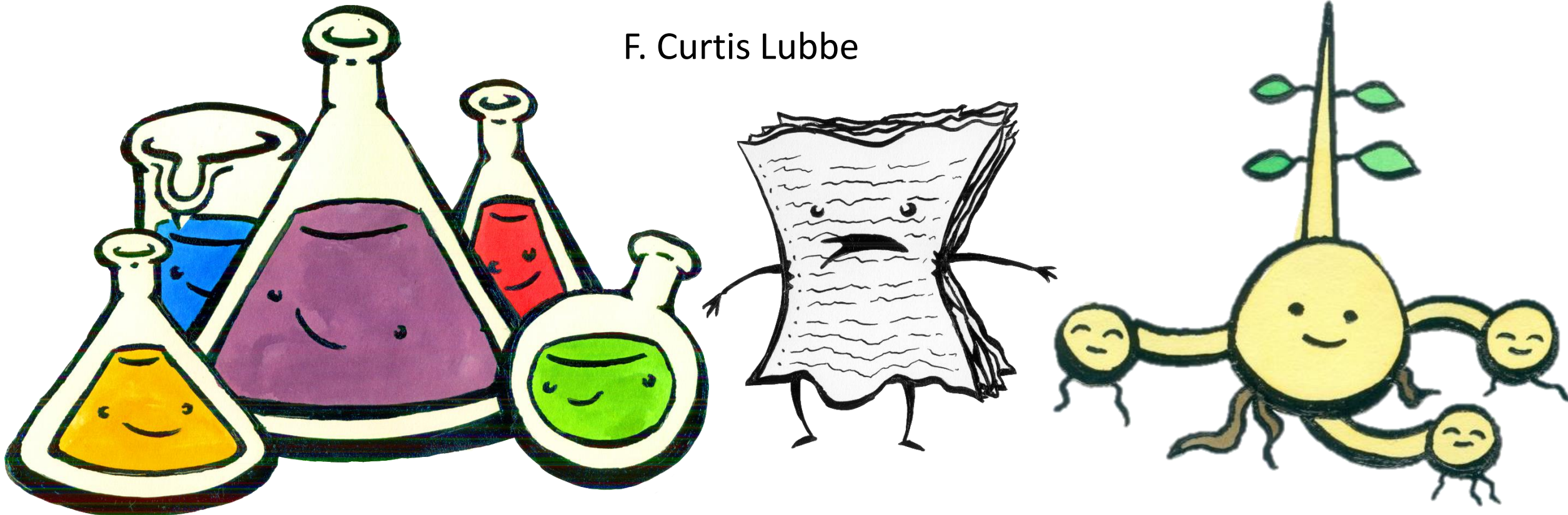


Cute Science:

Simplification, Expression, and Fun
in Science Communication

F. Curtis Lubbe



Science communication can be tough



Science



Communication

Images can help!

People like cute images

- Popular brands
- Advertising



Sprout, Jolly Green Giant



Sanrio, 2022



<https://www.metv.com/stories/10-iconic-cereal-mascots-that-got-huge-transformations>

Anything can be cute

NUROFEN



What's your pain?



Why Nurofen

What's your pain?

Products

FAQ's



Headache



Migraine



Muscular pain



Dental Pain



Period Pain



Cold & flu



Children's Pain



Fever pain



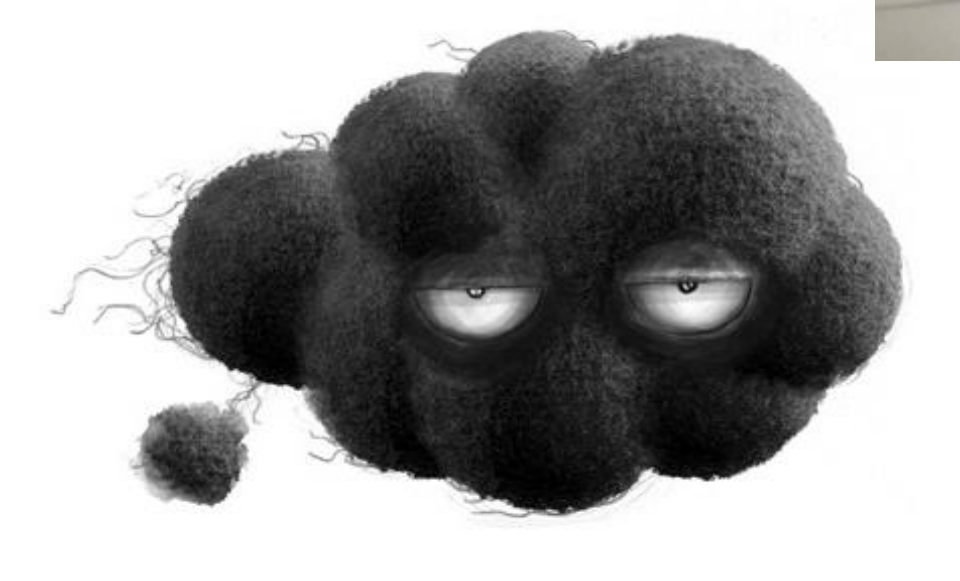
Back pain



Aches & Pains

Lauren Indovina (at Psyop)

www.laurenindovina.com

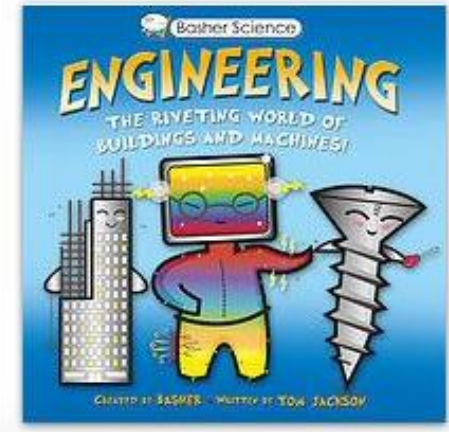
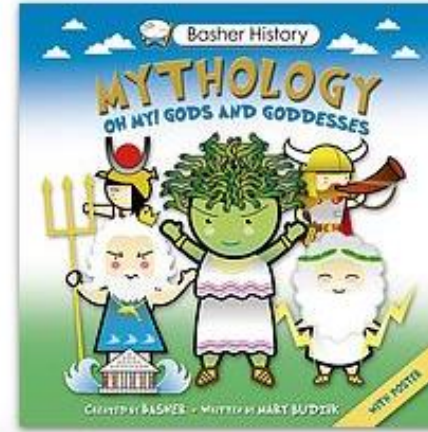
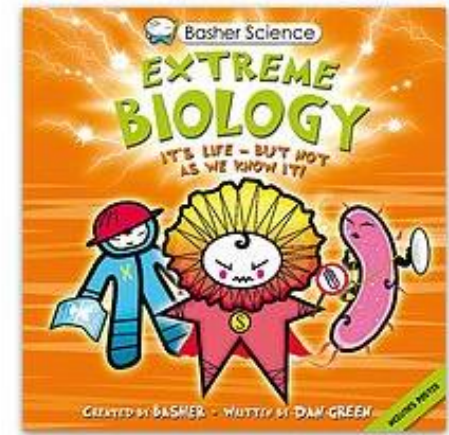
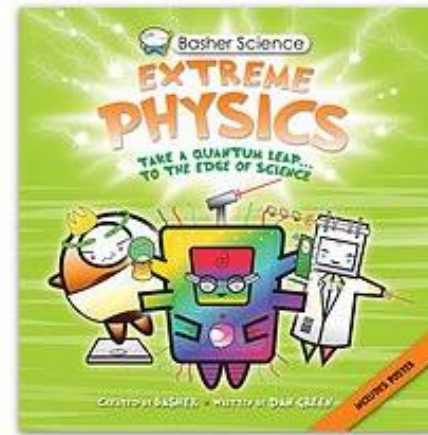
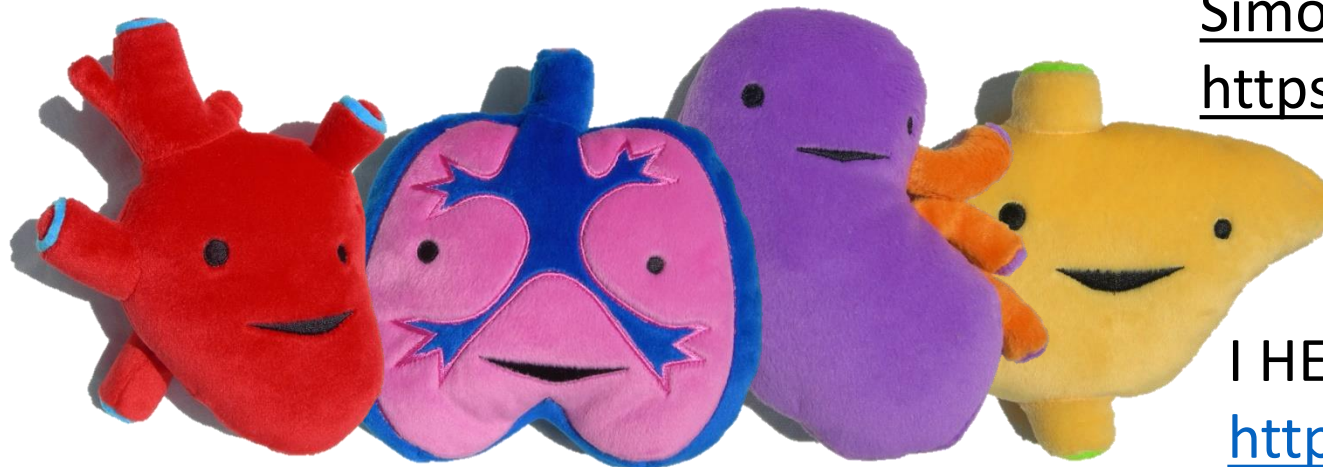


Even science can be cute



GIANTMICROBES

<https://www.giantmicrobes.com/us/>



Simon Basher

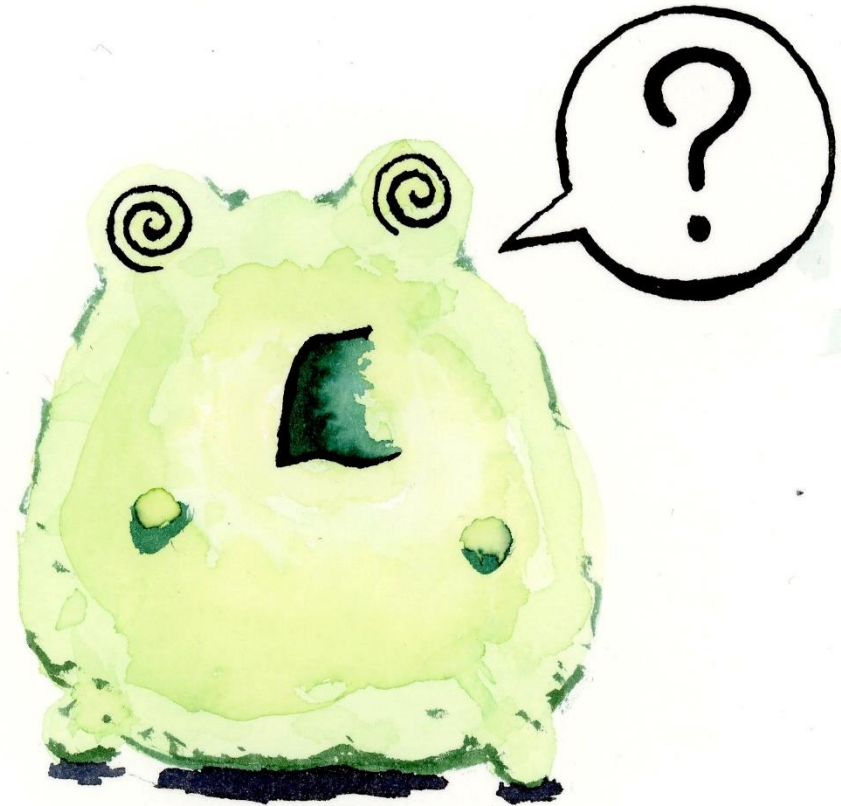
<https://www.basherscience.com/>

I HEART GUTS

<https://iheartguts.com/>

Cuteness isn't (just) nonsense

- Things are cute for a reason
- Cuteness has its uses
- Cuteness is another part of the rich language of imagery



Images are part of Visual Culture

Images:

- All around us
- Used in communication
- Have meanings and symbolism
- Part of interaction and understanding



Semiotics: Images have jobs

Signified + Signifier = Sign

This is not a pipe, this is a sign



Rene Magritte

3 Types of Signs

Index



Faithful impression
e.g. photo

Icon



Resemblance, motivated sign
e.g. illustration

Symbol

PLANT

No relationship to referent
e.g. word

6 principle functions

Referential

Recognizable subject
e.g. a plant

Phatic

Framing
e.g. centred image

Metalinguistic

Agreed codes
e.g. these arrows

Emotive

Convey emotion
e.g. happy face

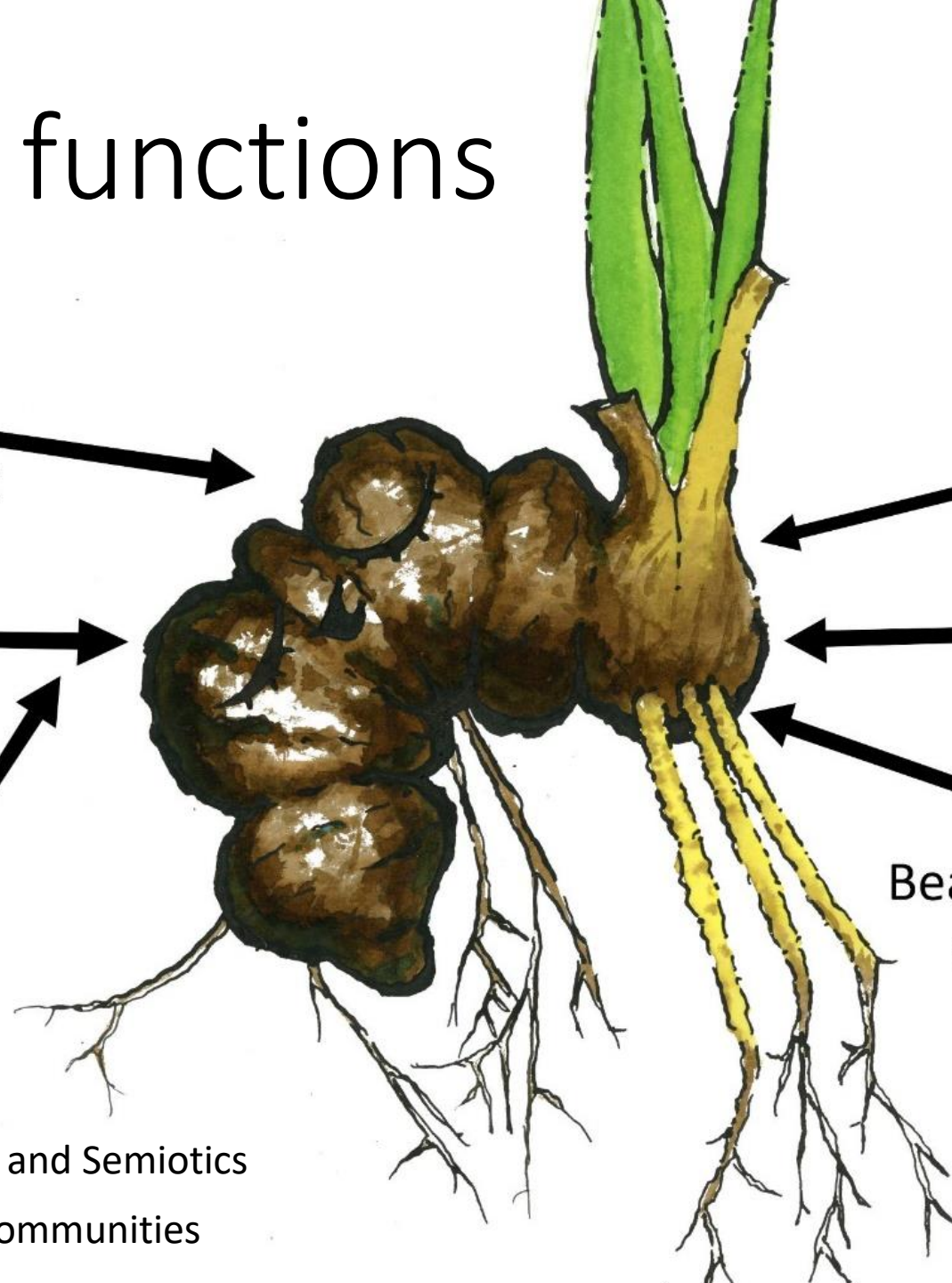
Conative

Persuasive

e.g. calming colours

Poetic/esthetic

Beautiful or visually pleasing
e.g. colouring and texture

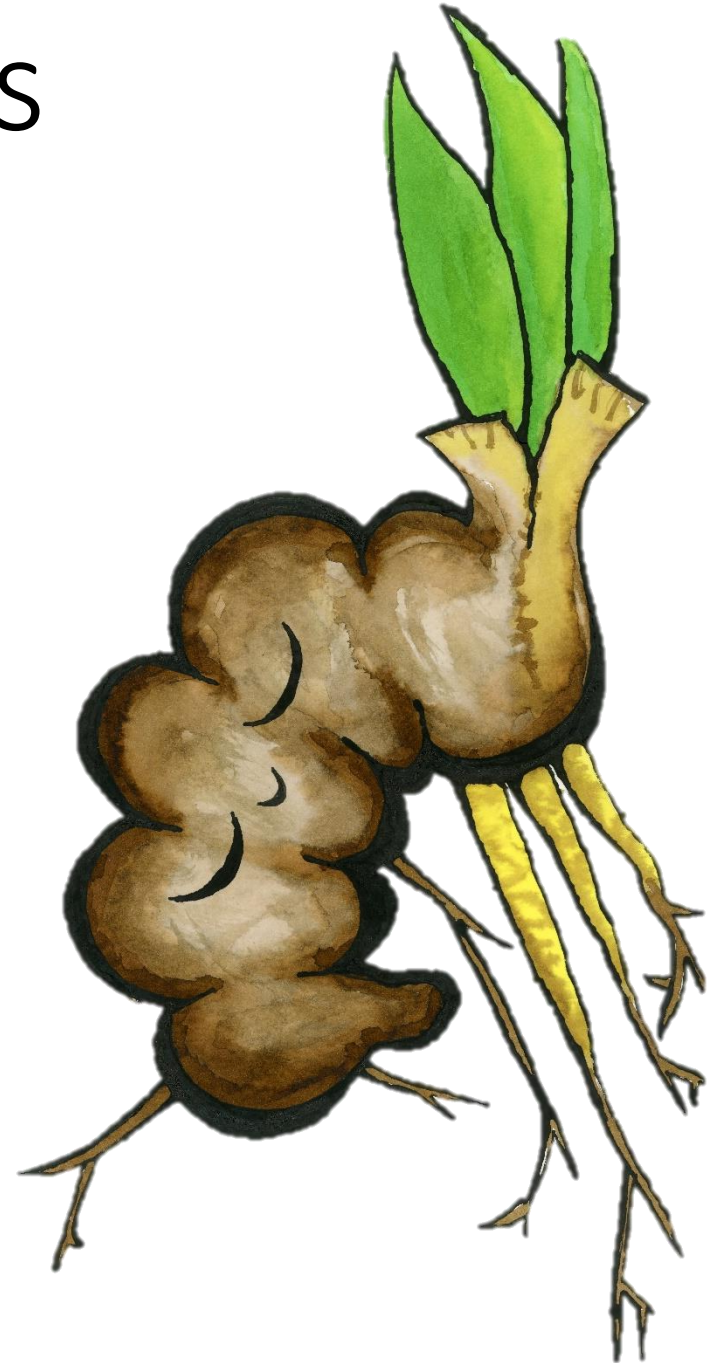


Ashwin, 1984, Drawing, Design, and Semiotics

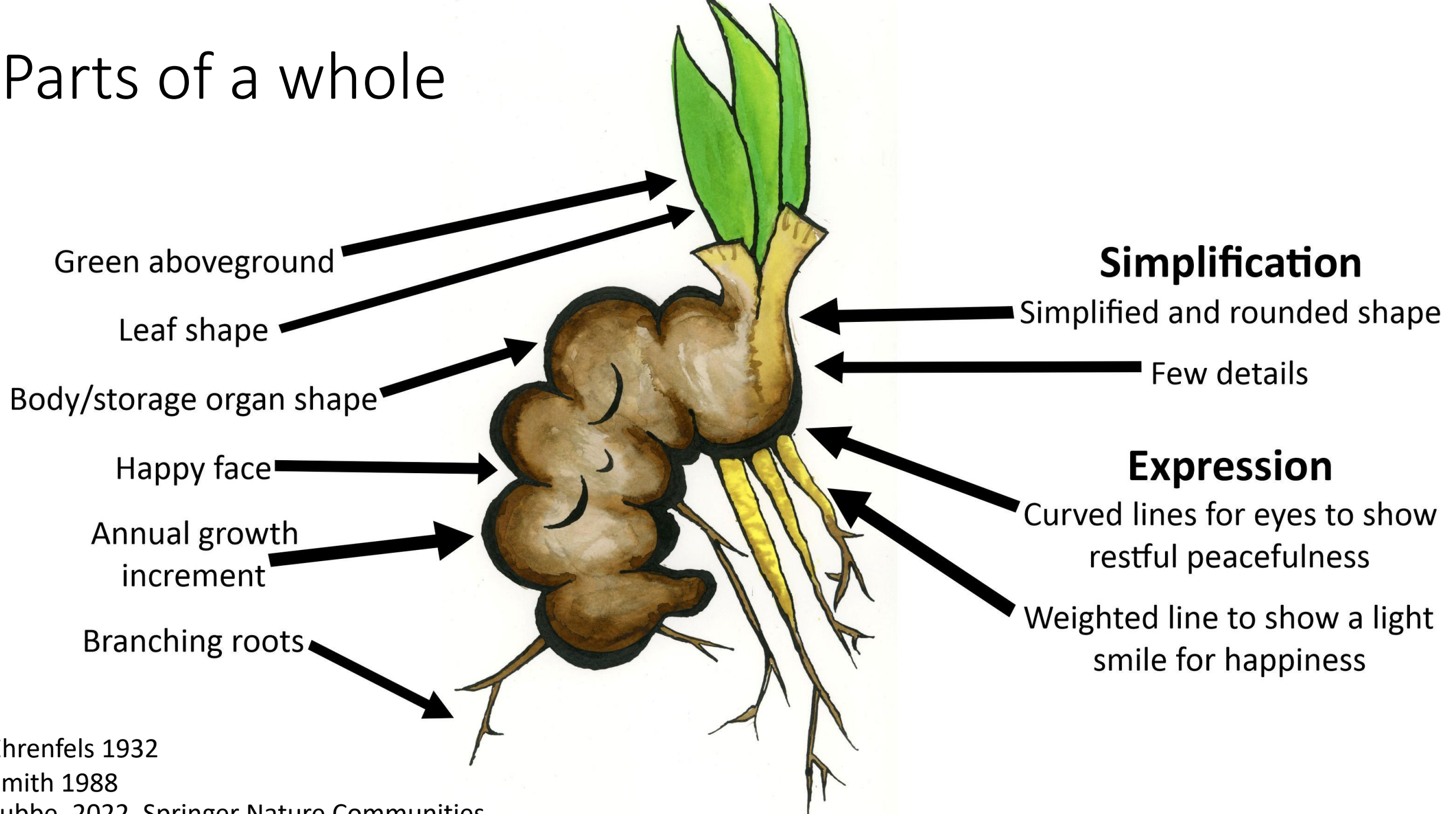
Lubbe, 2022, Springer Nature Communities

Gestalt: Images have parts

- Gestalt (from German):
shape, figure, form
- a Gestalt:
a whole made unique by its parts



Parts of a whole



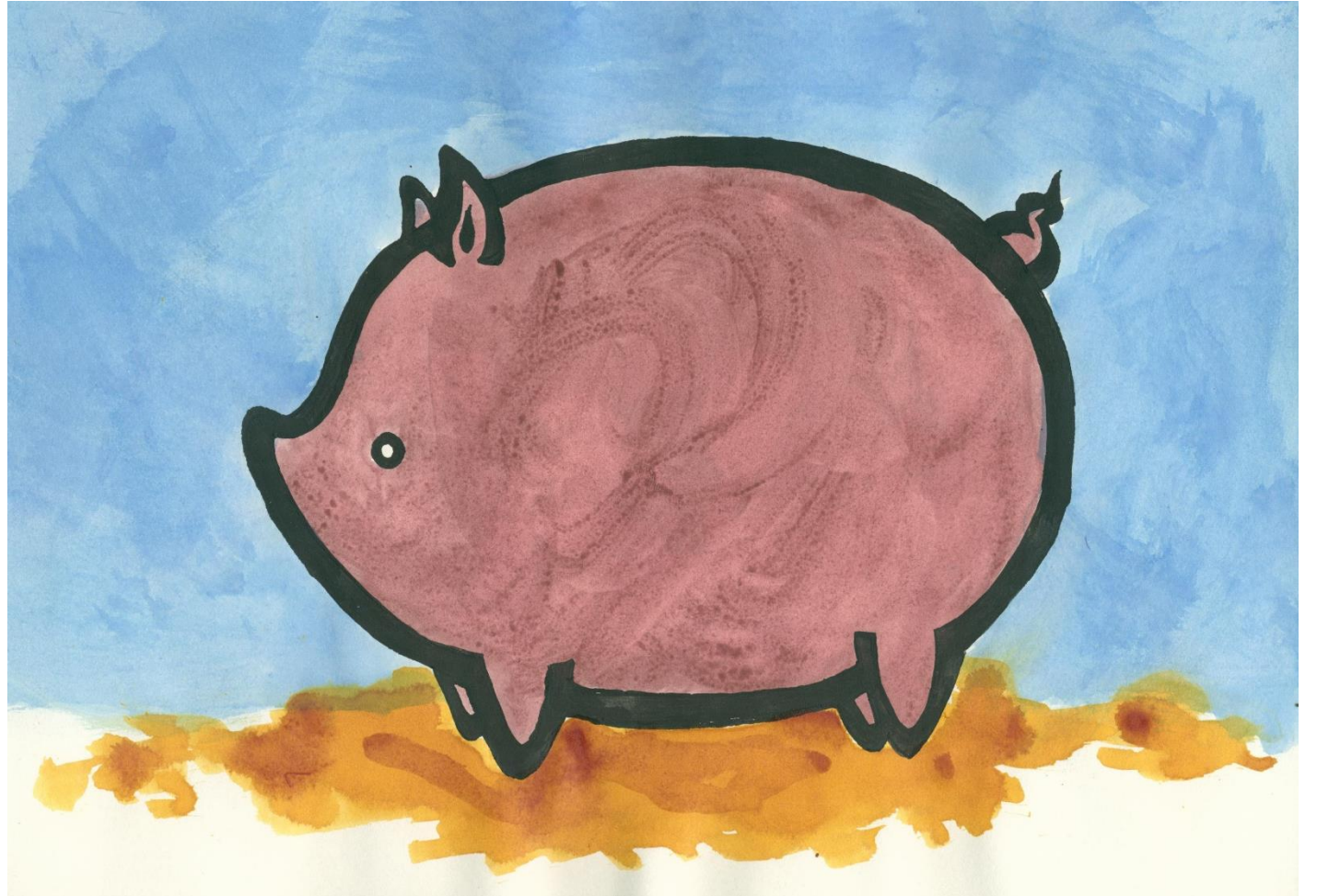
Ehrenfels 1932

Smith 1988

Lubbe, 2022, Springer Nature Communities

Cute Gestalt: Cuteness is simple

- Only use the qualities necessary to identify and understand the whole
- Can include other simple signs for emotive or conative functions



Cute semiotics:

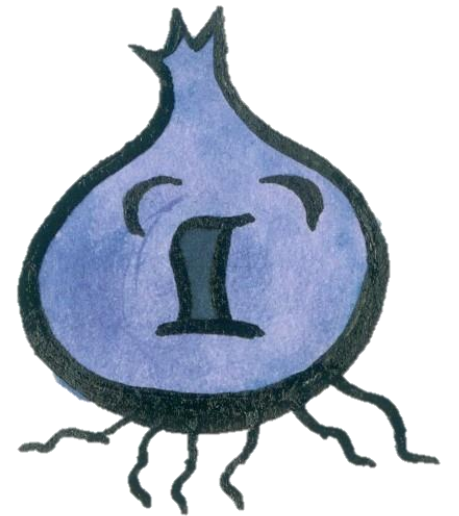
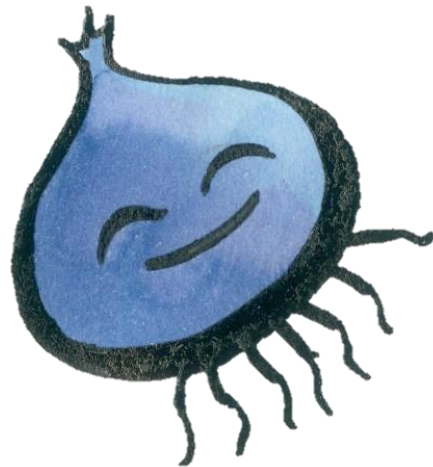
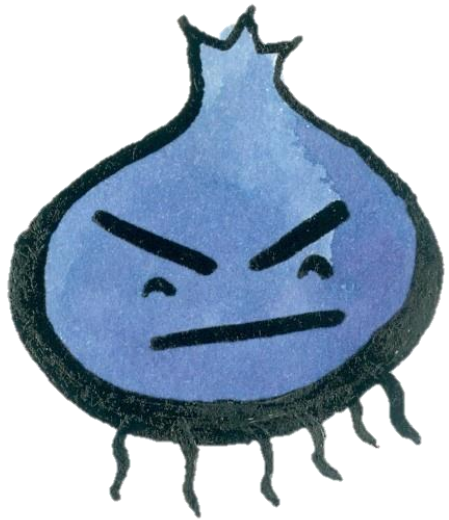
Cuteness uses a language we understand

- Uses anthropomorphism to convey key principle functions

Emotive – conveys emotion

Conative – persuasion (may be emotive)

Poetic/esthetic – self expression/beauty



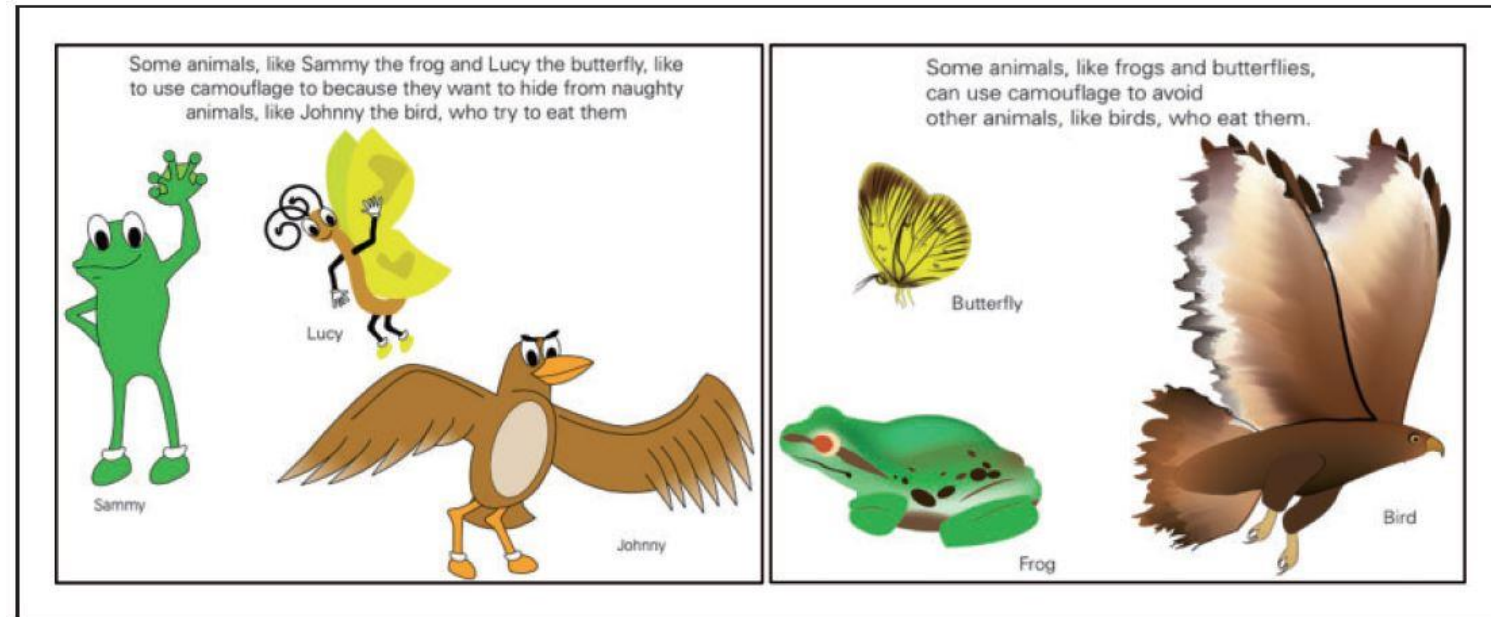
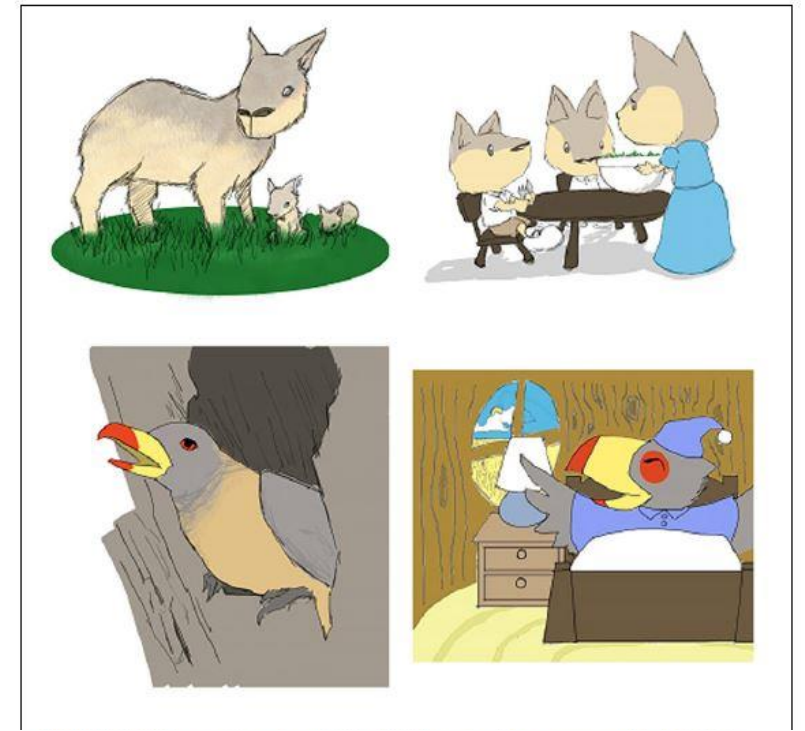
Anthropomorphism

- Attribution of human qualities to non-human subjects
- Probably predates our species



Anthropomorphism and education

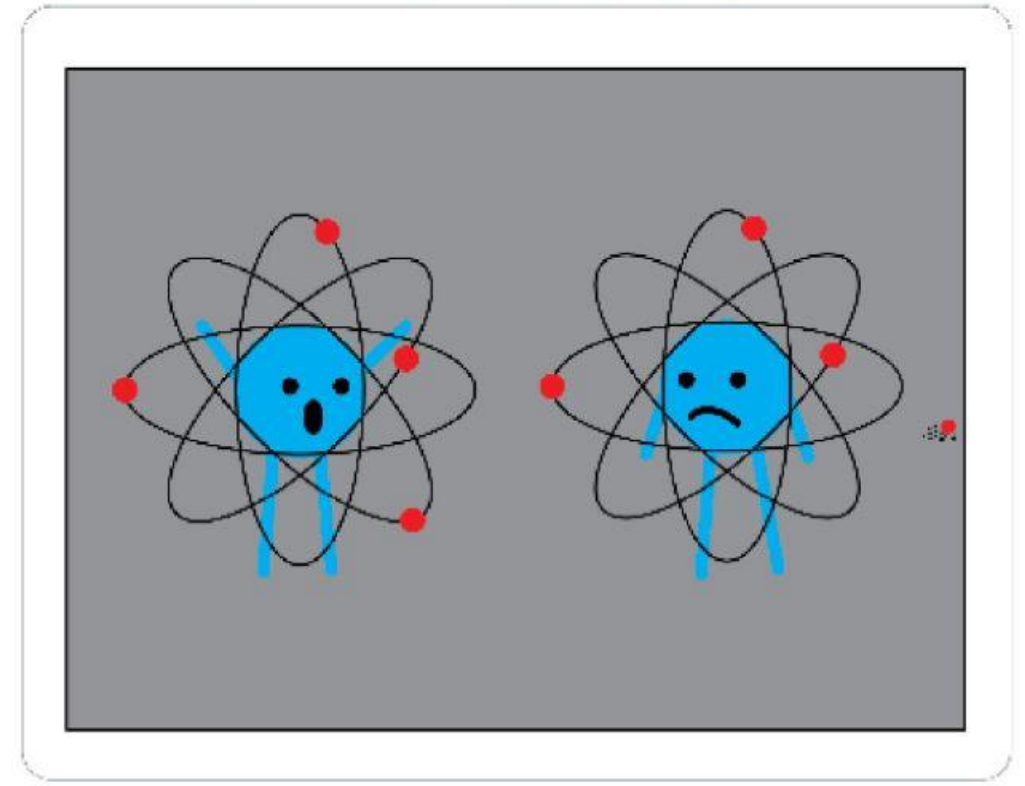
- Strong anthropomorphism decreases learning and recognition in children
- Mild anthropomorphism does not disrupt learning and can increase engagement



Anthropomorphism in communication

- Can increase enjoyment
- Can increase retention of details
- Decreases confusion in adults reading science texts

Two atoms are talking. One says
"I think I've lost an electron." "Are you sure?"
"Yeah, I'm positive." [#science](#) [#funny](#)



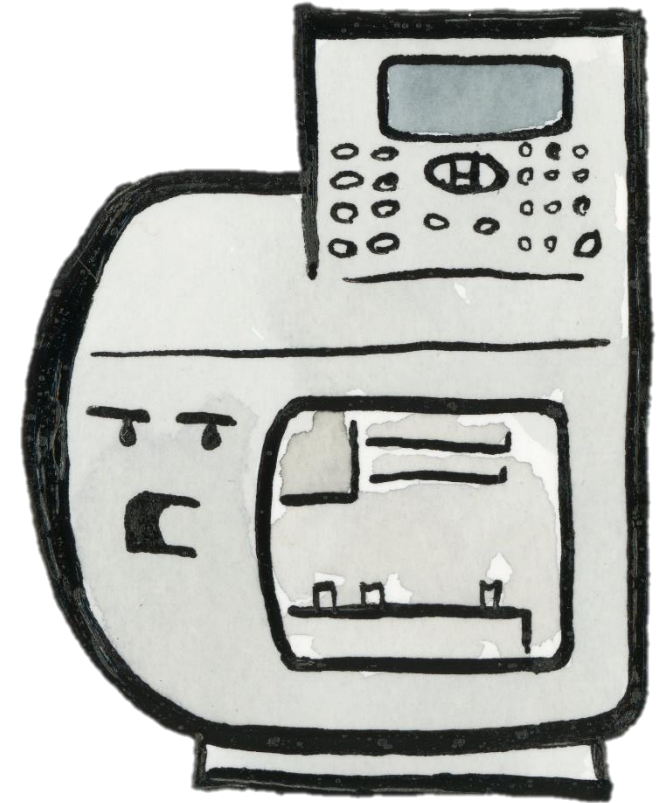
Lin et al. 2015

McGellin et al. 2021

Yeo et al. 2020

Two types of anthropomorphism

- **Anthropomorphic belief** –
a framework of understanding
- **Anthropomorphic interaction** –
an extension of relationship and empathy



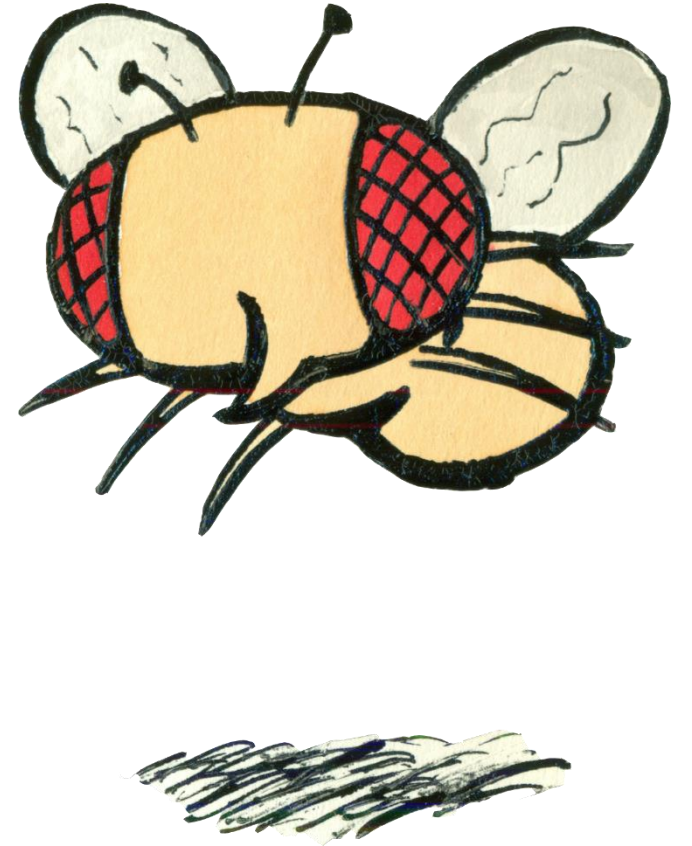
Anthropocentrism is bad

- Enforces a hierarchy
- Can be used to obscure or ignore the truth
- Greater attention goes to organisms with the characteristics we praise



Anthropomorphic interaction is good

- Emphasizes connection and empathy
- Can bring comfort
- Can be a bridge for understanding



Anthropomorphism can bridge to distant topics

- Especially useful for topics more distant from our understanding
- Can be a way to uncover truths e.g. feeling pain
- Indicates condition and response in a way we understand



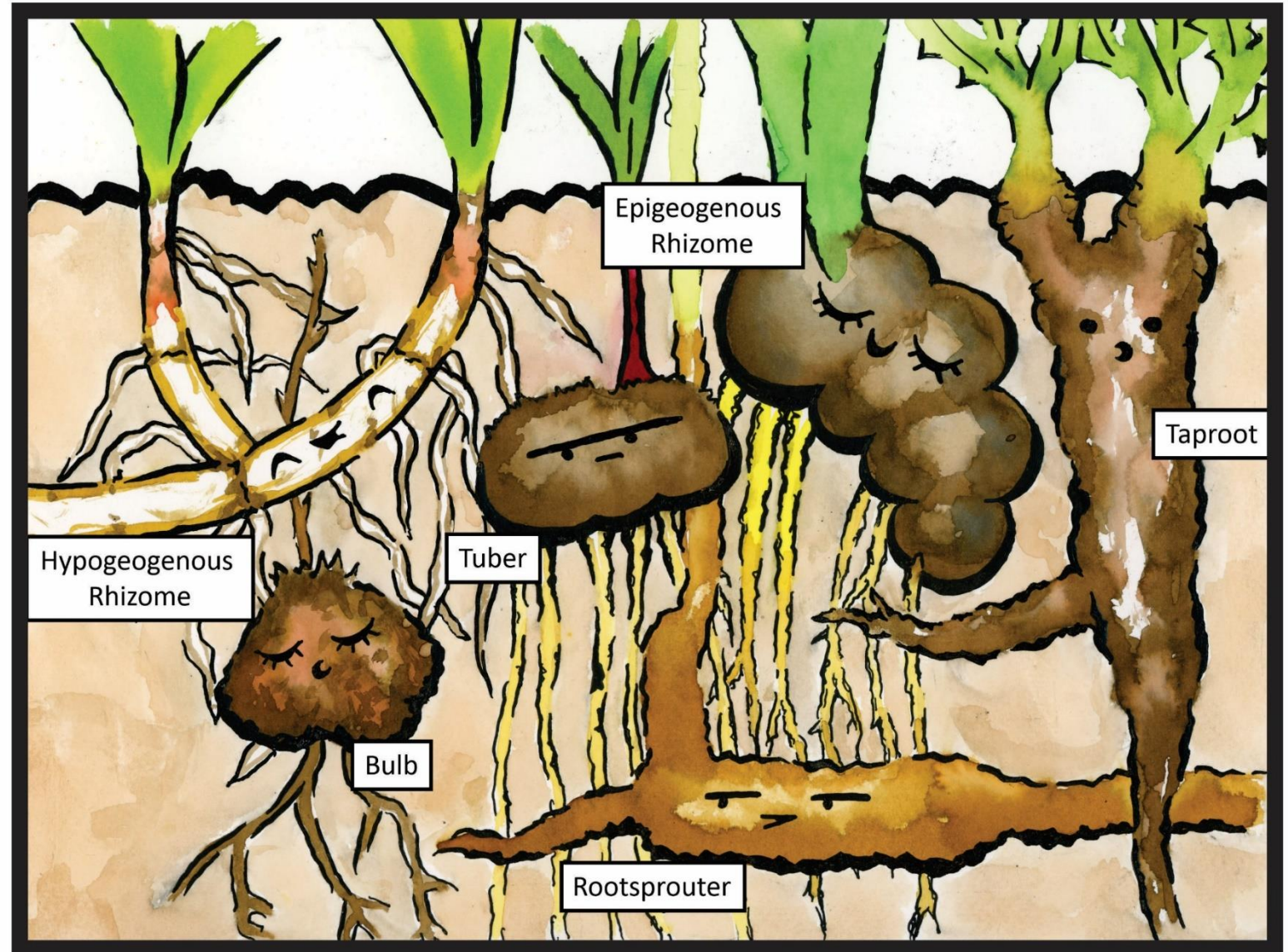
Figure 2. Personalising the stag beetle (source: London Wildlife Trust, undated).

Root-Bernstein et al. 2013

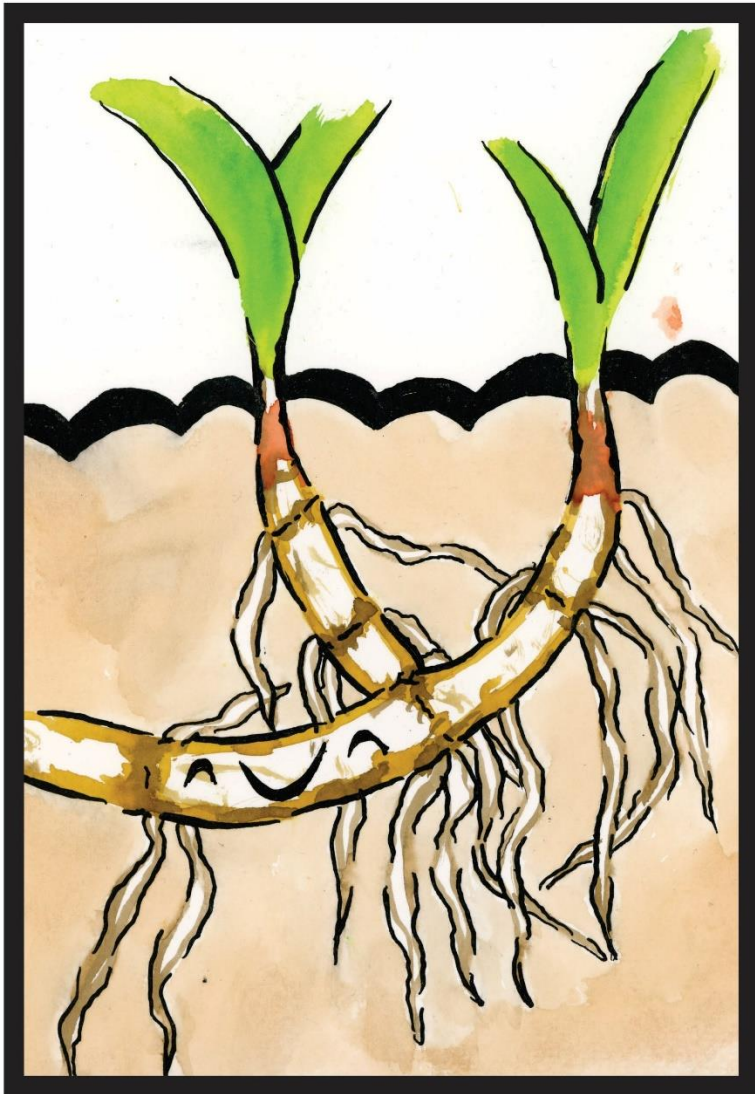
Narrative is another cute tool

- Increase understanding and retention
- Combination with anthropomorphism may aid in creating relatable characters

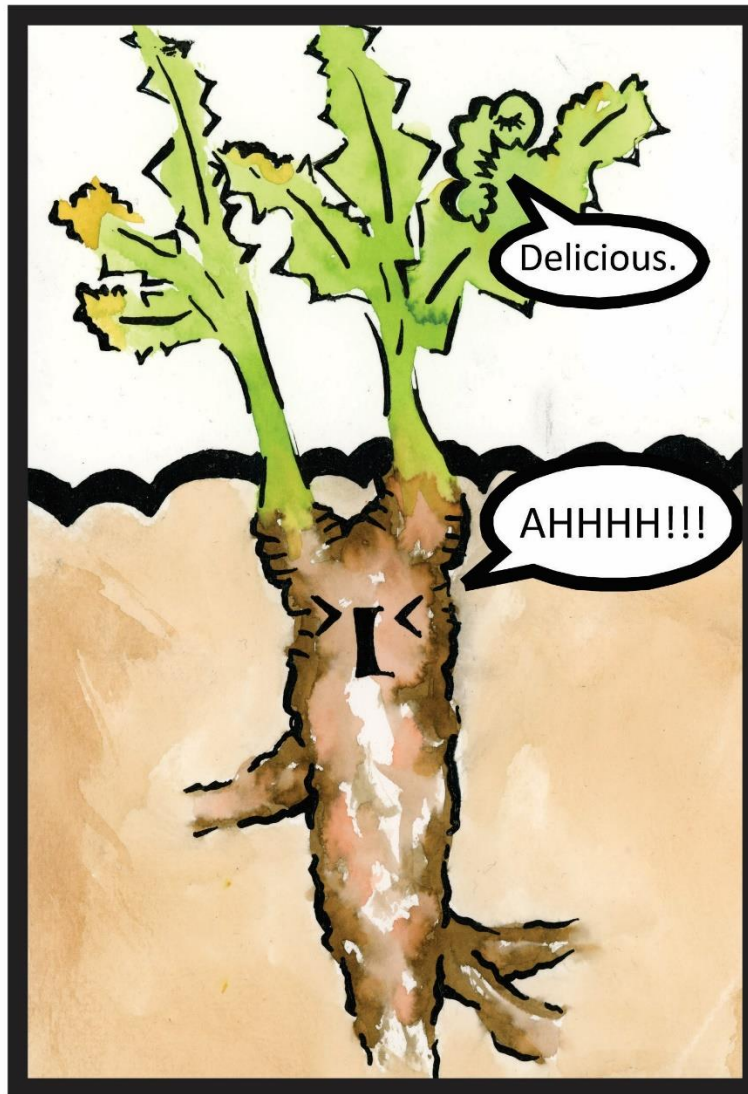
Negrete and Lartigue, 2004
Dahlstrom, 2014
Lin et al. 2015
Farinella 2018



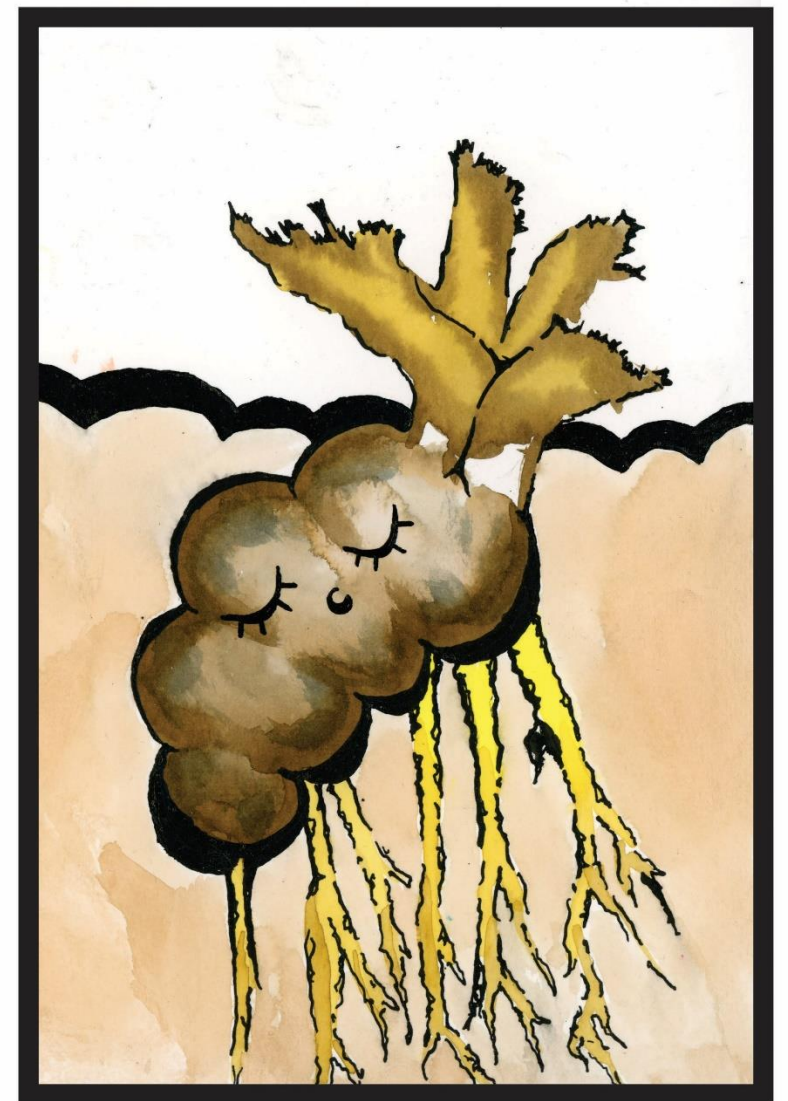
Lubbe, 2023, Plant Science Bulletin



Happy springtime



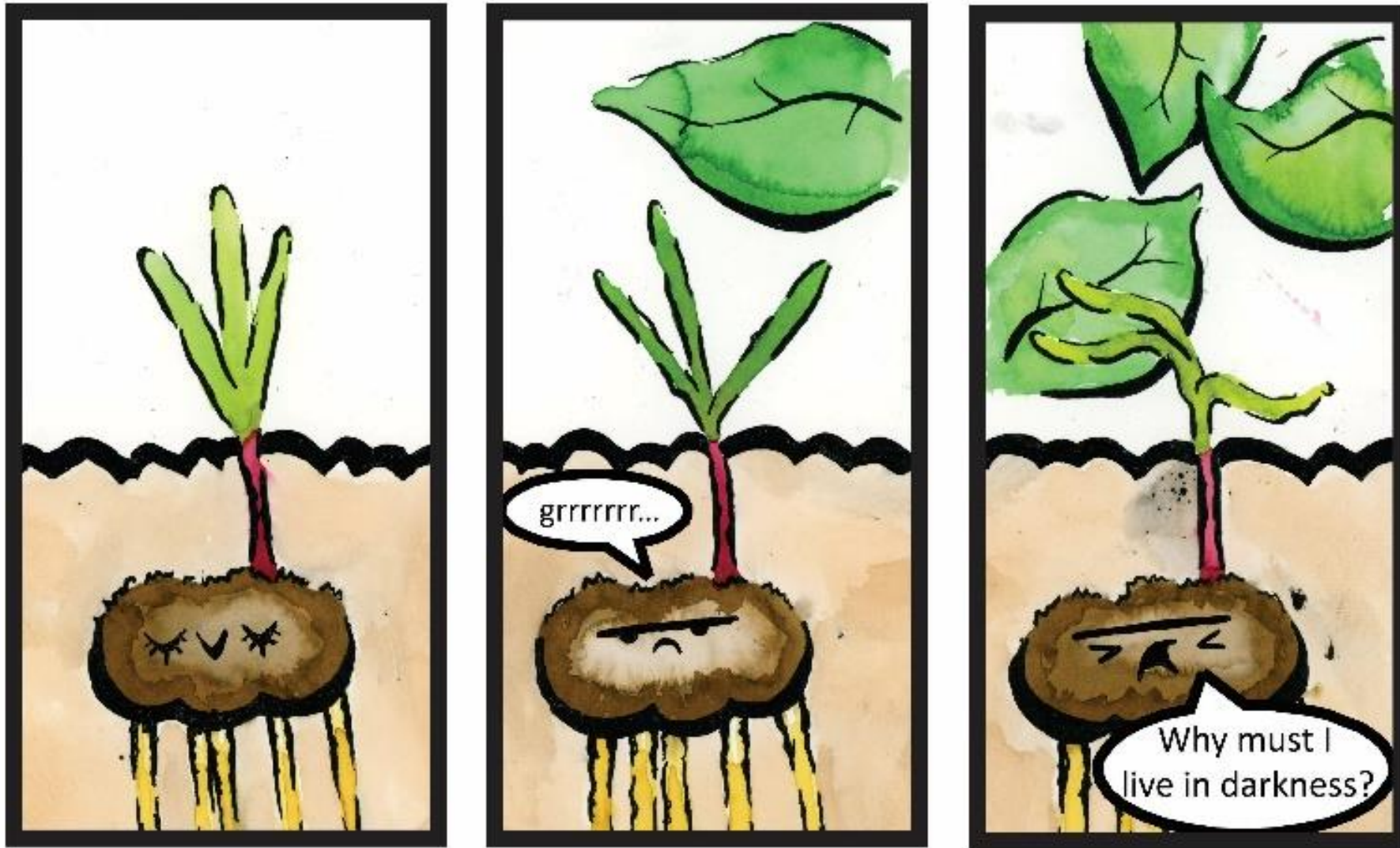
Frightening herbivore attack



Peaceful dormancy



The rootsprouter meets a shovel

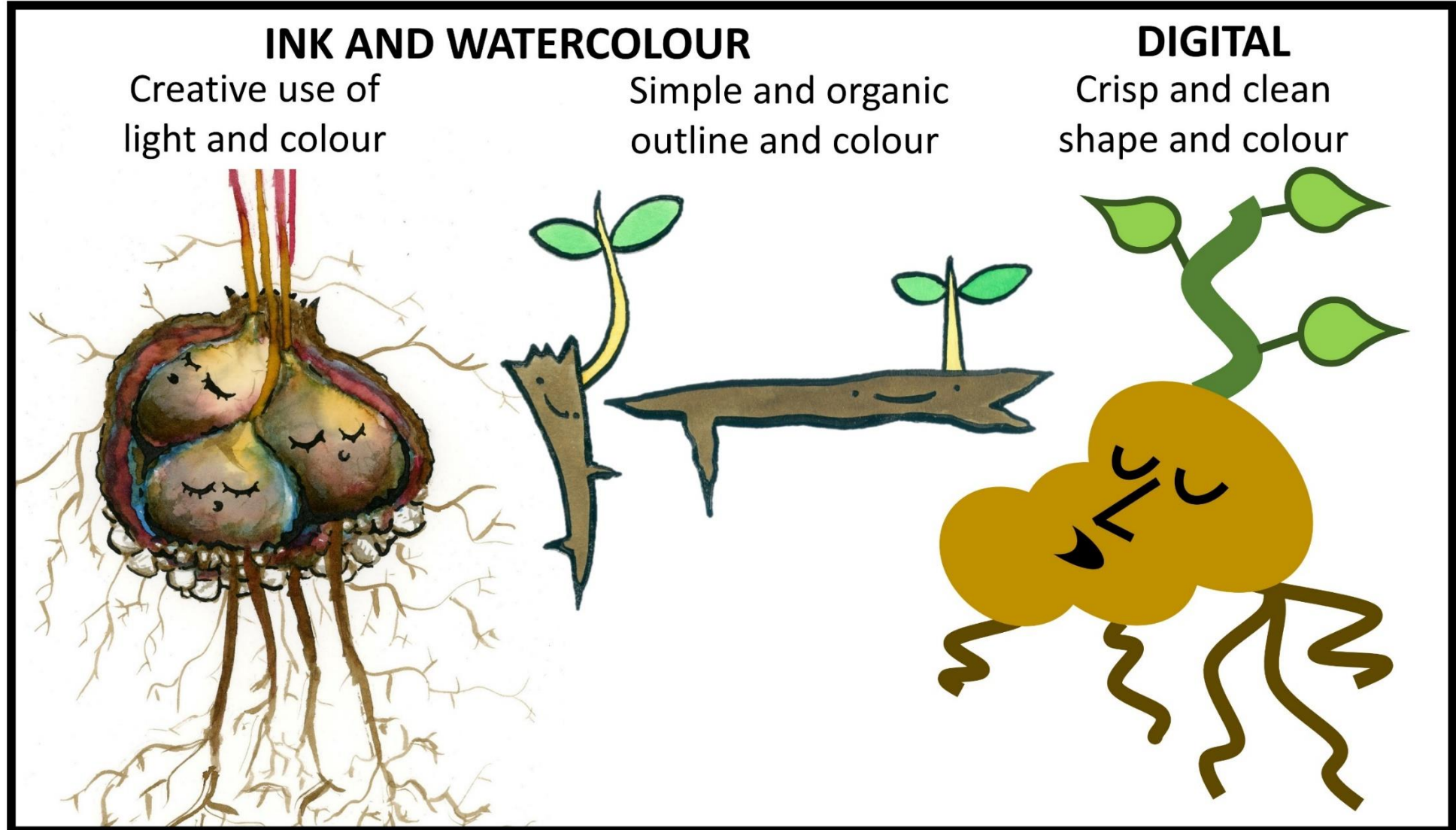


The tuber gets shaded by leaves

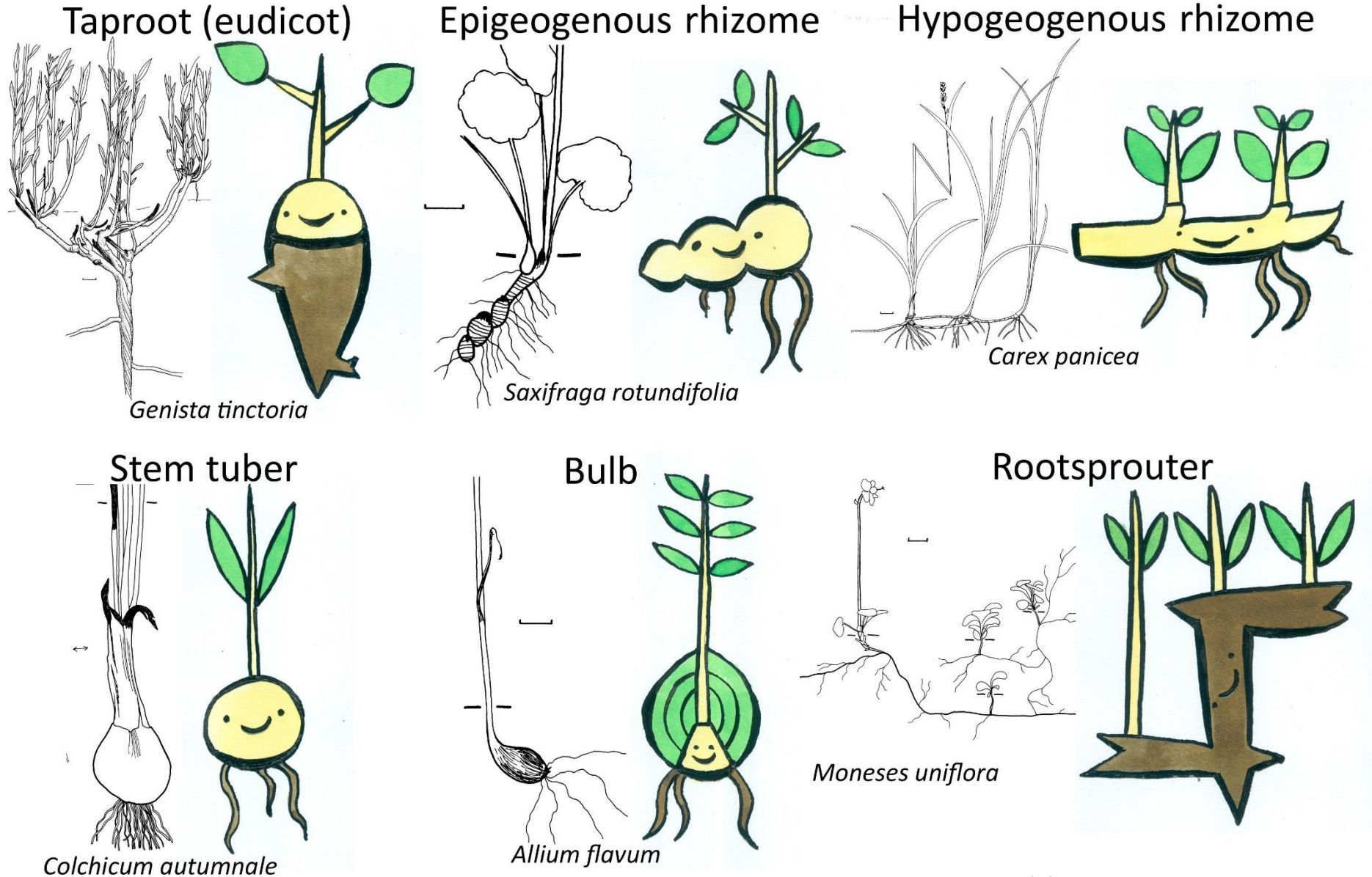


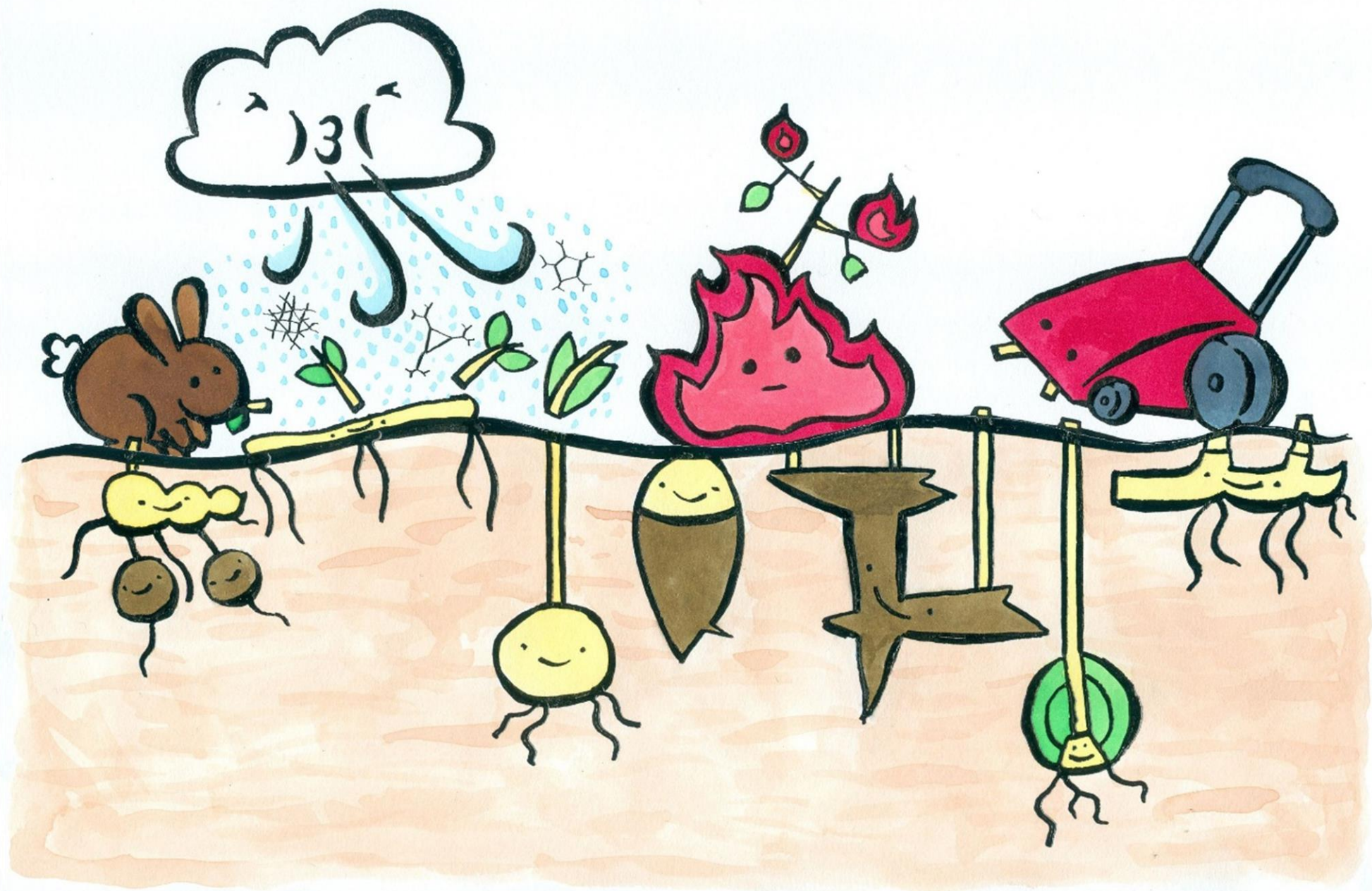
A year for the bulb

Cuteness comes in many shapes and styles

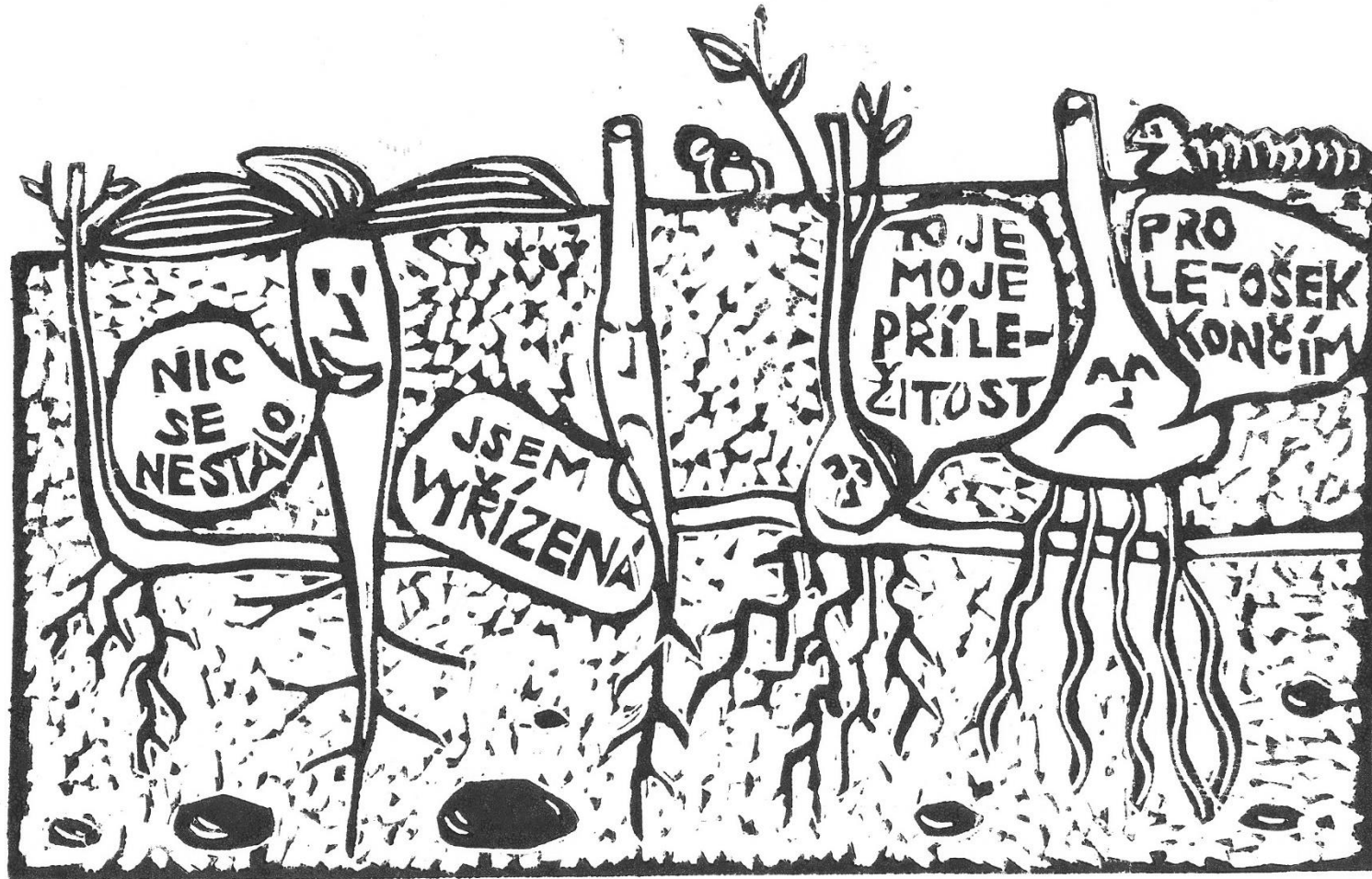


Example: Belowground storage organs



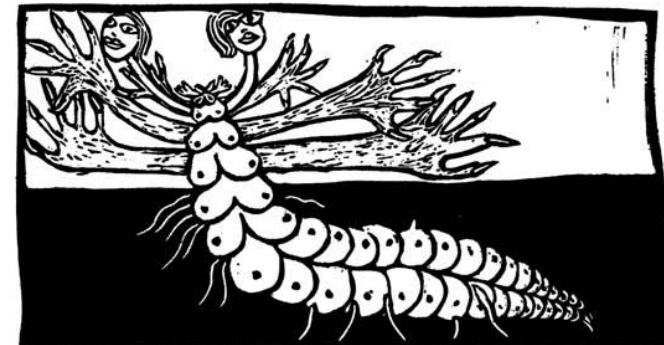
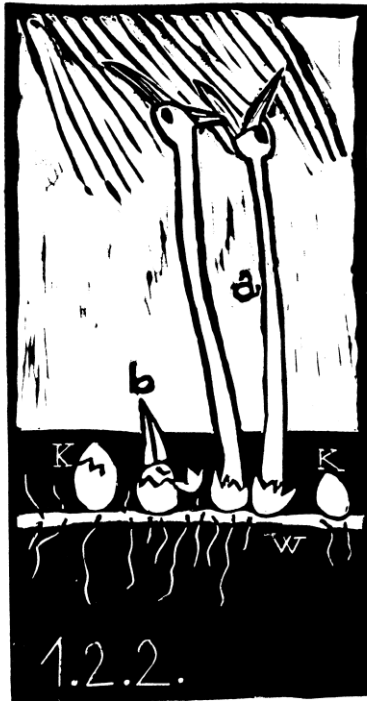


Same subject: different point of view

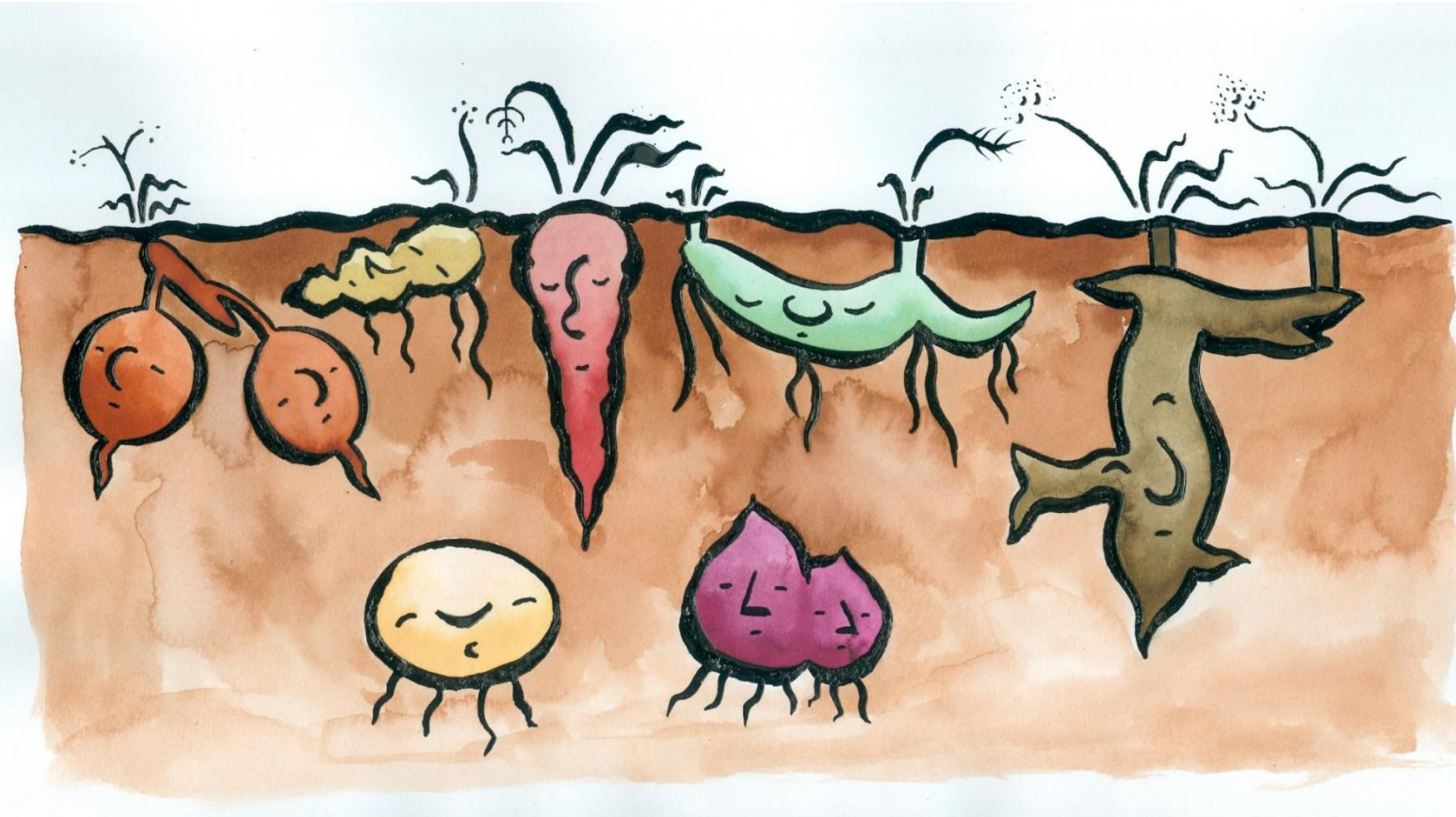


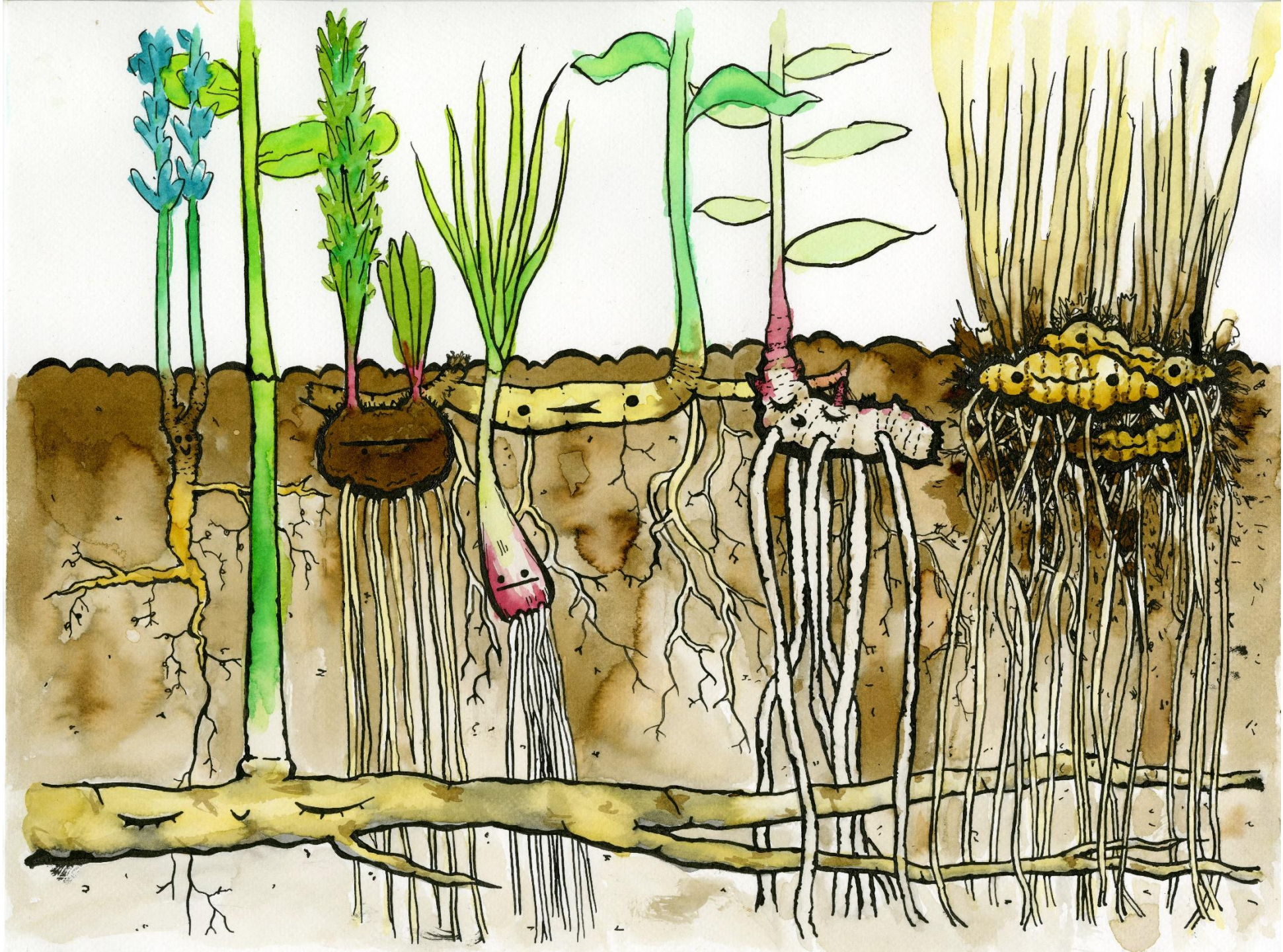
Jitka Klimešová

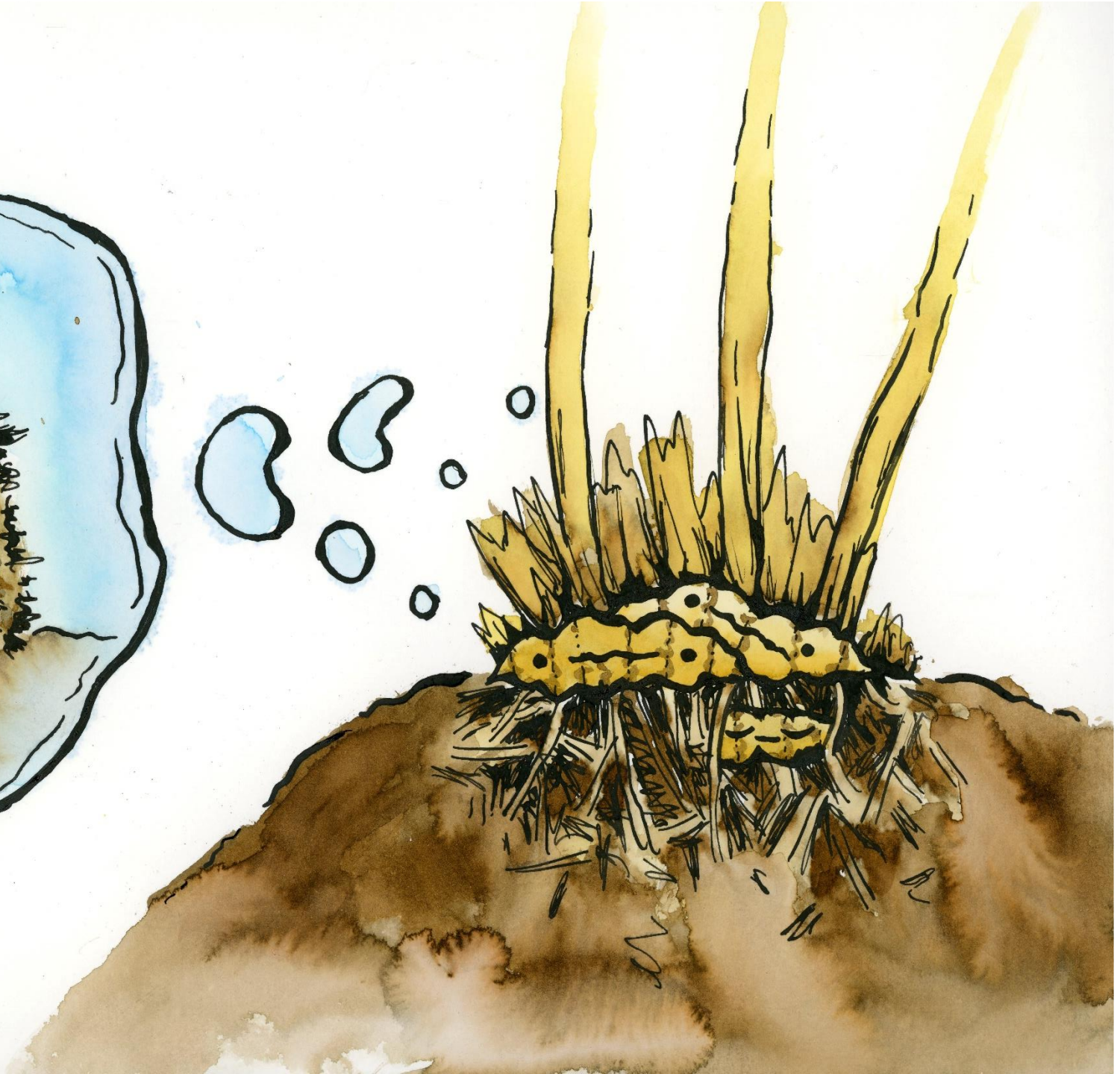
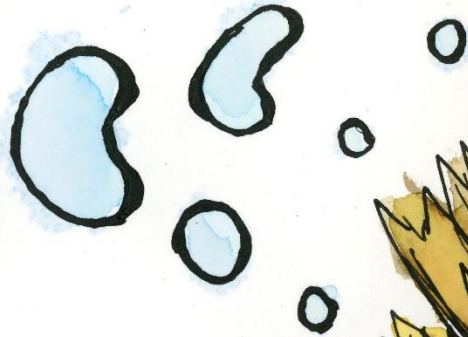
Jitka Klimešová

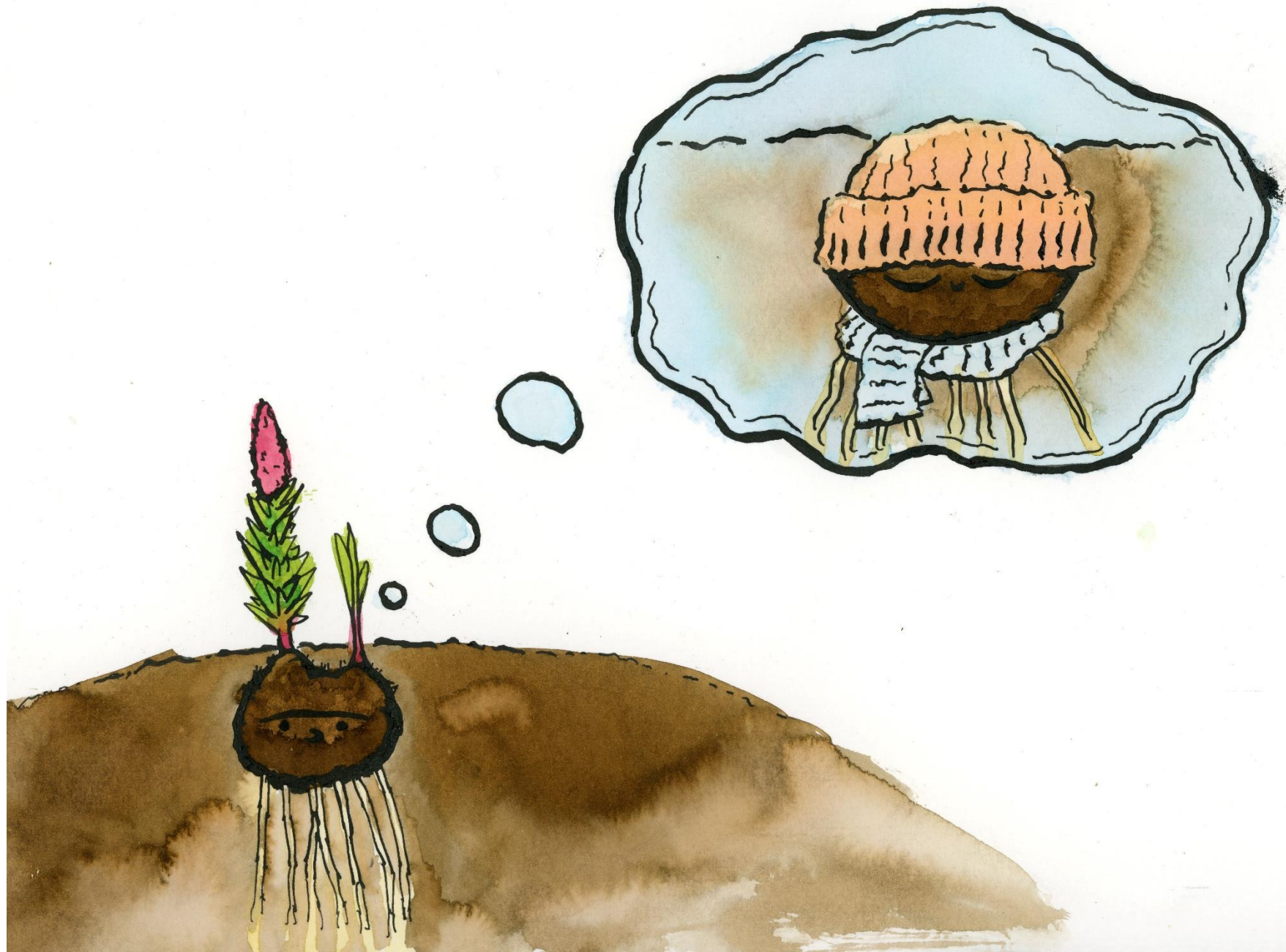


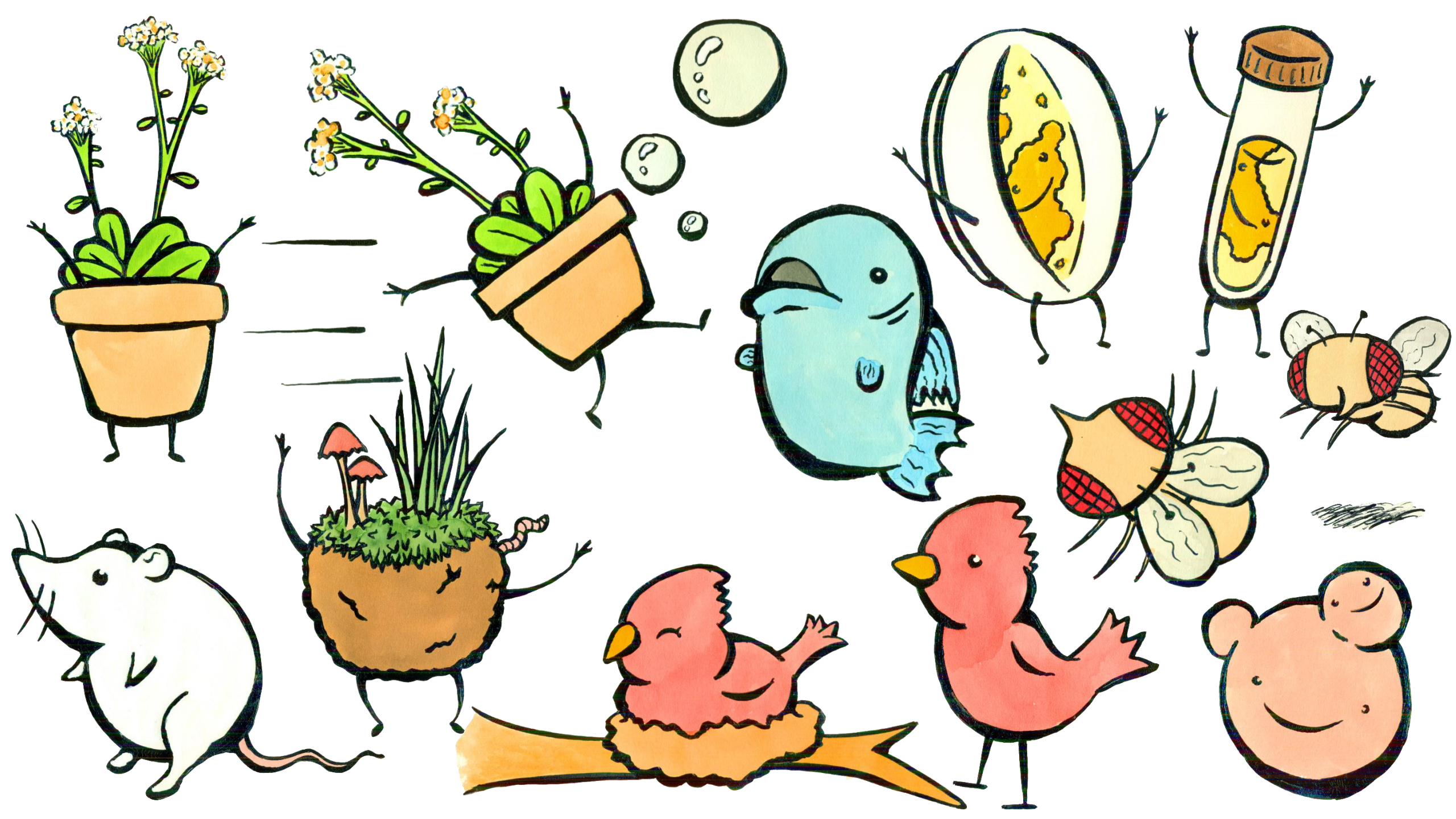
Other examples











Zásobujeme systém
rozpuštědly – tzv.
mobilní fází, která
ponese vzorek celým
systémem.

Ukřívám termostat
s kolonou, dávkovací
ventil a detektor,
kde detekuji
rozdělené cukry.

Jako pumpa poháním
mobilní fázi systémem.
Panečku to bude jízda!

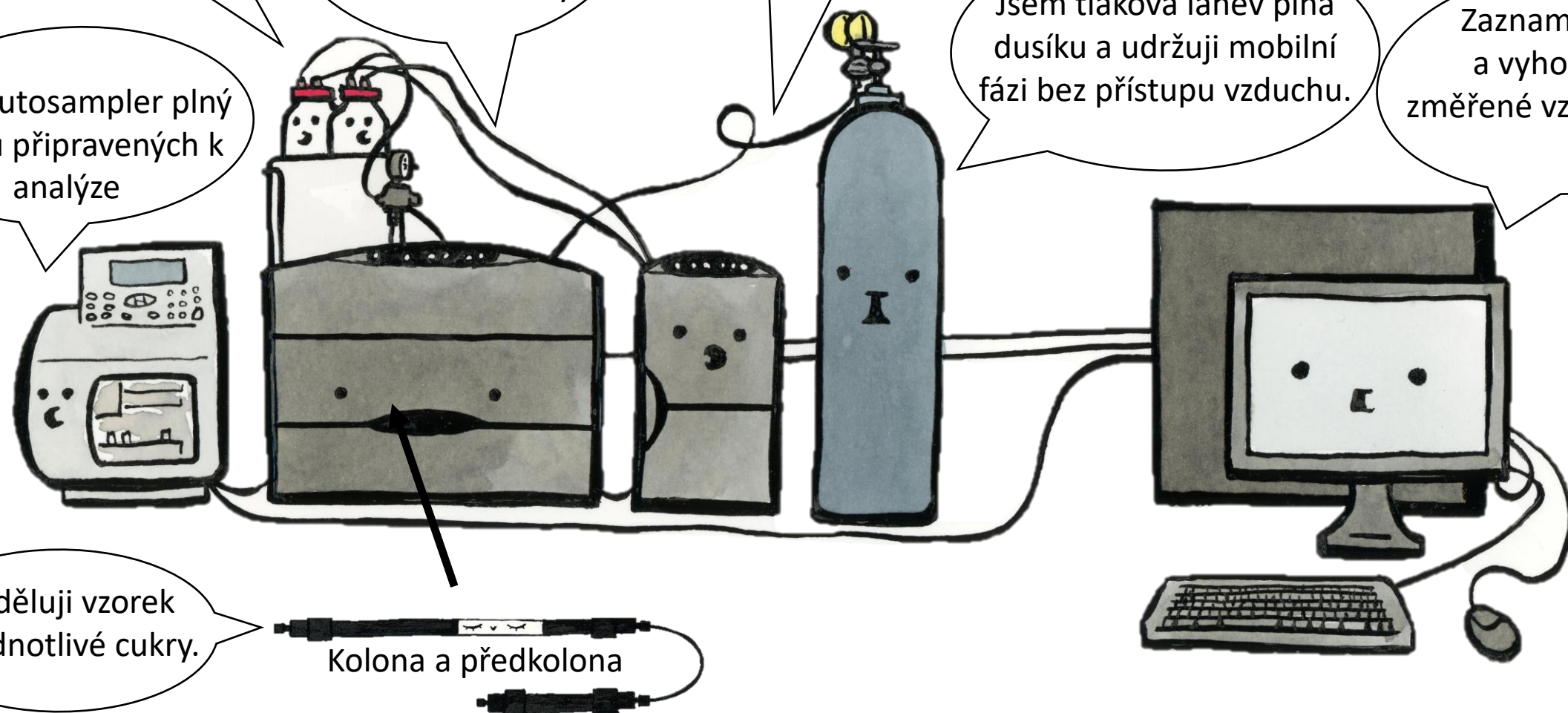
Jsem tlaková láhev plná
dusíku a udržuji mobilní
fázi bez přístupu vzduchu.

Zaznamenávám
a vyhodnocuji
změřené vzorky rostlin.

Jsem autosampler plný
vzorků připravených k
analýze

Rozdělují vzorek
na jednotlivé cukry.

Kolona a předkolona













Conclusion

- Images are complicated and powerful tools
- Cute imagery is commonplace, beloved, and a useful tool in science communication
- The use of creative and expressive imagery is a fun and useful way to make unique and memorable work for the communication of science

