How to communicate (health)science?

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TAI

Today I will speak about

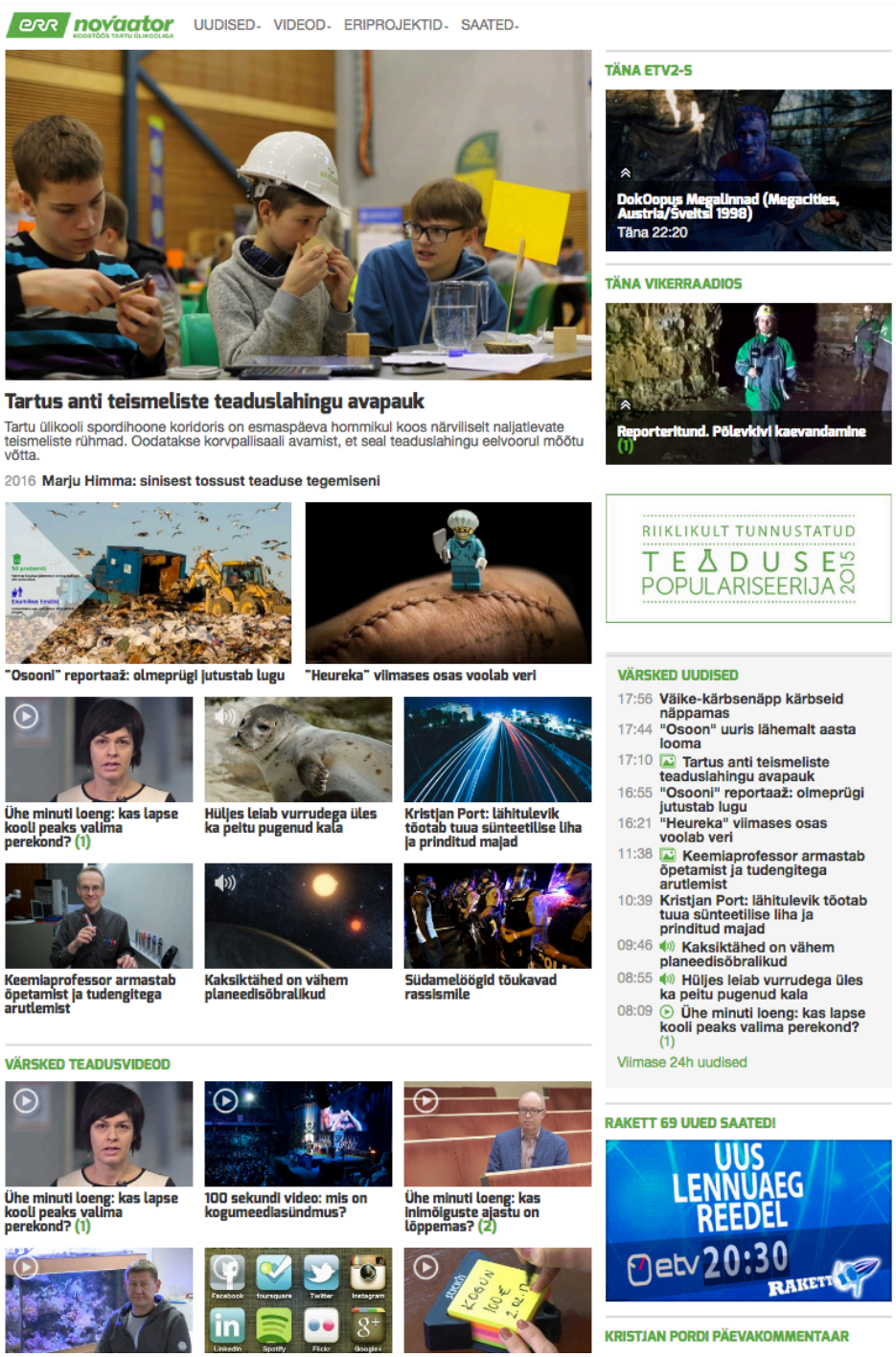
- Who am I?
- What is ERR Novaator?
- How is umbrella linked to science communication?
- How to make scientists speak like humans?
- Everyone likes good stories – how to tell them?

Who am I?

- Worked a year as a science reporter in regional newspaper Tartu Postimees
- Wrote Master's thesis about Estonian and English Science Articles Best Practices
- Got journalism degree from University of Tartu in 2014
- Currently working Uni Tartu communication office that co-works with science news portal ERR Novaator

What is ERR Novaator?

- Biggest Estonian science news portal
- **Nominated** as nationally acclaimed science popularizer



ERR novaator
UNIVERSITY OF TARTU

Umbrella and science communication

- **Science communication**

↔ scientist to scientist

↓ science to society

↓ science to press/media

- **Science journalism**

↑ journalist from scientist

↑ society from science

- **Trends?**

Before we start communicating

- Who are we writing for?
- How our writings are going to be used?
- How should we write to send your message across?

Why do we read news?

- **It's interesting** – we are curious
- **It's entertaining** – we like to me entertained
- **It's useful** – we may find some practical tips
- **We read just in case** – to have topic to discuss with friends in the pub

Guidelines for reporting science & health stories

- **State the source of the story** – e.g. interview, conference, journal article, a survey from a charity or trade body, etc. – ideally with enough information for readers to look it up or a web link.

- **Specify the size and nature of the study** – e.g. who/what were the subjects, how long did it last, what was tested or was it an observation? If space, mention the major limitations.

- When reporting a link between two things**, indicate whether or not there is evidence that one causes the other**.

- **Give a sense of the stage of the research** – e.g. cells in a laboratory or trials in humans – and a realistic time-frame for any new treatment or technology.

- **On health risks, include the absolute risk** whenever it is available in the press release or the research paper – i.e. if 'cupcakes double cancer risk' state the outright risk of that cancer, with and without cupcakes.

By Science Media Center

Guidelines for reporting science & health stories

- Especially on a story with public health implications**, try to frame a new finding in the context of other evidence** – e.g. does it reinforce or conflict with previous studies? If it attracts serious scientific concerns, they should not be ignored.

- If space, **quote both the researchers themselves and external sources with appropriate expertise**. Be wary of scientists and press releases over-claiming for studies.

- **Distinguish between findings and interpretation** or extrapolation; don't suggest health advice if none has been offered.

- **Remember patients: don't call something a 'cure' that is not a cure.**

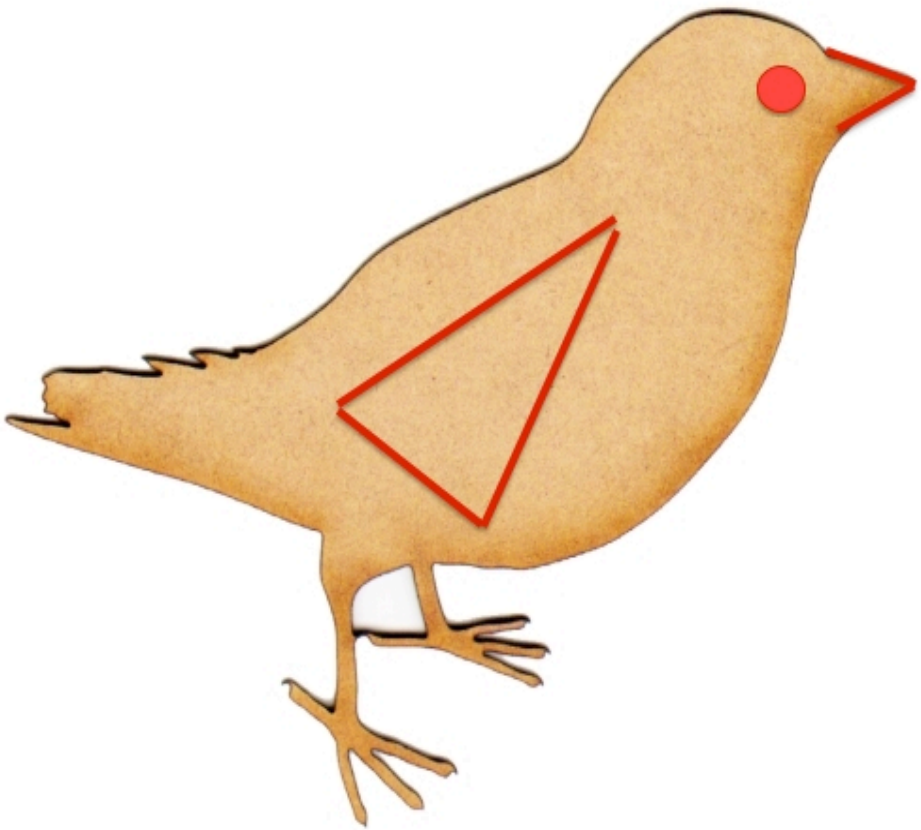
- **Headlines should not mislead the reader** about a story's contents and quotation marks should not be used to dress up overstatement.

By Science Media Center

“Big picture” and good stories

- **“Big picture” and good stories** help to keep them reading, watching and listening to you.
- **Why is your story important?**
- **Why should it matter to your audience?**
- Media is a endless fight for people time
- **There in nothing easier in our lives then to close the newspaper**, online tab or change the TV channel.
- **So, why and how to tell good stories?**

Good science story and sparrow



- Wings = Background and **context**

(that help “the story to fly”)

- Beak = **Sharpness**

(that helps to keep the readers interest)

- Eye = **New knowledge**

(without it we live in darkness)

News or feature?

- Regular **news articles and press releases** are often **short**, **formal** and covers **only the main facts**.
- They are quick and (often) soon forgotten.
- **Features or longreads** includes **emotions**, **tells stories**, **shows** what and why is actually important.
- Good longreads are **joy to read** and we remember them longer.

Science features

- Longer **magazine type** article about scientist or his/her discovery
- Focuses on **people** and what happens with them
- **Story** is built on strong facts
- All the facts are presented through **gripping** story line
- The story line is supposed to be so good, that you cant stop reading before it ends
  (*Yeah, easy to tell, hard to do - I know* ☺)
- It **stays relevant longer** then news – can be read even months or years later
- Beside informing it is also supposed to **entertain**

How to write a good longread?

- Be a good reporter
- Go out of office, meet the doctors or scientist
- Observe what they do, ask questions

- Be creative with your writing – tell the story that you would like to hear again and again
- Edit, edit, edit

How to make scientists speak like humans?

- Ask questions until you get a good answer
- Don't be afraid to ask stupid questions
- Simplify, bot don't over simplify. How to find the balance?
- It's ok to use easy language and short sentences
- But what if I sound stupid? No you don't!

What questions to ask to hear good stories?

- **Describe** me please, how you first became interested in that?
- **Why did you decided** to do exactly this kind of experiment, research?
- In short, **what it is all about** (experiment, scientific paper, new method) ?
- **What did you know about it before** you started your research?
- **What did you hope to learn** from it?
- **How would you explain your results** to your family member or prime minister to get funding for your next step?
- **How did you find the way** to this understanding?

What questions to ask to hear good stories?

- **What was the most interesting thing** for you while doing this research?
- **Was it surprising?**
- **How did it feel like/ look like?**
- *(... or just* ***be enthusiastic listener*** *by saying: I could have been terrified/overjoyed/…)*
- **Does it fit in our general understanding** about X and Y?
- **What would you like to do next?**
- **Is there something more** you would like to comment or add?

Questions for portrait-story

- What you worry about the most?
- What matters most to you?
- What makes you most afraid?
- What kind of day was it?
- What was the first thing you did when you discovered that/ woke up in that morning?

Genetic Mutation Influences Mental Disorders and Alcohol Addiction (1)

Why is it that a warm hug from a friend makes some of us really happy, while for others it registers as nothing? Why some of us are unable to find any enjoyment from their surroundings?

The latter case quite likely indicates a depressive mindset or depression.

Genetic Mutation Influences Mental Disorders and Alcohol Addiction (2)

There may be a breakthrough in curing this, as well as many other psychic disorders, after the **potential discovery** of drugs that would impact a certain transport protein in the brain – the one that a group of scientists from the University of Tartu have, figuratively speaking, **put their finger on**.

"Putting their finger on it" means that Marillis Vaht, a junior researcher of neuropsychopharmacology, lately **demonstrated something important about a gene** that encodes the activity of the molecule moving around brain chemicals related to feeling well and alert.

Genetic Mutation Influences Mental Disorders and Alcohol Addiction (3)

It turns out that the gene influences impulsivity, anxiety, depressiveness, neuroticism, as well as addiction to and abuse of alcohol.

The existence of the aforementioned molecule was discovered just at the turn of the century. **In the 1990s, scientists still believed that the VMAT1** transport protein was present in the human gastrointestinal tract and the blood vessels, but not in the brain.

VMAT1 performs the task of organizing the communication between nerve cells. It might seem simple: /…/

In addition to other benefits, **knowing this helps to explain why a warm hug from a friend produces a pleasant feeling in some people and nothing in others**.

Use metaphors

UT researchers surprised by the extent of restructuring in the genome of human placenta

An immense number of changes occur in the genome of placenta during pregnancy and, to the surprise of researchers, these changes are similar to those caused in the genetic material by cancer.

Genetic material could be compared to a deck of cards, which is constantly shuffled by the genome. This kind of restructuring is called copy-number variation: /.../

Smaller instances of restructuring are apparent in all of our genomes. This a vital prerequisite for evolution and adaption, without which we would all be exactly the same.

However, if for some reason, the genome mixes genetic material up to the point of no return, then more extensive restructuring (such as loss or addition of entire genes) can cause various diseases.

Use dialog

Report from the lab: Scientists at the UT have created Zika vaccine candidates.

“Let me show you what virology laboratories look like,” says Merits as he guides me to a door with yellow warning signs plastered on it.

“There is no danger of contracting any viruses here, is there?”

“Sure, there is,” Merits replies stoically once I’ve had a chance to peak into the lab, “which is why I recommend that you be very-very careful! After all, this is a lab for dangerous viruses.”

“It feels a bit scary.”

“There is no Zika here. We have Chikungunya, which is several degrees worse. It won’t kill you, but...,” the tension-filled silence is filled only by the muffled sounds of lab machines.

“And? What would happen to me if I were to contract it?”

Use dialog

To make bigger chunks of meat, Post will need to make synthetic fat ("actually quite easy") and grow the fillets on some sort of biodegradable scaffold, "fed" with nutrients pumped through artificial polysaccharide "veins". Otherwise the centre of the fillet will become gangrenous and die. The technique is viable for any species.

"Could you make fake panda?"

"Sure."

"What about human?"

"Don't go there.“

(Hanlon, „Fake Meat...“)

Describe the characters

Professor Patrick Brown could easily be taken for a deranged visionary.

He is intense, driven and unfazed by critics and rivals.

This **57-year old ultra lean, sandal wearing, marathon running vegan** wants **to stop the world eating meat**.

Not through persuasion or coercion, but by offering us carnivores something better for the same price or less.

The fake meat business has been around for decades, of course, but it has never really taken off.

(Hanlon, „Fake meat...“)

Be personal and emotional

Neurologist Janika Kõrv: If I had a stroke...

I hope that will never happen. However, there is always a risk, as the illness is very common.

According to Janika Kõrv, Associate Professor at the Tartu University Neurology Clinic, **over 200 people have an initial stroke in Tartu every year.**

I am not very old yet, so the risk is not that high; however, even children and young people can have a stroke.

Data from population-based studies conducted in Tartu show the incidence of stroke in Estonia is comparable to other European countries, but the **occurrence of stroke among young adults is higher here than it is in other countries**.

A Ph.D. dissertation adds to our knowledge of how alcohol impacts children's health

"They are often dirty from lying on the ground, have vomit in their hair and on their clothes, some have pissed themselves,"

Mailis Tõnisson describes underage drinkers who have wound up at a hospital.

Tõnisson, as a forensic toxicology expert, was prompted to study the health indicators of these kids.

/.../

"We are under **the impression that we already know** everything there is to know about ethanol.

However**, we actually have very little information of its influence on children's health**."

/.../

The results of these studies conducted in the University of Tartu have motivated both the Children's Clinic of Tartu and the Tallinn Children's Hospital to routinely determine not only the concentration of ethanol in the blood of underage drinker, but also their potassium and glucose levels. **This practice did not exist previously**.

How does one evaluate the impact of alcohol advertisements? Ask the child what they drank.

- Postimees: Impact of alcohol advertising: children are very aware of the brands of drinks they have had

- Delfi: Together with TV commercial also blackout Aramis-drunk kids disappeared

- Õhtuleht: Aramis commercials had a direct impact on youngsters' alcohol consumption

How does one evaluate the impact of alcohol advertisements? Ask the child what they had to drink.

Children covered in vomit and piss. Drunk. Or extremely drunk.

In the span of three years (2005–2008), approximately 250 children in this state ended up at the Children's Clinic in Tartu or the Children's Hospital in Tallinn.

Most of them were brought to the hospital in the evening or at night, from 17:00 to 2:30. About half of these kids where younger than 14 years old, the youngest was an 8-year-old. The other half were older, up to 18 years old.

When doctors asked about what the kids had been drinking, the most common answers included vodka, whiskey, brandy and other hard liquors.

However, there were periods, specifically two waves, during which doctors frequently got the same exact answer – "I drank Aramis".

The specific nature of this attracted attention. Why would otherwise anonymous alcohol get a specific name now and then?

"These groups became apparent when Aramis commercials were shown on television. The commercial showed one of the four musketeers putting a bottle of Aramis on the table and saying "Here, I got it!".

This was a red flag for teenagers who really did go and get that bottle," explained Tõnisson.

"Once the commercial disappeared, so did children who drank Aramis. And when the commercial started airing again, it did not take long for Aramis drinkers to return."

Step by step towards the main point

An extensive diabetes study: the onset of diabetes in children could be delayed

There are about 600 children in Estonia, who get injections or inject themselves with insulin three to four times a day. Their pancreas is not able to produce insulin on its own.

600 kids, that is about 25 classrooms of students.
But a lot of them don't even go to school yet.

"When **previously** the onset of type 1 diabetes occurred in 10–14-year-olds, then **in the recent year**, the onset of the disease has been observed most frequently among 5–9-year-olds," said Professor Vallo Tillmann, Head of the Children's Clinic of Tartu University Hospital.

Addressing the reader

The Reason For Strokes in Children Is Still Unknown; Rehabilitation Is Getting Better

Strokes – surely those are an illness affecting the elderly, aren't they? OK, they affect middle-aged, overworked men too. But did you know that in Estonia, three to four newborns leave the hospital with a diagnosis of stroke each year?

Later on, perinatal stroke is diagnosed in another six to seven small children. Perinatal means that the stroke happened during pregnancy, at the time of birth, or right after birth.

Taking into account that nearly 14 000 children are born in Estonia every year, perinatal stroke can be considered to be relatively rare.

Rael Laugesaar, Junior Research Fellow at the Department of Pediatrics, says that both perinatal stroke and stroke in small children are more frequent than people think. **"Unfortunately, neither the doctors nor people in general have sufficient awareness of strokes in children"**.

What makes a good story?

- It has a good beginning and even better end
- Beginning and end could be connected (frame-ending)
- It's written from person to person
- It's engaging
- Readers read it only when it is interesting
- Good story/article don't tell things, it shows them
- Makes readers smile ☺

Story elements and how to start the story?

- Incident
- Addressing the reader
- Description of atmosphere, situation
- A good quote(s)
- Conflict (conflict of ideas, theories etc)
- Personification (to give human qualities to an object)
- Comparison, metafors, surprises, perspective
- Emotions
- …

What to avoid?

- **Too long sentences** – long sentences puzzle readers. Break long sentences into shorter ones.

- **Passive voice** – passive hides true meaning. Make the actor the sentence's subject.

- **Bureaucratic and scientific jargon**. You think jargon sounds sophisticated, it's not. Jargon makes readers feel stupid. No one likes to feel stupid, so **replace jargon with clarity**.

- **Becoming a teacher** – we like to be educated and entertained, but we don't like to read textbooks.

“Science is not finished until it’s communicated”

@ UK chief scientist Sir Mark Walport

“If you can't explain it to a six year old, you don't understand it yourself.”

@ Albert Einstein

Thank you!