i własnoręcznie wykończę - wycedził i puścił chłopaka na ziemię.

Bart gruchnął o bruk. Nie zdążył przygotować się na upadek i uderzył piszczelami o kamienie. Z trudem łapał oddech. Chwycił kurczowo za bolące gardło, w które wrzynała się koszula.

- Aha, nawet nie próbuj donosić. Nikt ci nie uwierzy, a wieść i tak do mnie dotrze - rzucił przez ramię, odchodząc.

Bart rozmasowywał sobie przez chwilę mięśnie, po czym wstał, otrzepując się z piachu. Okrył się szczelnie płaszczem i zniknął w czarnym dymie ulicy.

Aurelia Adamczak