



FAKULTA MATEMATIKY,
FYZIKY A INFORMATIKY
Univerzita Komenského
v Bratislave

Connection unexpected – a case study in science outreach

Juraj Tekel

Department of theoretical physics, Comenius University, Bratislava

27.5.2024, II. Annual Meeting : CaLISTA'24, Sofia





Funded by
the European Union





Why to talk about science?

- Science is a lot of fun!
- Deepens our understanding (and appreciation) of nature.



Why to talk about science?

- Science is a lot of fun!
- Deepens our understanding (and appreciation) of nature.
- Required by grant agencies.
- Brings young people to STEM fields.
- We owe it to taxpayers.



- Talking about science to general audience is a lot of fun.
- Many different ways how to do it.



Connection unexpected





Home



Shorts



Subscriptions

You >



Your channel



History



Playlists



Your videos



Watch later



Liked videos



Nečakané súvislosti

FMFI UK

28 videos 6,237 views Last updated on Aug 6, 2022



▶ Play all

↻ Shuffle

Subscriptions



Tom Nicholas



Wendover Producti...



Half as Interesting •



Tom Grossi •

1



Loď a pitie slamkou | Nečakané súvislosti

FMFI UK • 1.5K views • 1 year ago

2



Atóm a slnečná sústava | Nečakané súvislosti

FMFI UK • 5.3K views • 2 years ago

3



Nepodarené zábery 2017 – 2020 | Nečakané súvislosti

FMFI UK • 533 views • 3 years ago

4



Rádioaktivita, Pluto a mikrovlnka | Nečakané súvislosti

FMFI UK • 847 views • 3 years ago

5



Šach a fyzika plynov | Nečakané súvislosti

FMFI UK • 1.5K views • 3 years ago

6

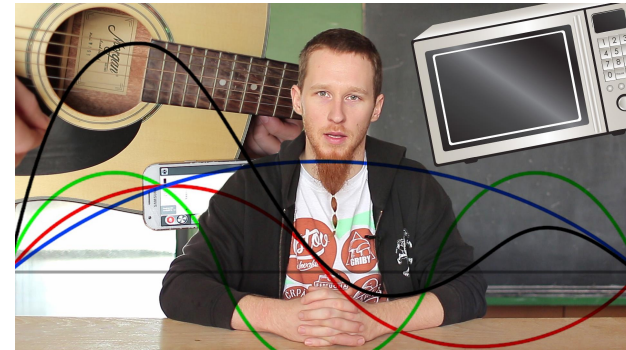


Ako lietajú lietadlá | Čajník a krídlo lietadla | Nečakané súvislosti

FMFI UK • 2.9K views • 3 years ago

Connection unexpected

- Short videos at faculty YouTube channel.
- Physical effects or phenomena, that seem not to share anything in, but are connected by a common principle.
- One more person helps with production.
- Examples:
 - whip cracking and planes,
 - guitar and microwave,
 - bicycle and knee caps.





Medium specifics



Medium specifics – advantages



- Videos are very accessible for general public. They stay there forever.
- You can be seen, but do not need to be.
- You can show much more by an animation than by a picture. And picture with commentary is better than picture with description.
- The material can be prepared very carefully and deliberately.
- A lot can be said by non-verbal means:
 - cuts, zooms, music, change of pace, ...



Medium specifics – disadvantages



- Videos are rather short.
- A lot of work.
- Did I say it was a lot of work?
- Many formal things needed beyond physics and math:
 - camera,
 - editing,
 - animations.





Topics selection and preparation



Topics selection and preparation



- Something that can be explained in 4 - 6 minutes.
- Current topics are always popular. Famous names help.
- The script is very important, not everything that looks good sounds good.
- Some parts might need to be left out at the end.
- Which parts will need animation/image/video.
- Have the dynamics of the video in mind from the very beginning.





Recording and postproduction



Recording



- Know what you want to say, but not completely by heart.
- There will be a lot of retakes.
- Somebody else in the room is very helpful.
- You can make things easier for you by cuts, animations, images,
- To prepare a 5min video usually takes 60 - 90 minutes of recording.



Postproduction

- It is better to have more material and then leave things out.
- The editing usually has many iterations.
- Timing and pauses can be extremely helpful.
- The final video is very rarely the same as envisioned in the beginning.
- Practice makes perfect.



Propagation



Propagation



- Material like this need a lot of propagation among people.
- Comment and engage, do not afraid to ask for sharing.
- Haters gona hate.
- Do not be afraid to mention or link your video in related discussions.
- The more people watch your video, the more people watch your video.



necakanesuvvislosti.

matfyzjein.sk



The screenshot shows the YouTube channel page for 'matfyzjein.sk'. The channel name is 'matfyzjein.sk' and the subscriber count is 4,994. The main video is titled 'NEČAKANÉ SÚVISLOSTI' and features a man pointing upwards. The video description includes '26 videos • 4,994 views • Last updated on Mar 14, 2021'. The channel is subscribed to by 'Tom Nicholas' and 'Climate Town'. The video list includes:

- 1. NEČAKANÉ SÚVISLOSTI (2017 2020)
- 2. Rádioaktivita, Pluto a mikrovlnka | Nečakané súvislosti (5:08)
- 3. Šach a fyzika plynov | Nečakané súvislosti (5:45)
- 4. Ako lietajú lietadlá | Čajník a krídlo lietadla | Nečakané súvislosti (5:05)
- 5. Mikrofón pred reproduktorom a jadrový výbuch | Nečakané súvislosti (4:13)
- 6. Bicyklovanie proti vetru a špeciálna teória relativity | Nečakané súvislosti | Veda (6:12)



General remarks



- Try to be innovative and different.
- Know what you want to achieve.
- English vs. local language.

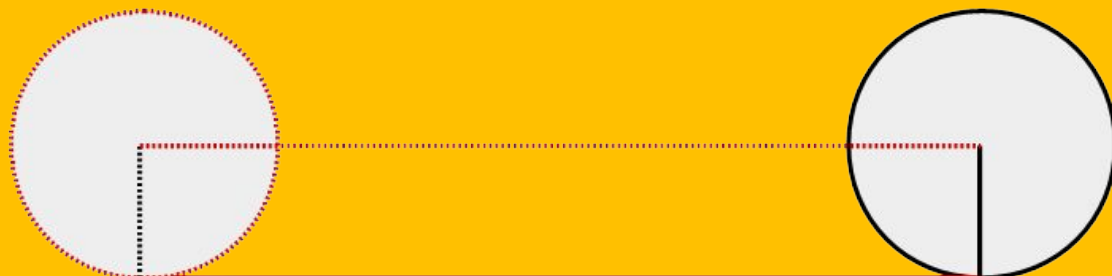
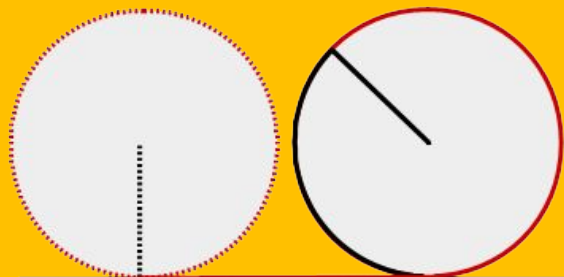
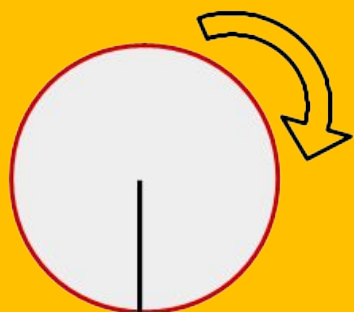


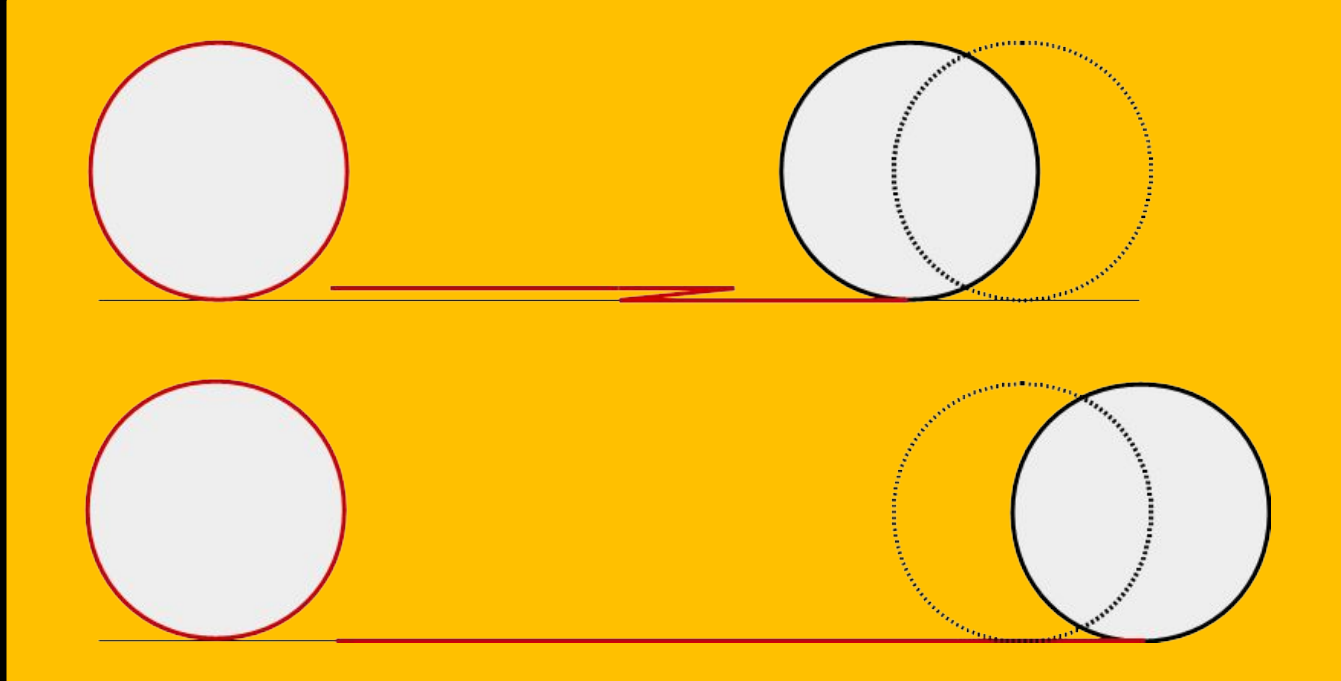


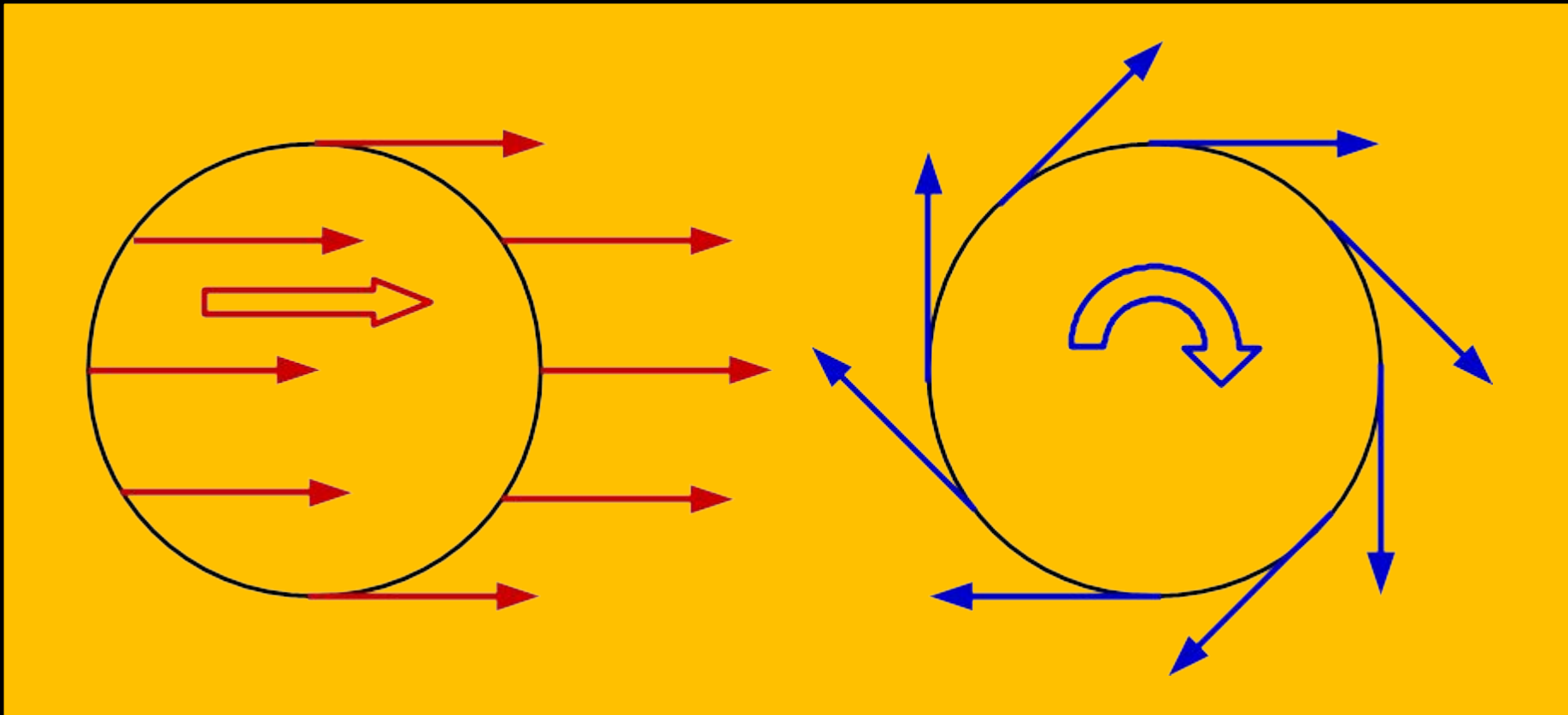
What do Peter Sagan and
tank have in common?

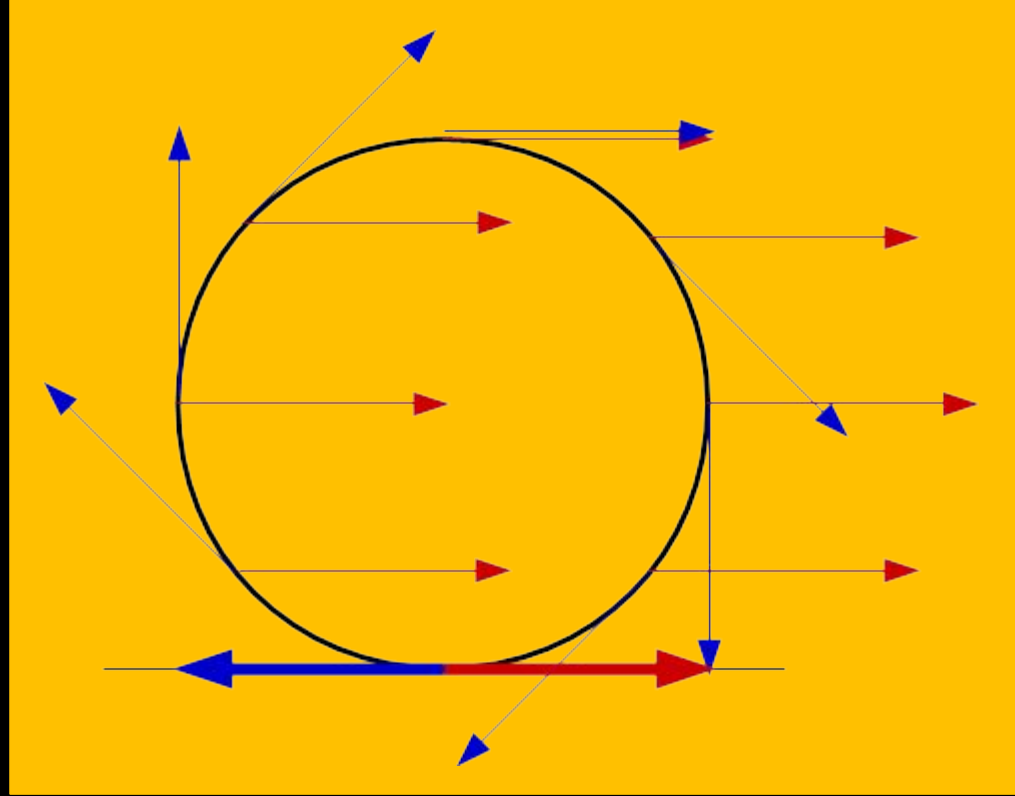


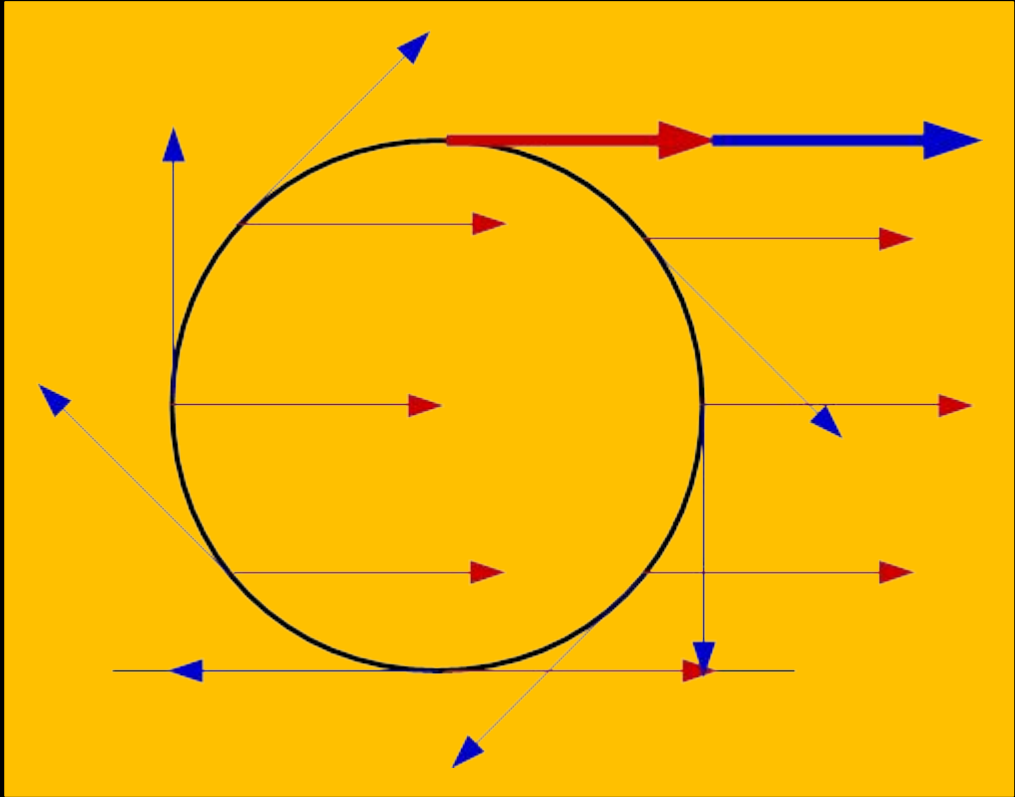




















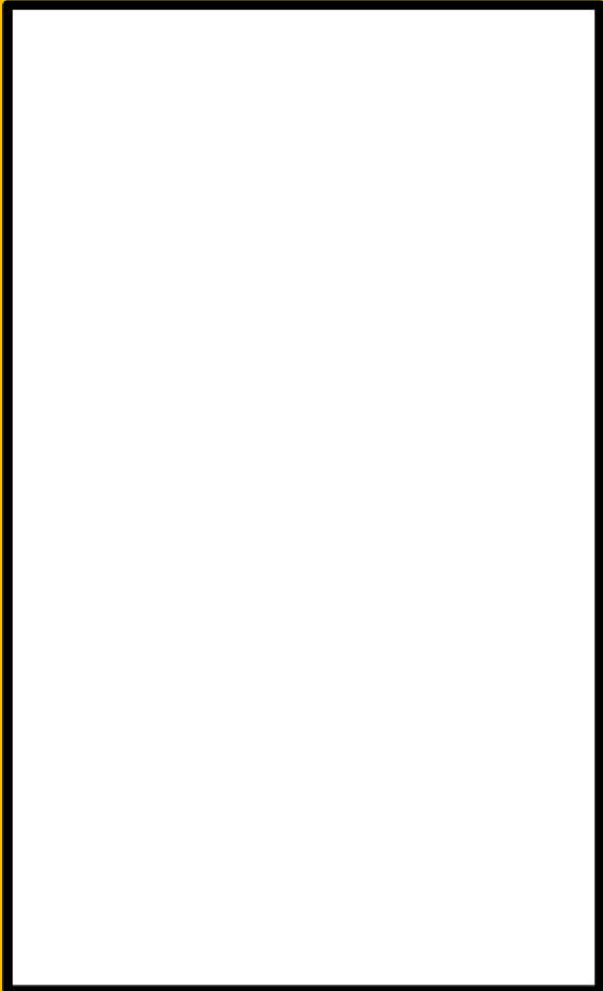




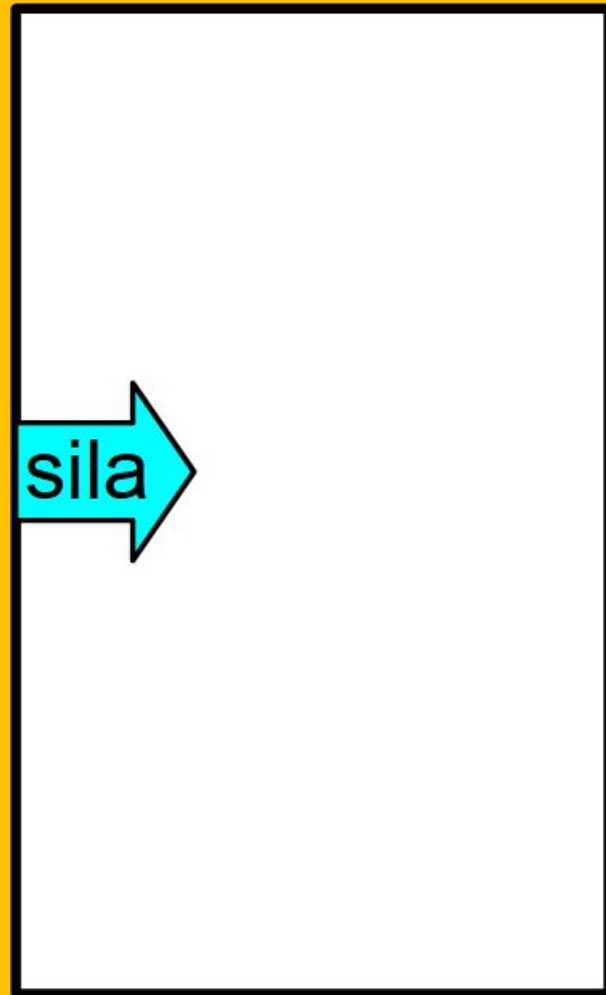
What do ABS and wine
have in common?



hranica



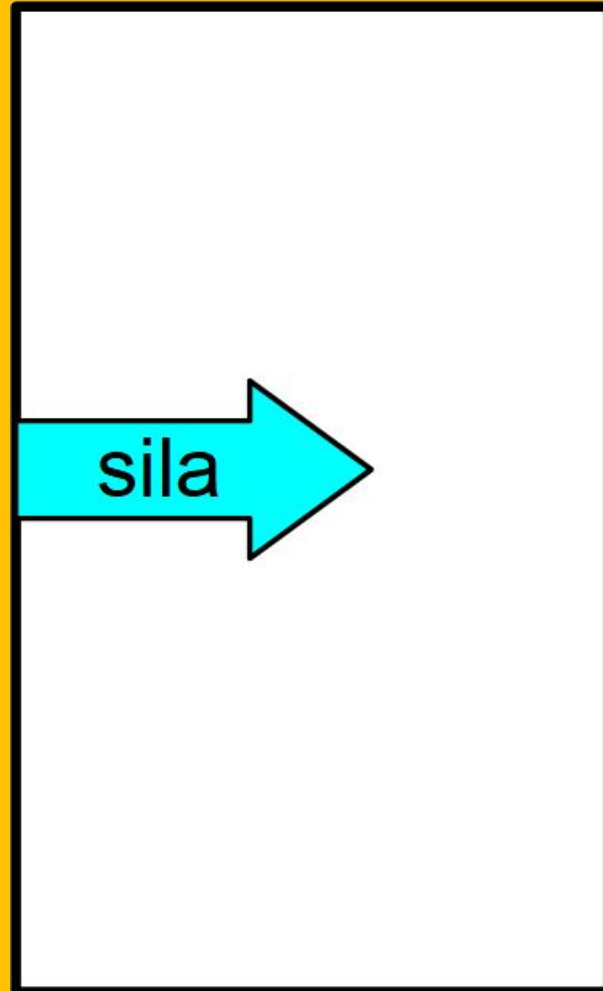
hranica



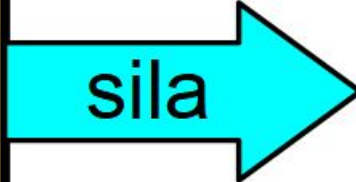
silā



hranica



silá



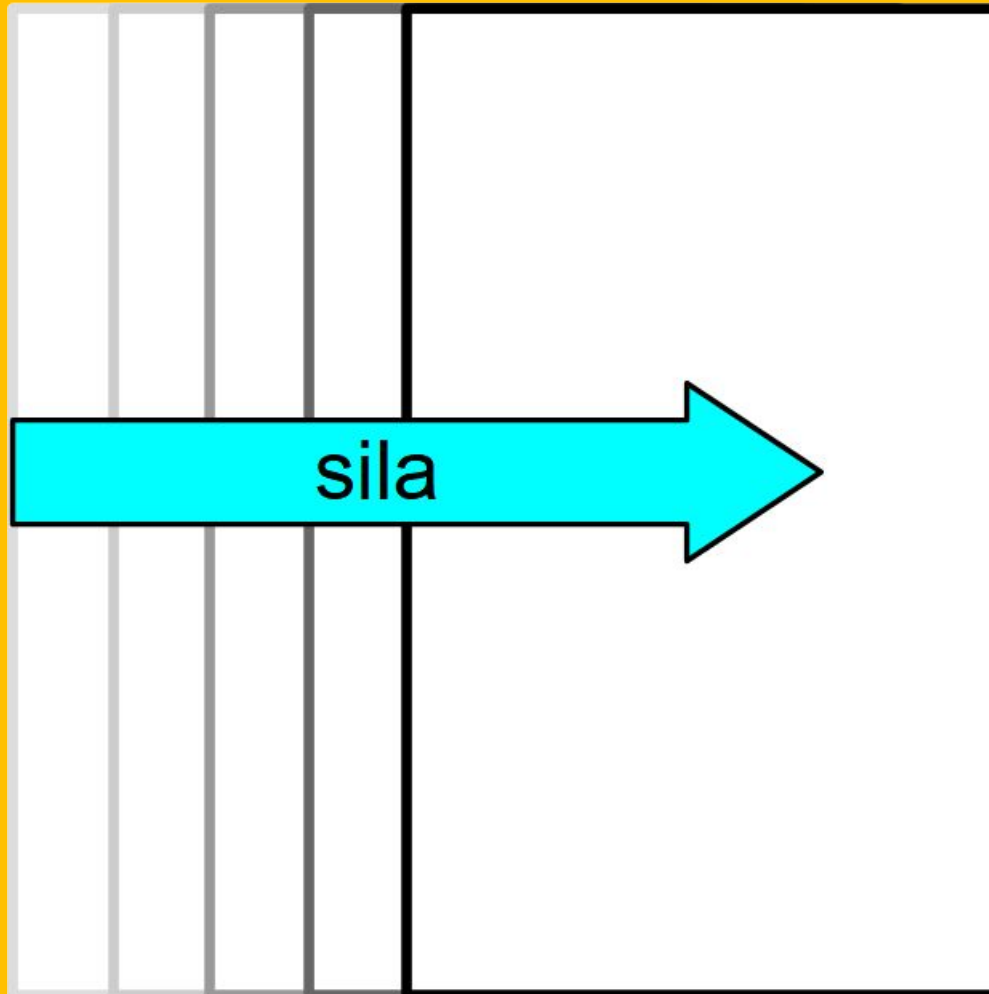
hranica



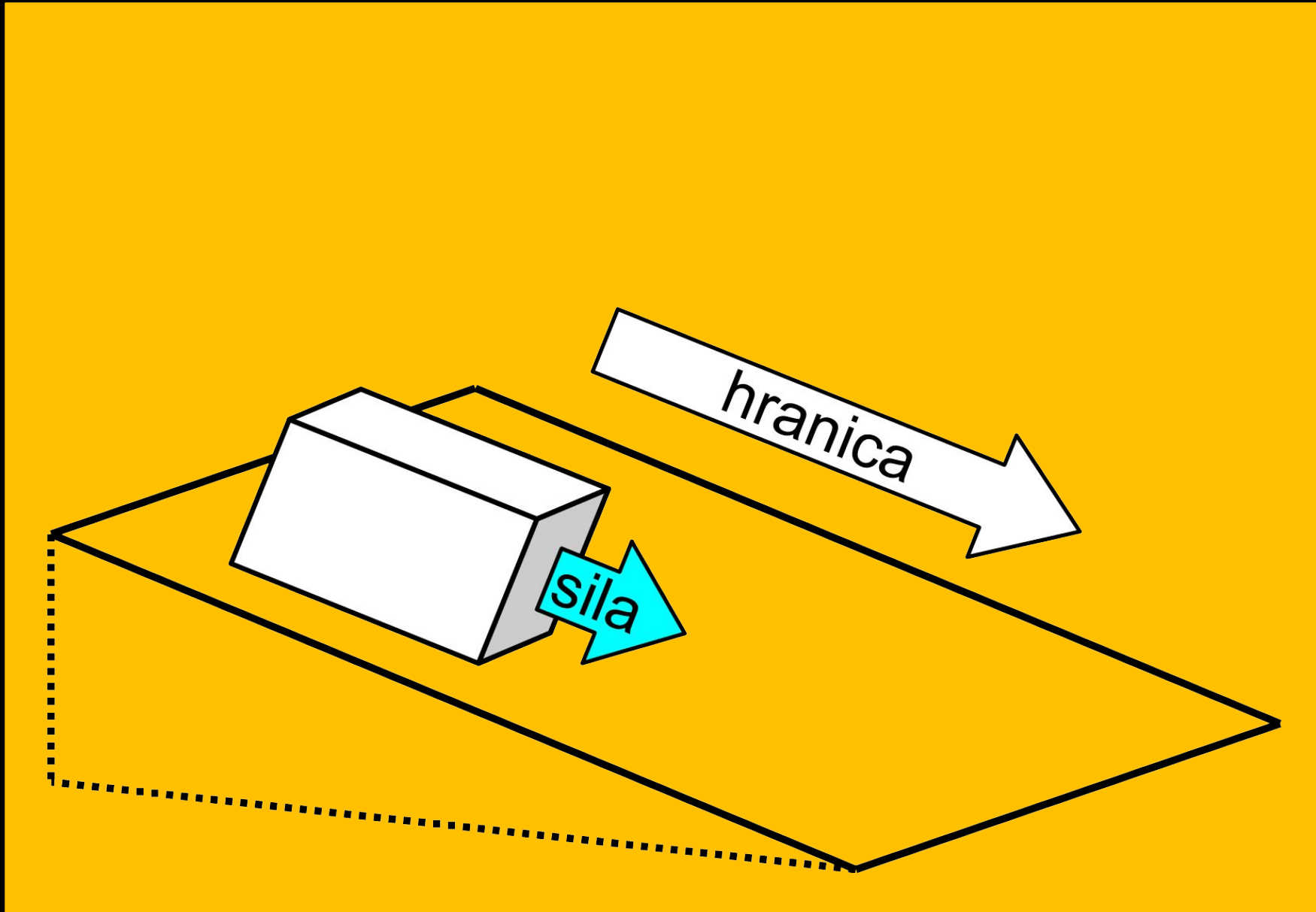
silá

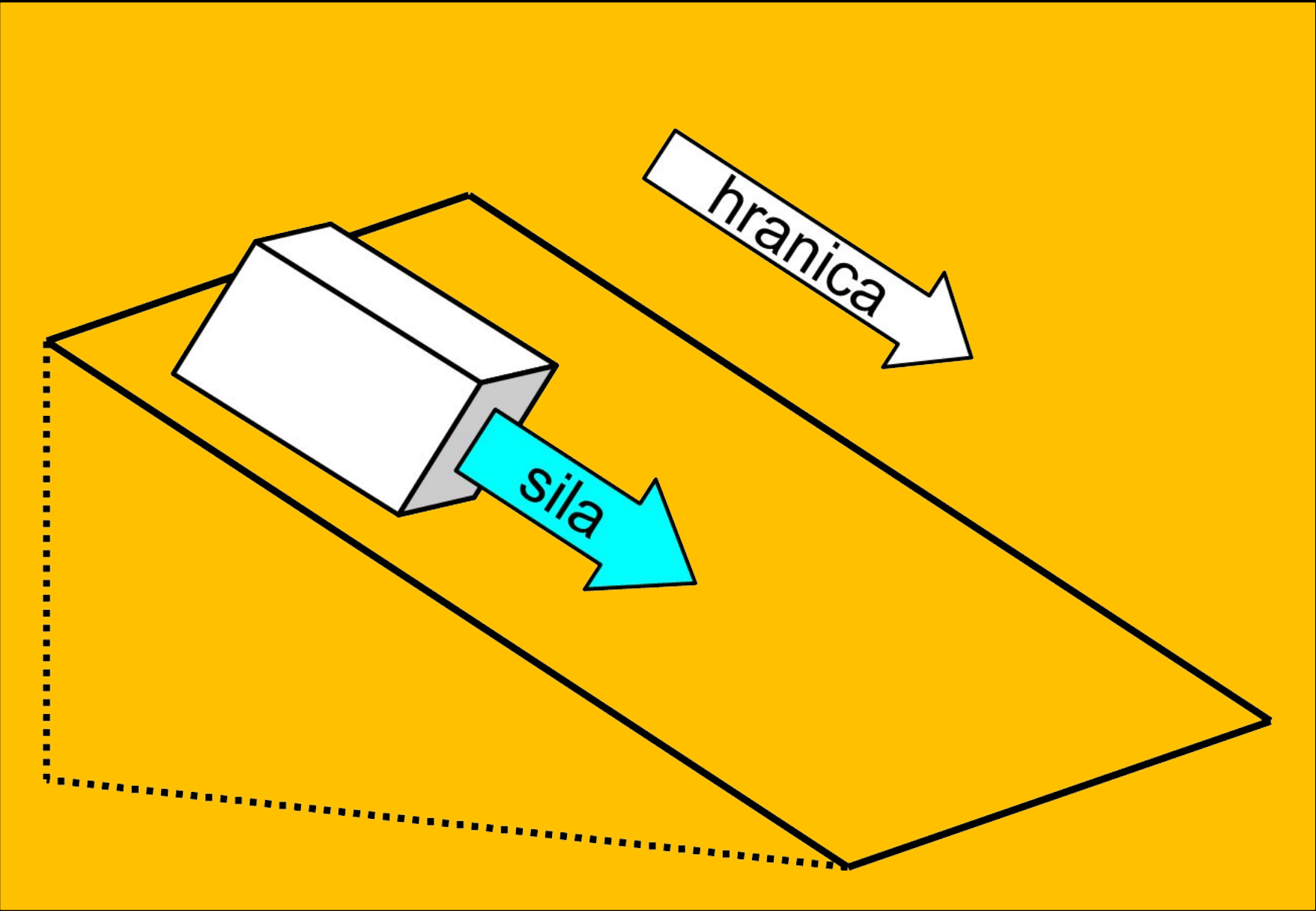


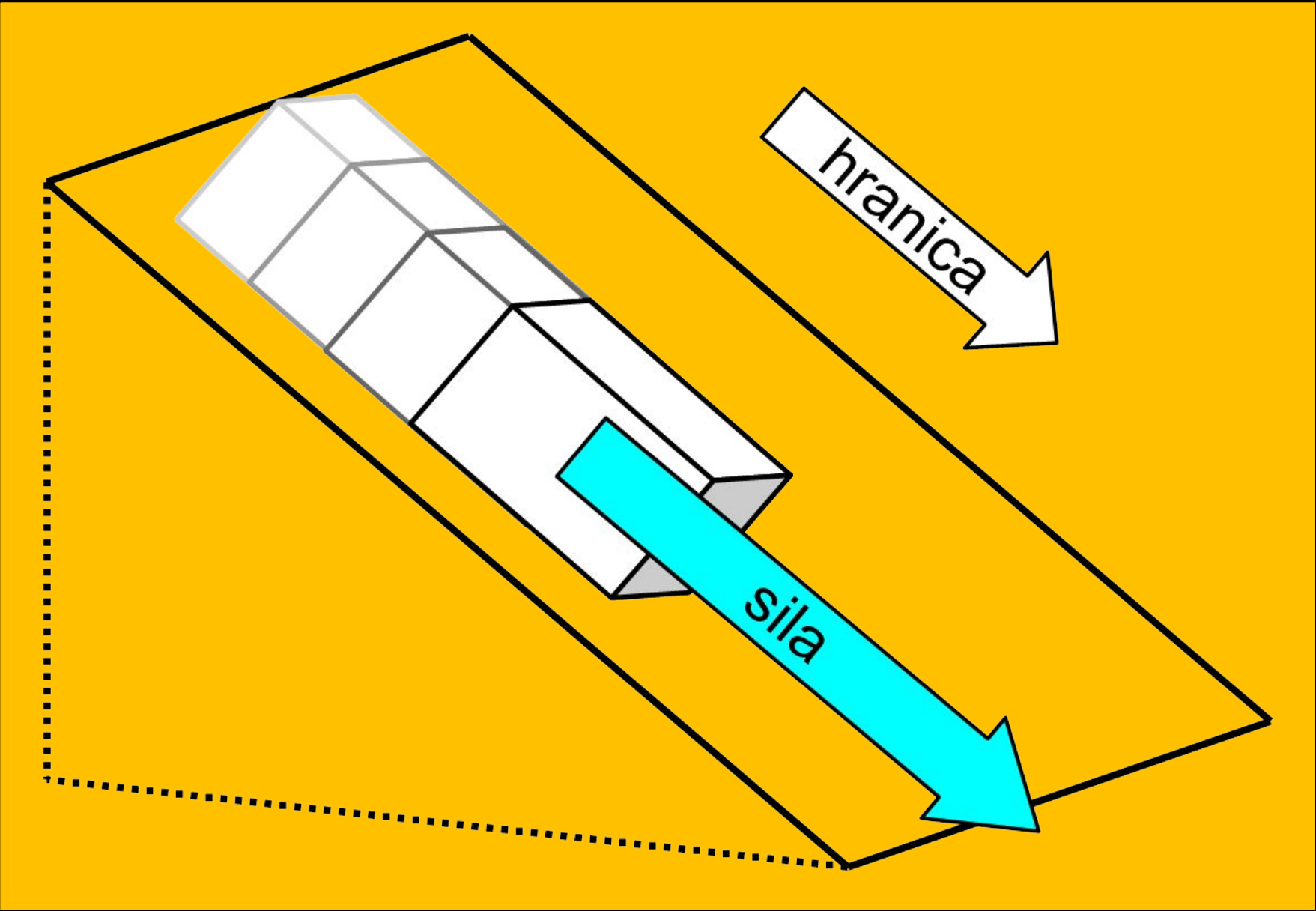
hranica





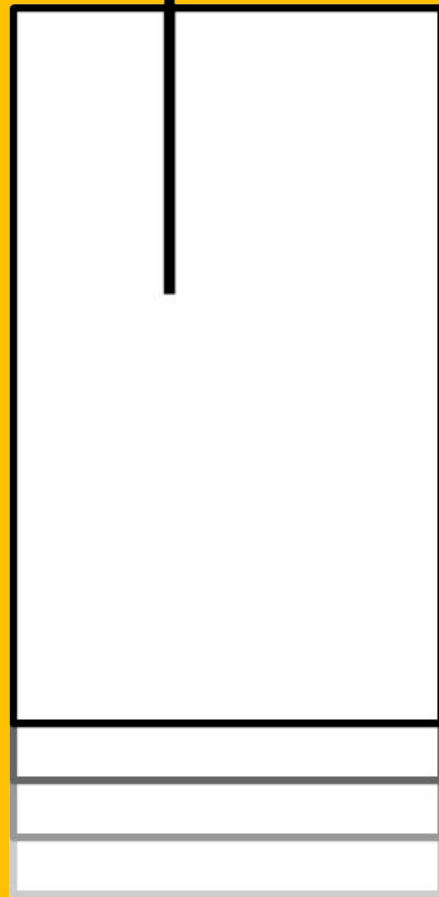


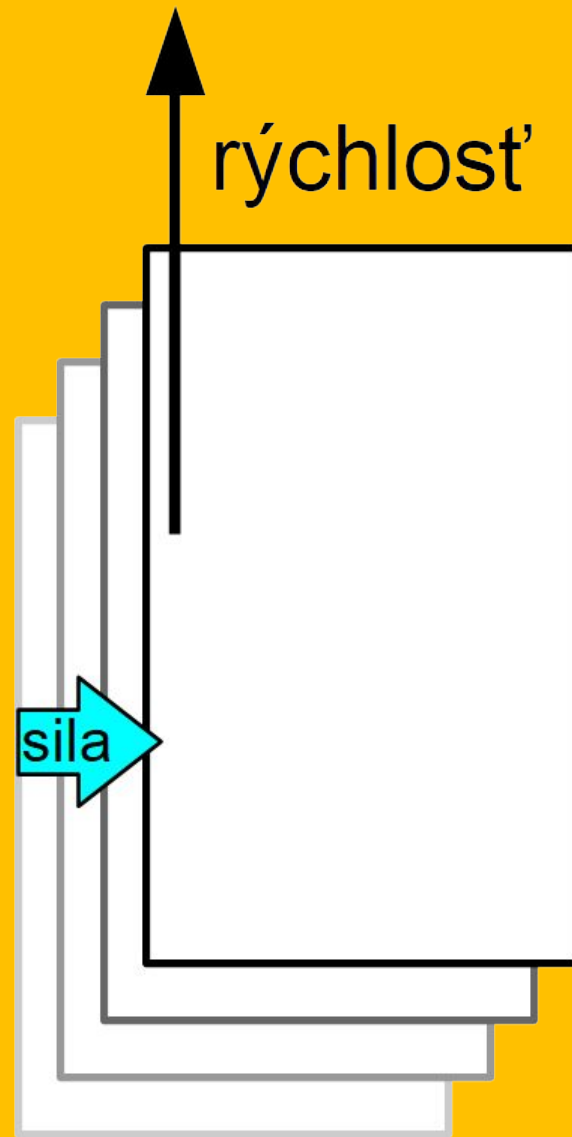




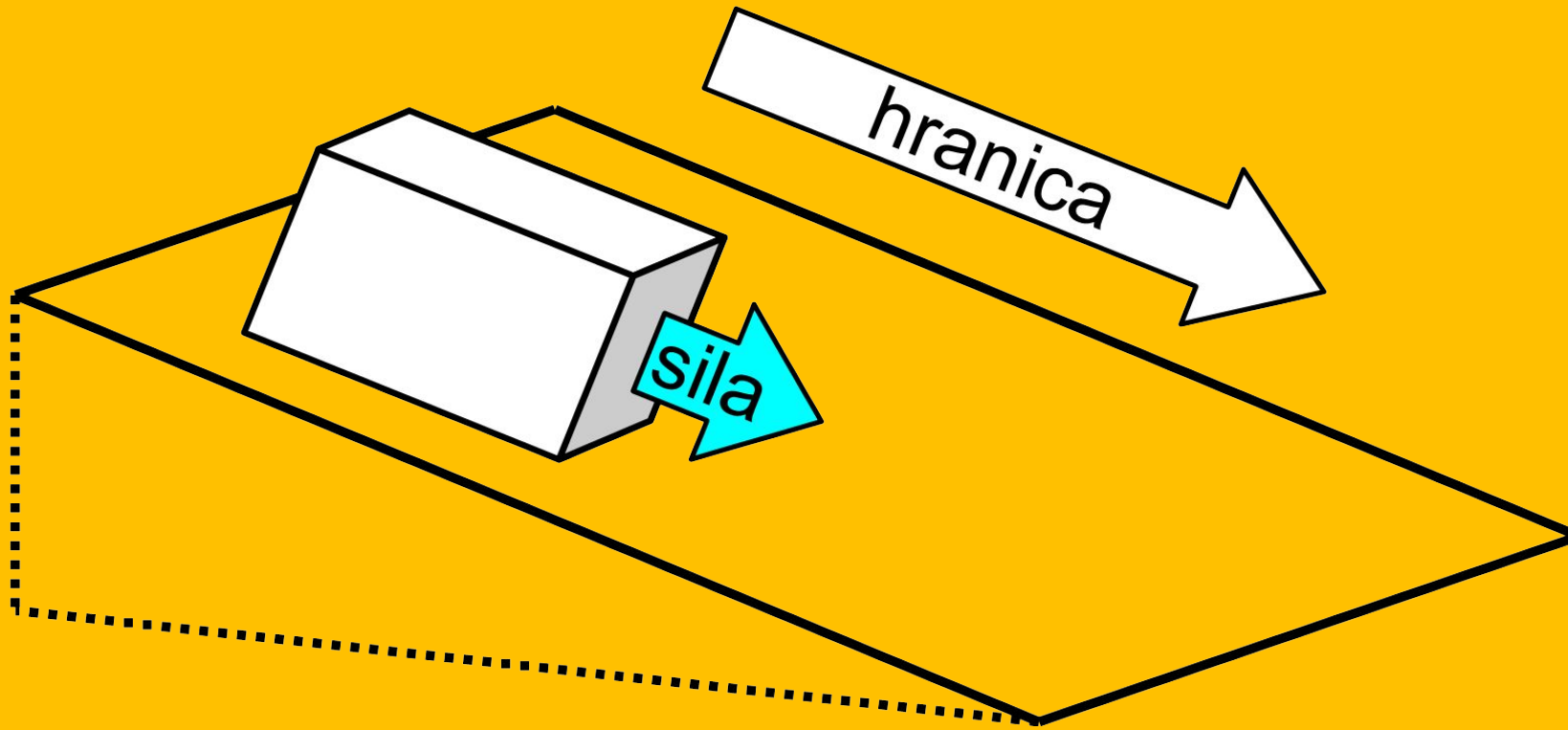


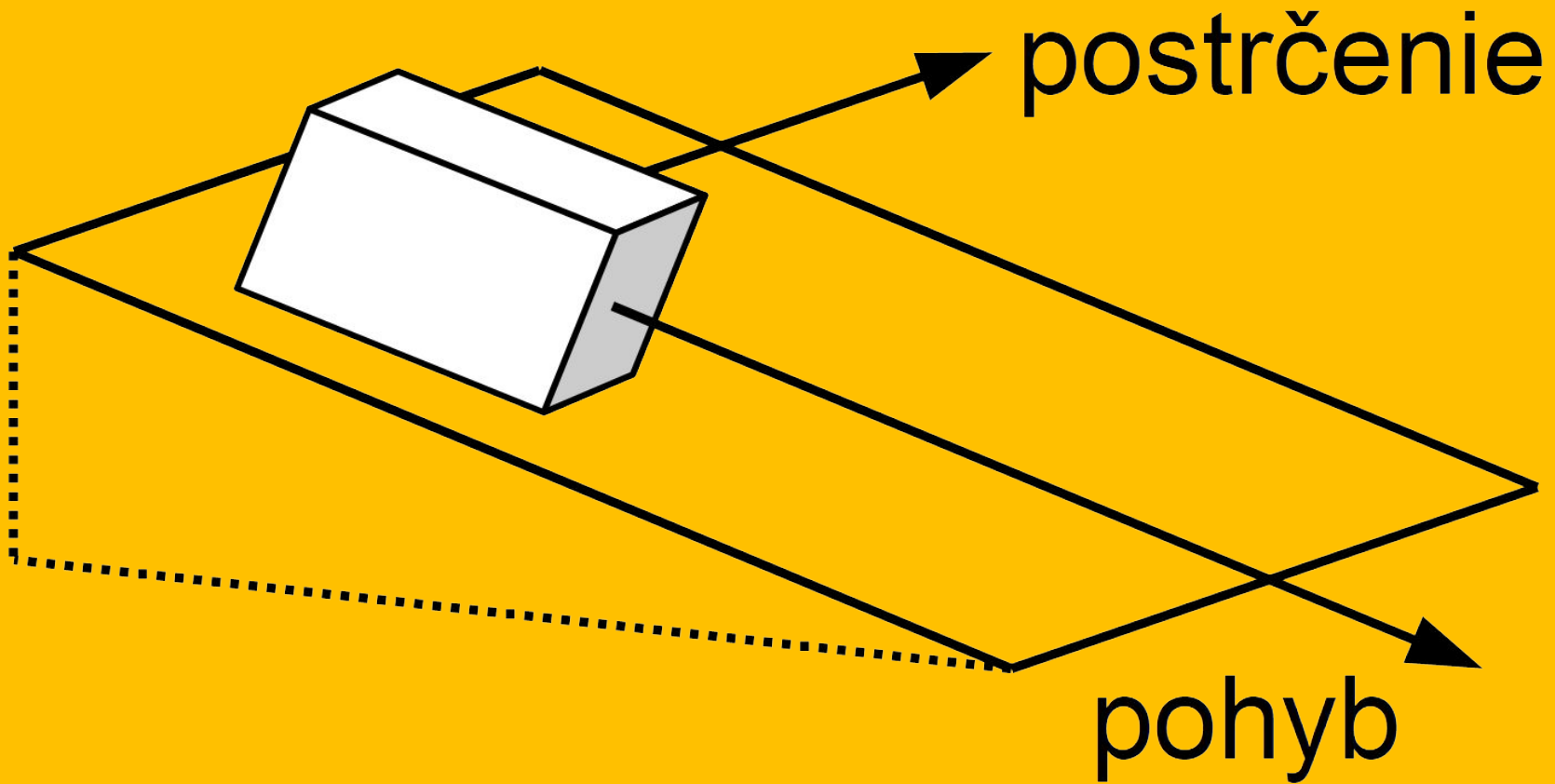
rýchlost'



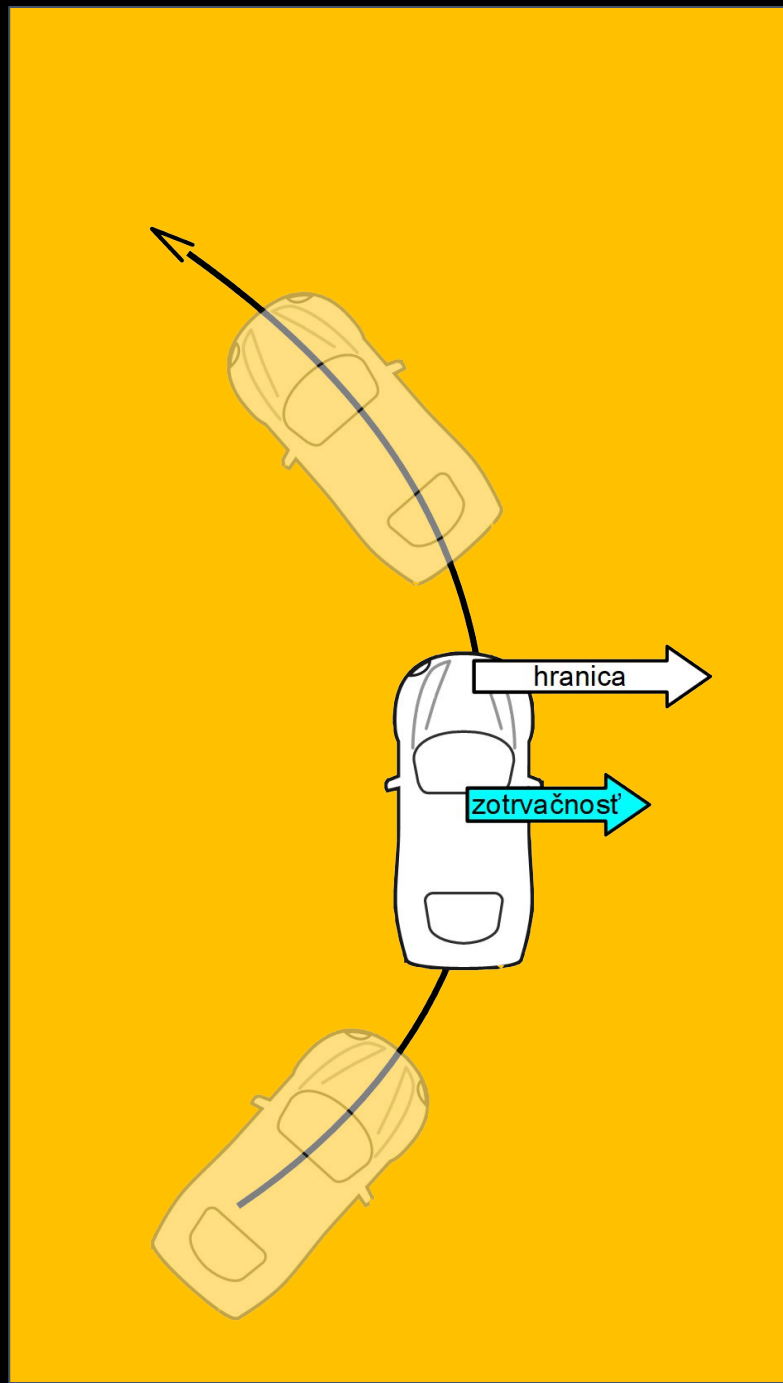


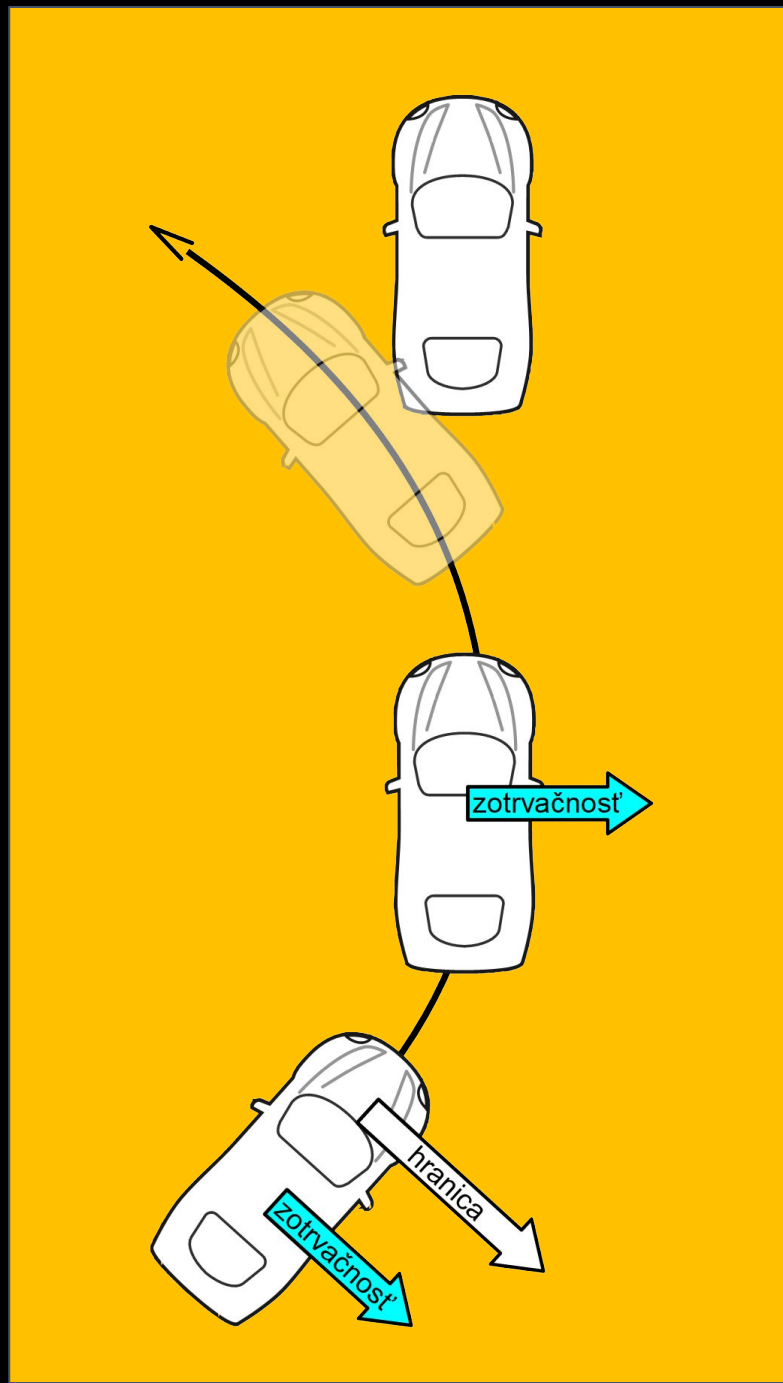






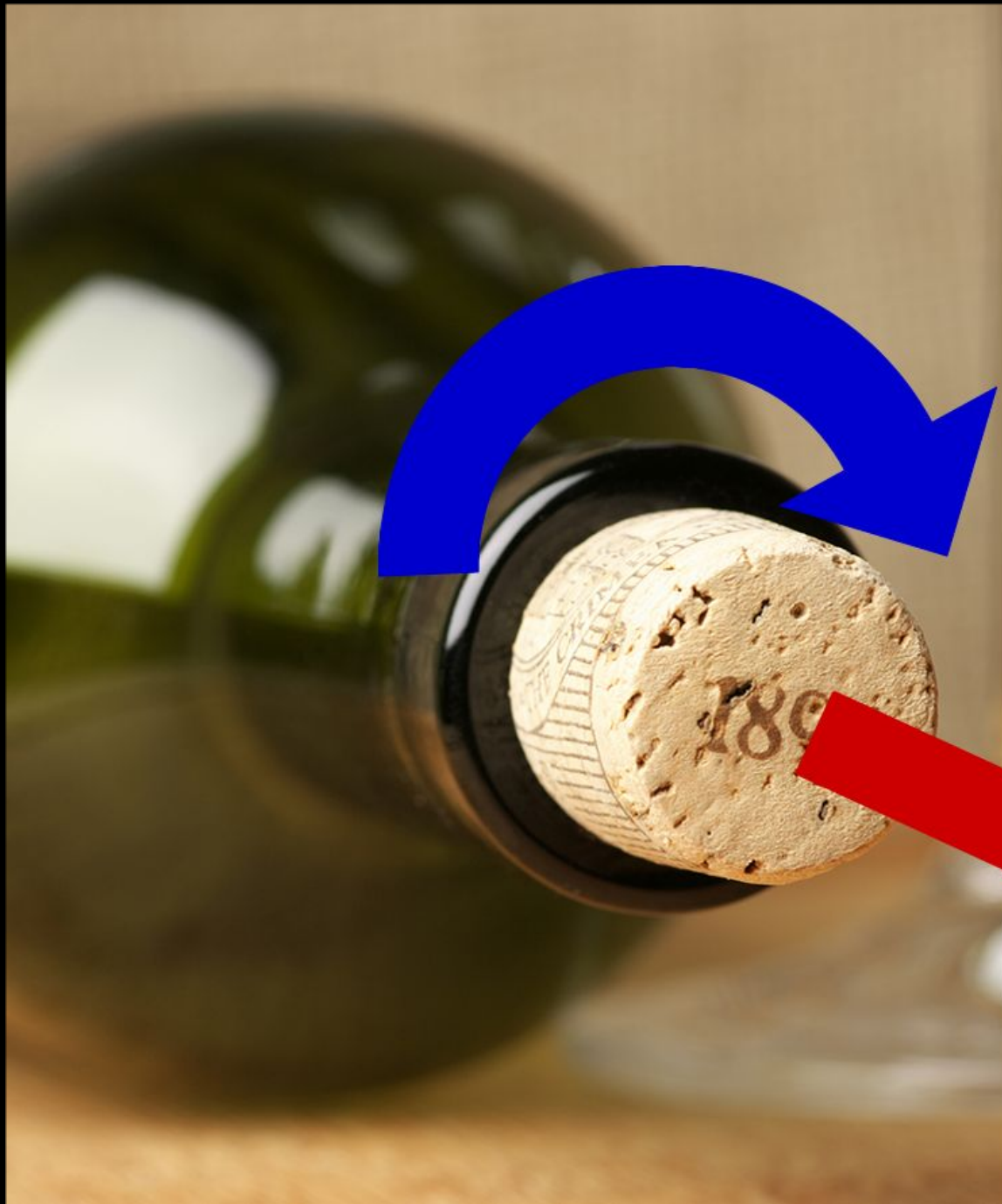














**Thank you for your
attention!**

