

DIE KUNST VON VIDEO-ABSTRACTS

„Digitale Visualisierungskonzepte, Wissenschaft
sichtbar machen“; Referat eUniversity-Konzepte
Ludwig Maximilians Universität München

Workshop; 19.05.2017

Jeanine Reutemann

Research

Institute Aesthetic Practice & Theory
University of Applied Sciences And Arts Basel

From August 2017:
Centre for Innovation
Leiden University, The Netherlands

Science Educational Videos

Several Departments
ETH Zurich & EPFL Lausanne
Switzerland



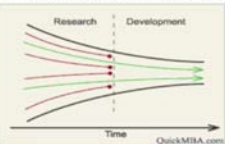
Preproduktion – Produktion – Postproduktion

Preproduktion – (Produktion) – Postproduktion

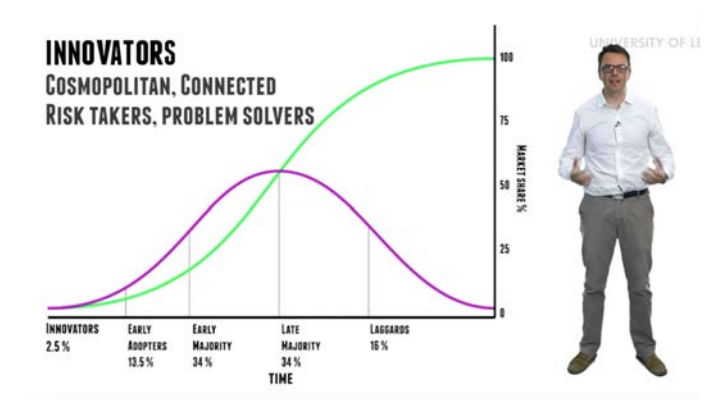
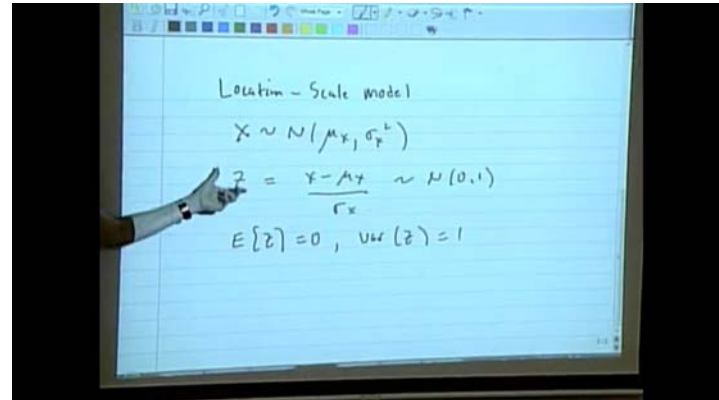
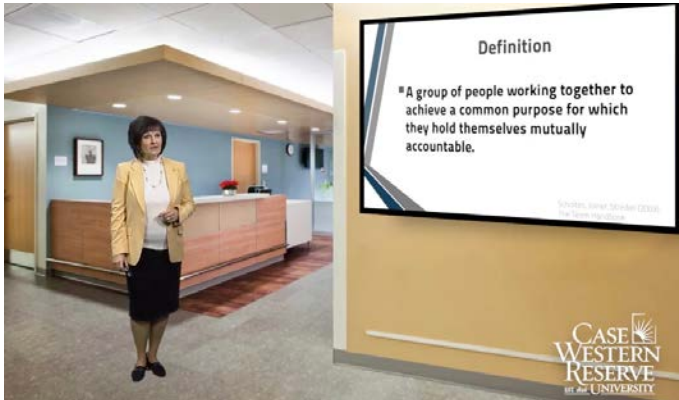
tech

Closed Innovation Model

- Recruit top talent for internal R&D
- Innovate only within firm's boundaries
- Filter internal ideas for defined market



Time QuickMBA.com

**Zielgruppe
Identifizieren**

**Master
Bachelor
Gymnasium
Lehrende
Peer-to-peer (enger Zirkel)
Peer-to-peer (weiter Zirkel)
Theorie zur Praxis
Populärwissenschaftlich
...**

Format

FullHD

4K

360°Videos

Interaktives Video

Video-with-Quizzes

Video-with-Annotation

...

**Kontextelle
Einbettung**

**Flipped Classroom
Plattform
Stand-alone video
Serielles Format
Publikation
Institutsseite
Moodle
MOOC**

**Produktionszeit /
Deadline**

**Zeitstruktur
Tasks
(vgl. Forschungsprojekt)**

**Budget /
Nachhaltigkeit**

**Kosten
Personelle Ressourcen
Technische Ressourcen
Jahre der Gültigkeit**

Rollenverteilung

Projektleitung

Kamera, Regie

Skript

Voice-Over

Postproduktion

Digitale Kommunikation:

Organisation /Work-flow

Achtung: Hierarchie Universität

Recherche

**Bildrecherche
Tonrecherche**

**Existierende Videos über
das Thema
Konkurrenzvideos
Creative Commons Material
Moodboard**

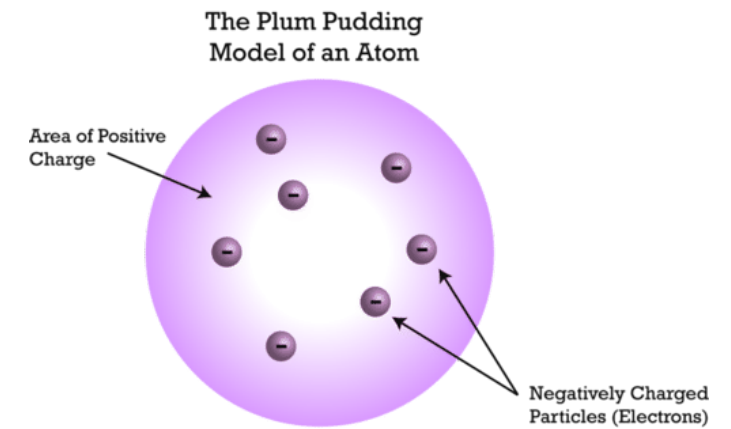
- 1. Zielgruppe**
- 2. Format / Länge**
- 3. Kontextuelle Einbettung**
- 4. Produktionszeit / Deadline**
- 5. Budget / Nachhaltigkeit**
- 6. Rollenverteilung**
- 7. Recherche**



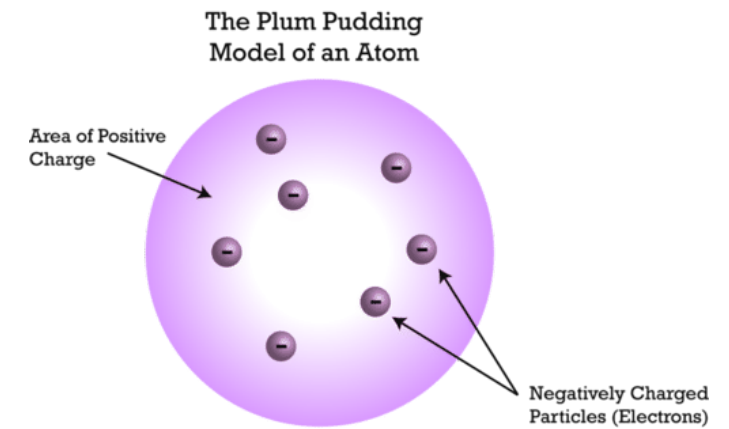
TRANSFORMATION / ALTERNIERUNG



TRANSFORMATION / ALTERNIERUNG



TRANSFORMATION / ALTERNIERUNG



TRANSFORMATION / ALTERNIERUNG

«Die Spannung zwischen [...] den Eigenschaften des Films als Medium der Repräsentation von Wissen und als Technologie der Produktion von Wissen sowie zwischen Evidenz und Manipulierbarkeit des filmischen Bildes [...] verweist auf das Problem, dass wissenschaftliches Wissen nicht einfach in Filme übersetzt werden kann, wie in andere Sprachen.»

DIRK VERDICCHIO: DAS PUBLIKUM DES LEBENS, 2015.

Mediale Eigenschaften von Bewegtbildern

1. Zeit/Raum

Mediale Eigenschaften von Bewegtbildern

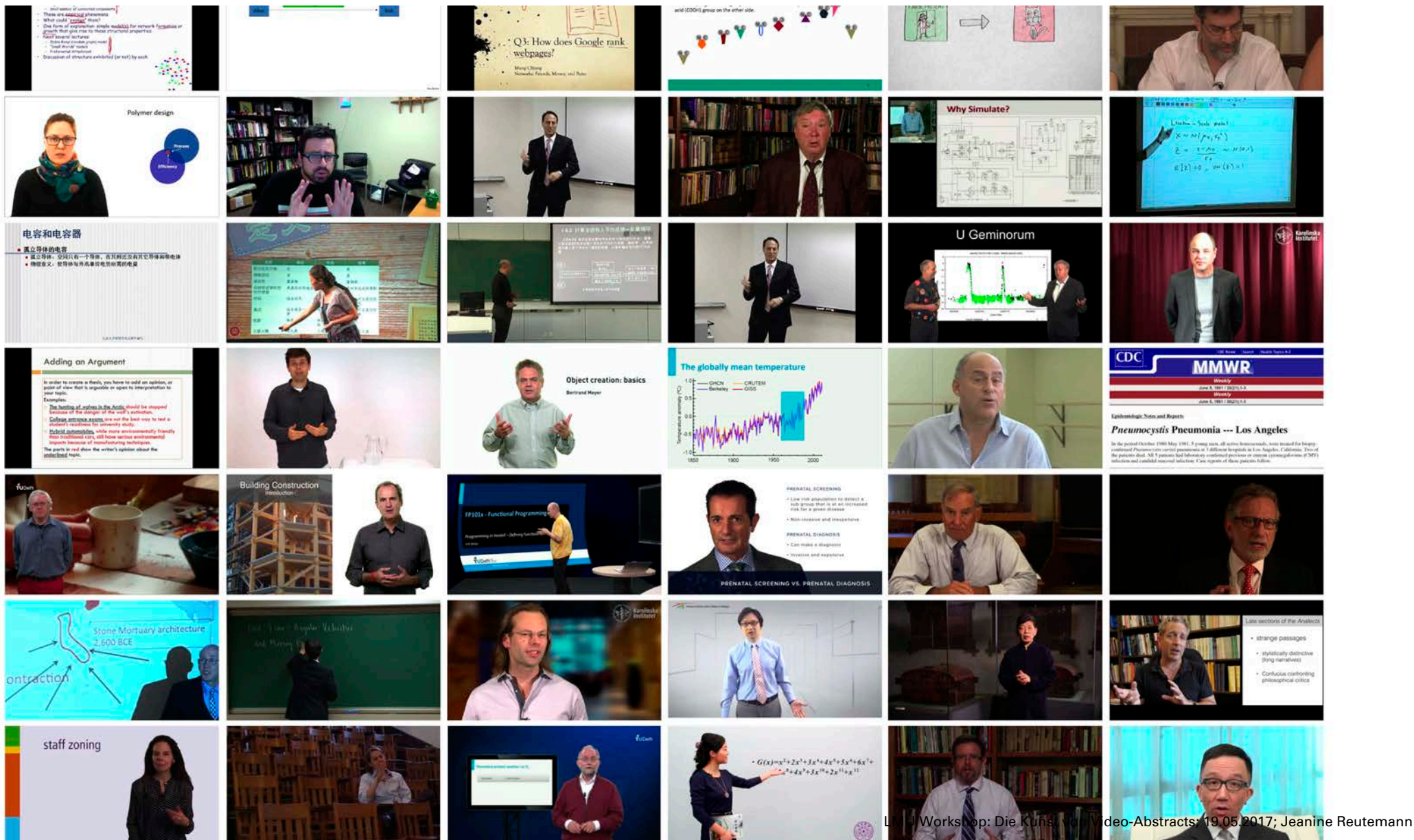
- 1. Zeit/Raum**
- 2. Visualisierung (+Sonifikation)**

Mediale Eigenschaften von Bewegtbildern

- 1. Zeit/Raum**
- 2. Visualisierung (+Sonifikation)**
- 3. Bild-Ton Interaktion**

Mediale Eigenschaften von Bewegtbildern

- 1. Zeit/Raum**
- 2. Visualisierung (+Sonifikation)**
- 3. Bild-Ton Interaktion**
- 4. Montage (Kontinuität; Narration)**



LU Workshop: Die Kunst der Video-Abstracts; 19.05.2017; Jeanine Reutemann

Wichtige Entscheidungskriterien

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- **Talking Head; Voice-Over > Rolle (Moderator; Lehrperson; Mentor; Allwissender; Vertreter der Wissenschaftsgemeinschaft; Experte)**

Protein basics

Outline:

- Polymers of amino acids
- Order specified by bases in mRNA
- Fold spontaneously into catalytic structures, driven by hydrophobic effects and hydrogen bonds

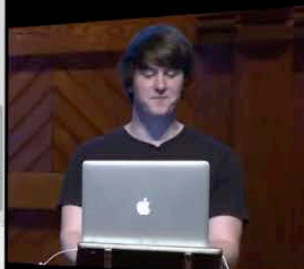
Learning Objectives:

- Describe protein 1° and 2° structure
- Relate to gene structure



2

```
ages.c (-src3m) - gedit
27 // declare array in which to store everyone's age
28 int ages[n];
29
30 // get everyone's age
31 for (int i = 0; i < n; i++)
32 {
33     printf("Age of person #i: ", i + 1);
34     ages[i] = GetInt();
35 }
36
37 // report everyone's age a year hence
38 printf("Time passes...\n");
39 for (int i = 0; i < n; i++)
40 {
41     printf("A year from now, person #i will be %i years old.\n", i + 1, ages[i] + 1);
42 }
```



What Does Scalable Mean?

- Operationally:
 - In the past: "Works even if data doesn't fit in main memory"
 - Now: "Can make use of 1000s of cheap computers"
- Algorithmically:
 - In the past: If you have N data items, you must do no more than N^n operations -- "polynomial time algorithms"
 - Now: If you have N data items, you must do no more than $N^{m/k}$ operations, for some large k
 - Polynomial-time algorithms must be parallelized
 - Soon: If you have N data items, you should do no more than $N \cdot \log(N)$ operations
 - As data sizes go up, you may only get one pass at the data
 - The data is streaming — you better make that one pass count
 - Ex: Large Synoptic Survey Telescope (30TB / night)



Principles of Electrical Circuits

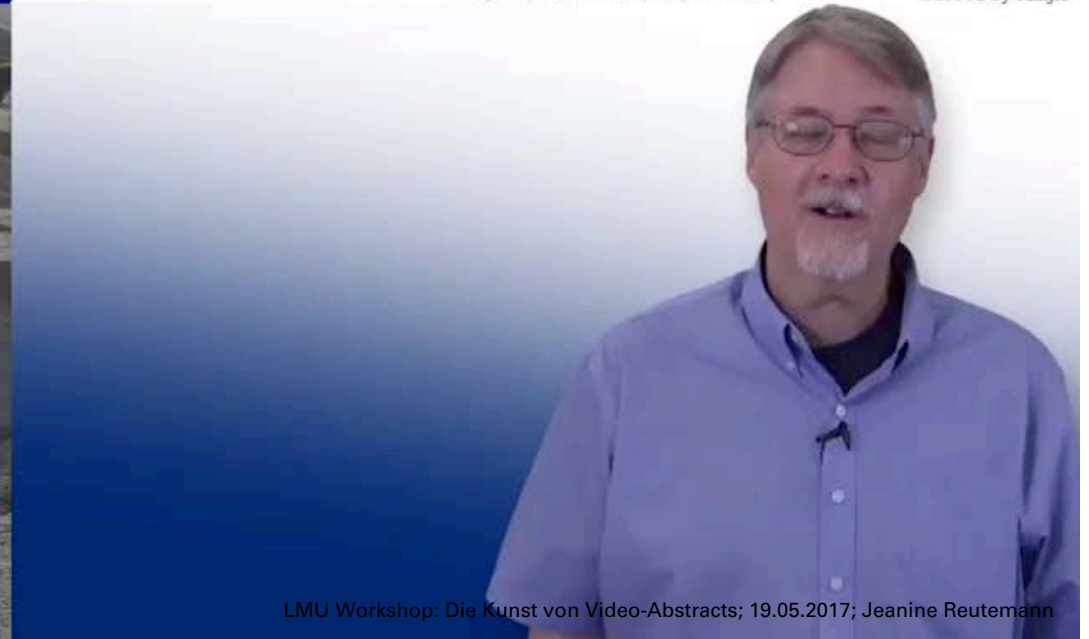
L18 Operational Amplifier

Operational Amplifier Op Amp



Principles of Electric Circuits by Tsinghua University

presented by Guip
dubbed by Xinjie





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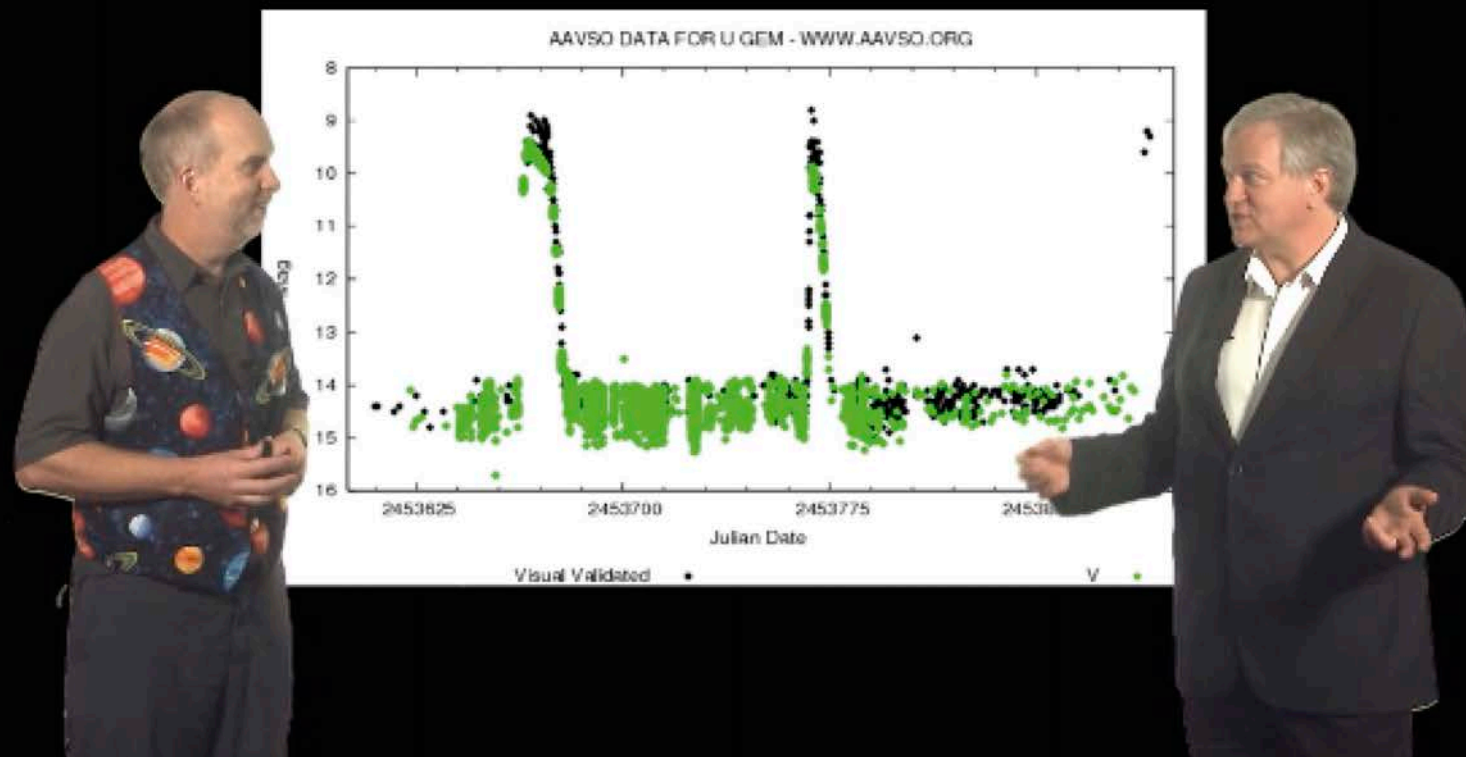
HINTERGRÜNDE

Artefakte > Bedeutungsgenerierung

The Land Ethic Reclaimed: Perceptive Hunting, Aldo Leopold, and Conservation, University of Wisconsin–Madison US



U Geminorum



Introduction to Philosophy: God, Knowledge and Consciousness, MIT US

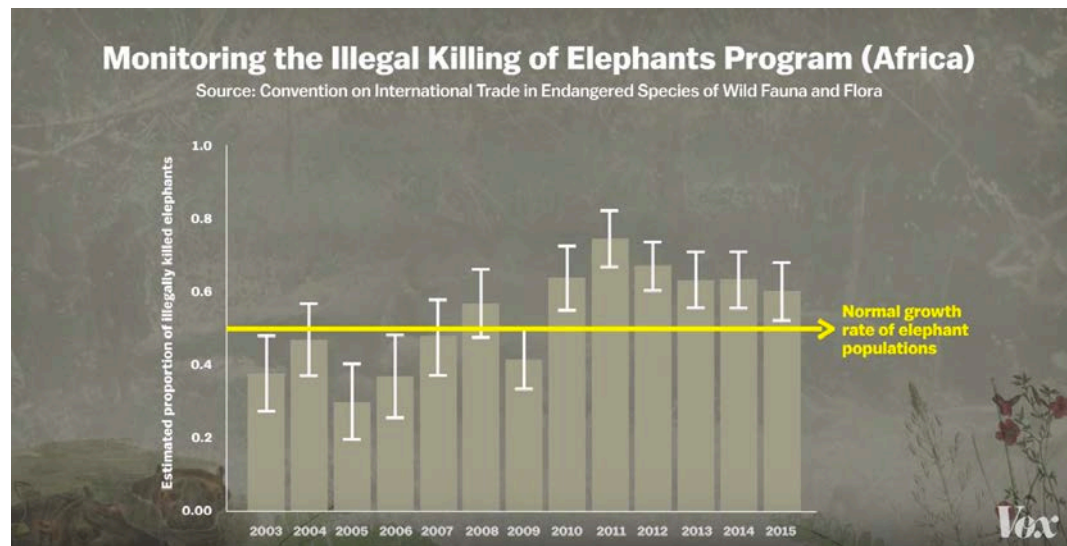
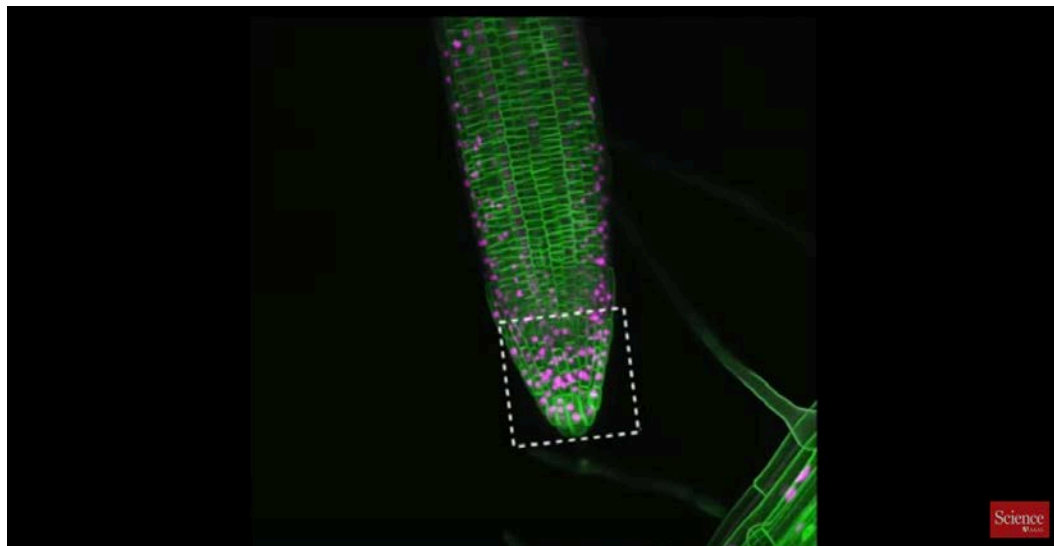
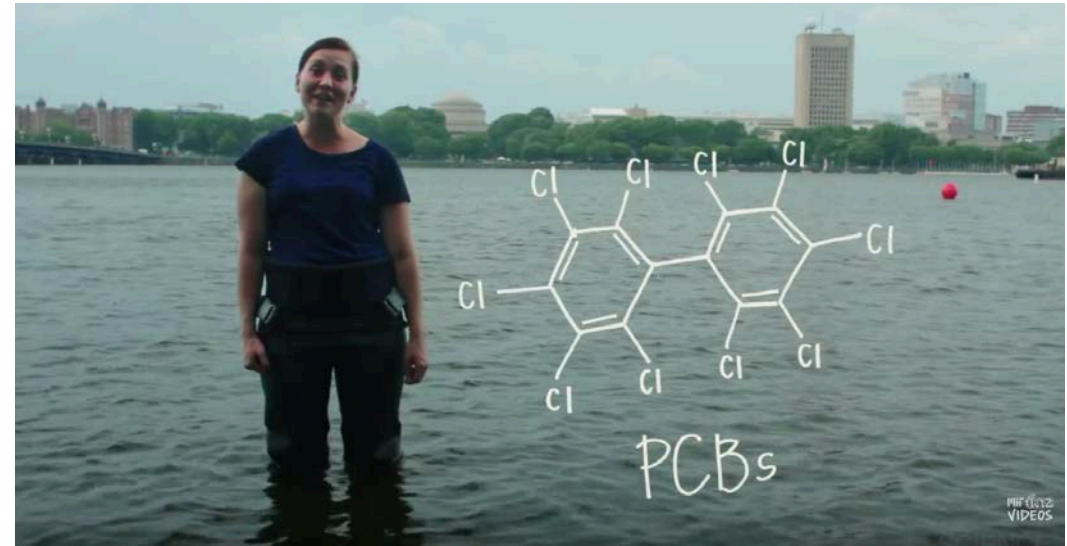






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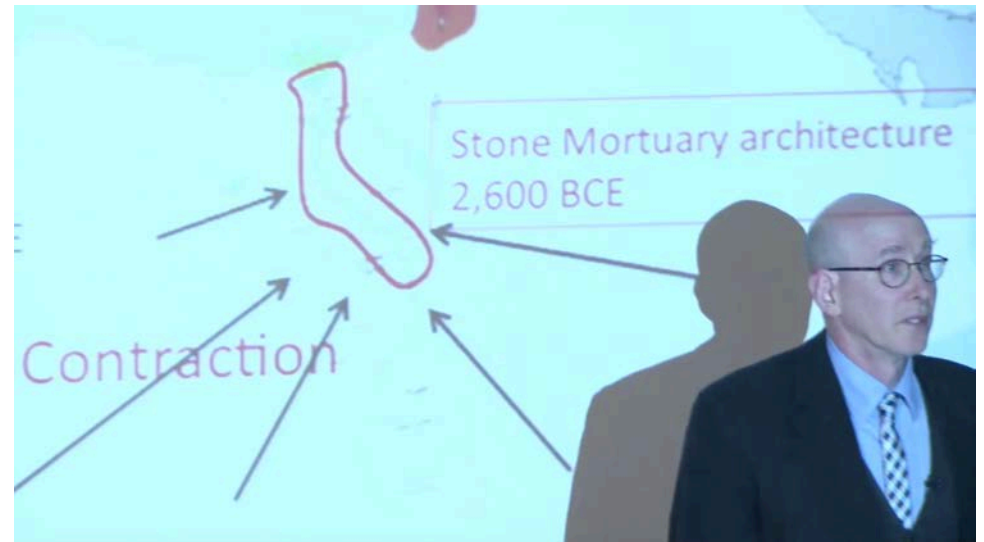


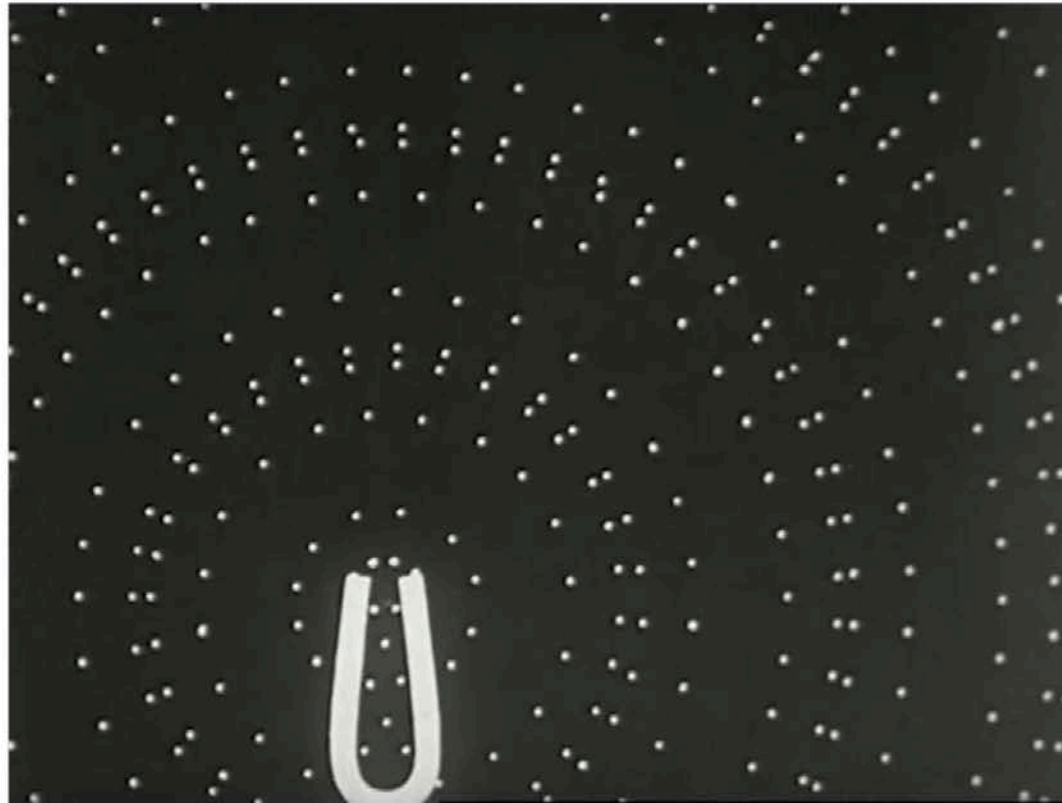
Bildästhetik

Differenz im Material

Isolierung in Frame in Frame;

Wenn auffällig: dieses unterstützen und hervorheben.





1936

"Teaching with sound films", Encyclopaedia Britannica Films Inc., CC licence Public Domain Mark 1.0, accessed on archive.org.

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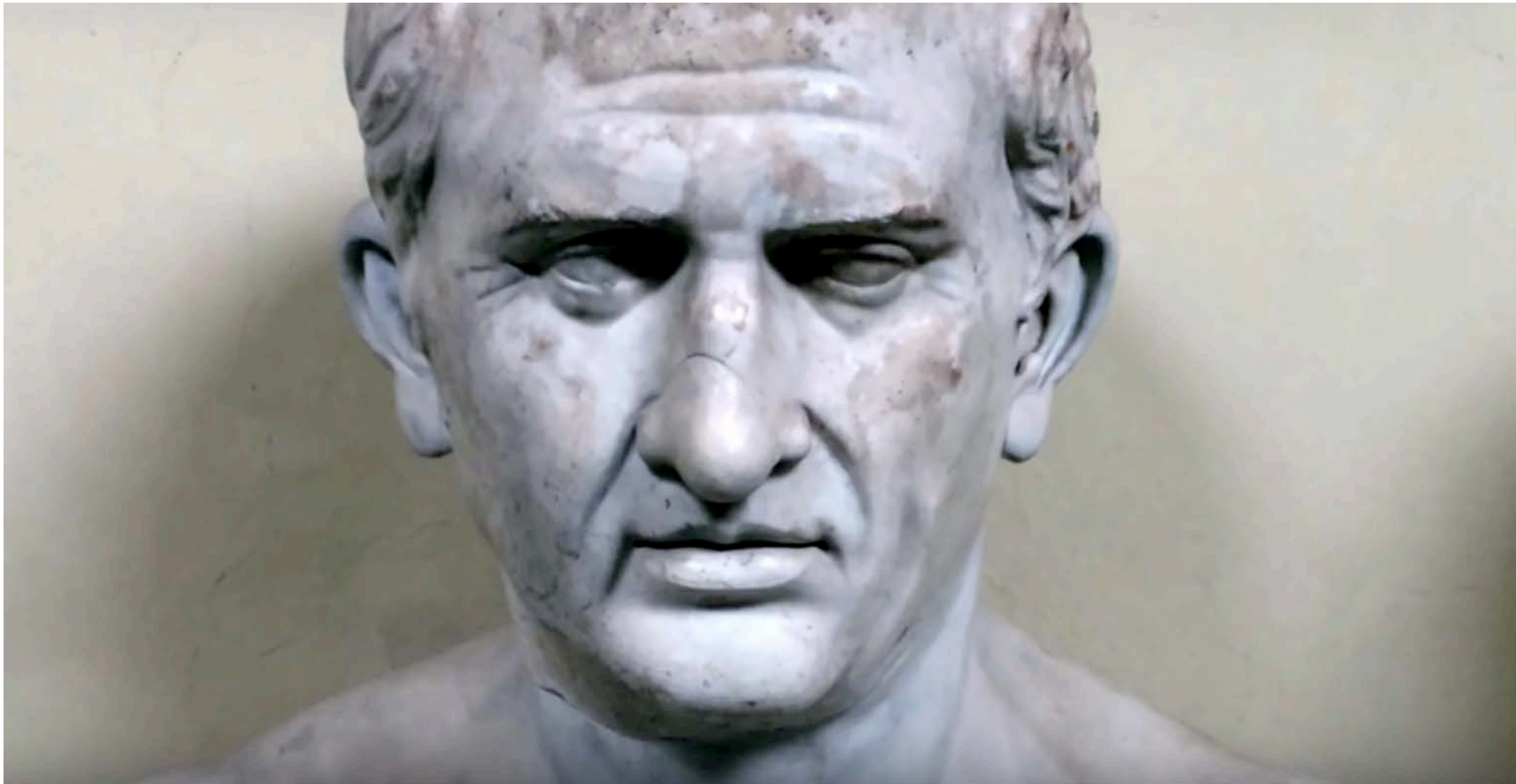
Bildästhetik

Integration von Fotografien

Week 3, Lecture Video	edX	Coursera	Futurelearn	Iiversity
Classroom with students	12%	7%	0%	0%
Classroom without students	7%	4%	10%	14%
Presentation slides with speaker	26%	46%	3%	36%
Presentation slides without speaker	30%	48%	22%	27%
Computer screen, high-lightening	33%	32%	9%	27%
Green-screen	35%	25%	10%	22%
Talking Head (summary)	78%	68%	81%	91%
- Talking Head / Monochrome Background	27%	31%	12%	27%
- Talking Head / Book Shelf	10%	10%	2%	23%
Animation	19%	21%	19%	18%
Split-screen	13%	14%	4%	5%
Outdoor (unrelated to content)	9%	5%	31%	5%
On location (related to content)	22%	20%	22%	9%
Webcam Capture	7%	12%	0%	9%
Several speakers	16%	9%	29%	18%
Off-voice speaker	12%	15%	30%	9%

Bildästhetik

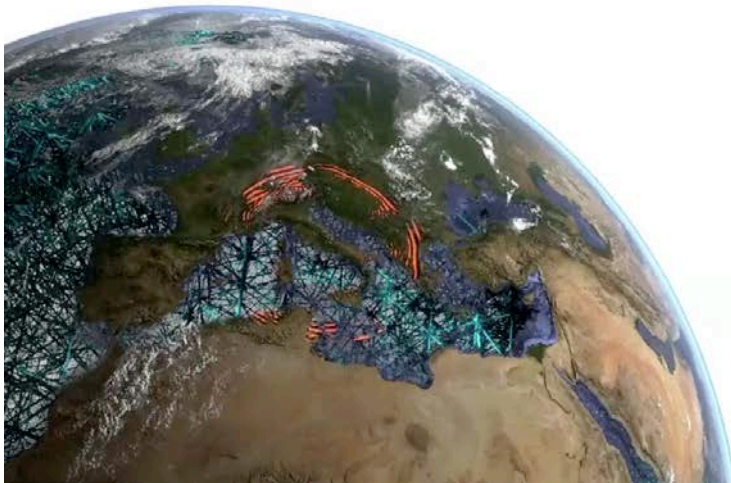
Integration von Fotografien



Bildästhetik

Einbettung von wissenschaftlichen Visualisierungen

Week 1: The Acoustic Wave Equation



Waves, Simulations, Computers

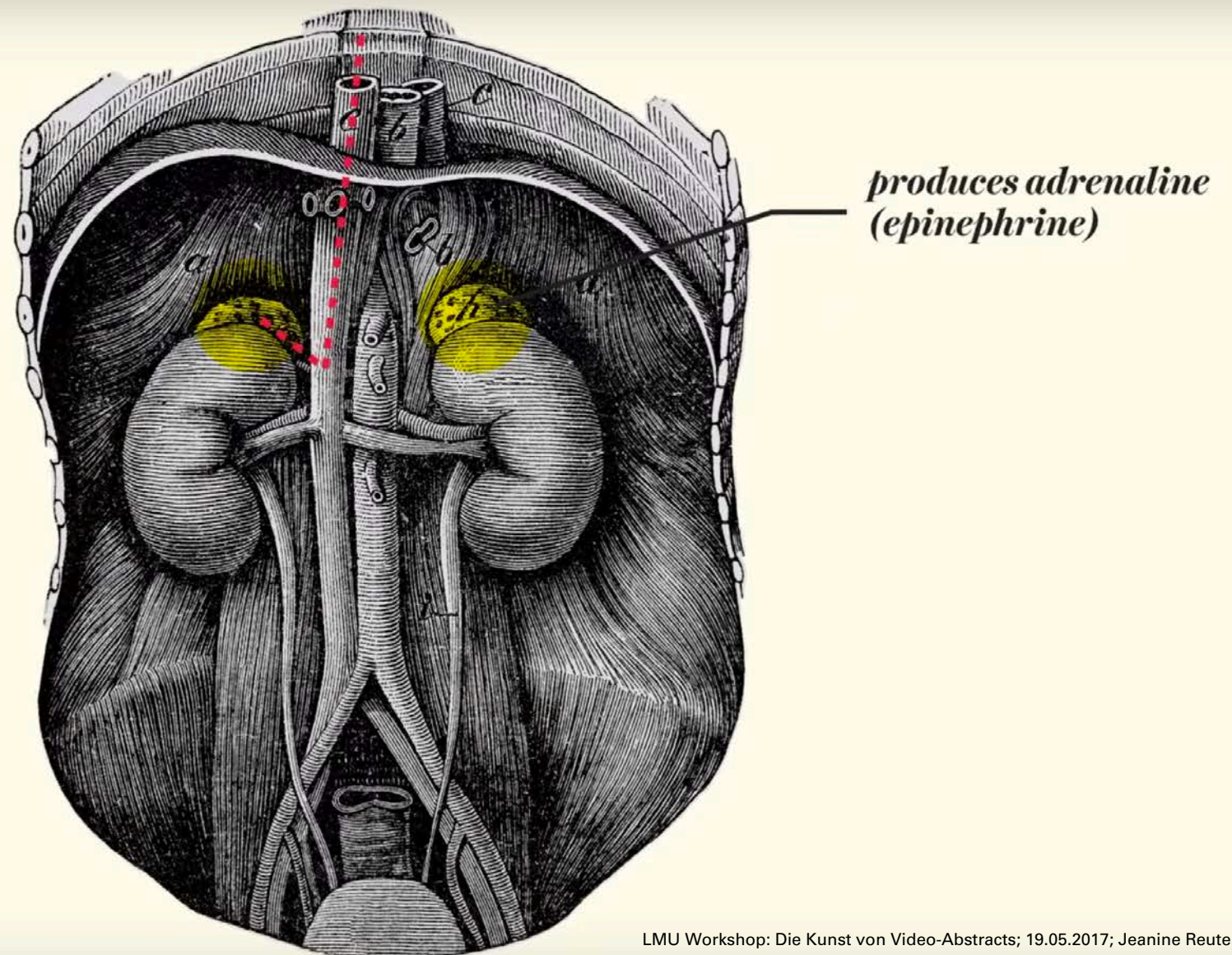
An introduction to numerical methods

Prof. Dr. Heiner Igel
Ludwig-Maximilians-University Munich



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Bildästhetik



Bildästhetik



HARVARD
UNIVERSITY



ETH *zürich*

Bildästhetik

Grid-System (bestenfalls bereits Teil von sichtbaren Wörtern)



ETH zürich

HARVARD
UNIVERSITY



Bildästhetik

Achtung! Hierarchie des Layouts



Bildästhetik

Zusammengehörigkeit von Bildern
Gestalt-Psychologie: Nähe



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- **Skript / Kein Skript (AbleSEN, Teleprompter, frei, voice-over)**

Skript

- 1. Wer schreibt es?**
- 2. Wer spricht (performt) es?**
> Editierung

An old lineage of wolf is found in the high-altitude ecosystems of the Himalayas and the Tibetan Plateau.

The Himalayan wolf has been roaming the vast landscapes of Central Asia for more than 800 thousand years.

Genetically this wolf lineage is distinct from the Grey wolf found across Europe and North America.

It is an elusive wolf that is perfectly adapted to its barren habitat.

Its coat helps it to resist the cold temperatures. It is of whitish brown colour which helps it to blend in with the landscape. But also black wolves can be found.

These wolves share their habitat with a specialized high-altitude wildlife community.

The social life of Himalayan wolves is characterized by life in small packs which often consist of a family group.

Wolf packs found in Nepal consisted of 5 wolves on average, including two adults and three pups.

The wolves communicate by howling, by scent marking with urine and faeces, and by body language. Here the female greets the male who just returned from a hunt.

Himalayan wolf pups in Nepal are born in the spring months of April and May. They spend the first weeks of their life in an inconspicuous den. This den is usually a cave such as an expanded marmot burrow or a rock crevice. The den provides essential protection to the pups during the early stage of their life.

Expanding from their den site, the wolf pups keep exploring the world around them.

At times they meet other species, such as this young Himalayan marmot. At this particular instance the wolf pups and the young marmot just look at each other. For now they remain innocent to the ecological interaction they will have when grown up.

Werhahn Werhahn

Less emphasis on the „and“ here and more flowing.

Werhahn Werhahn

Less emphasis on the o on the word „Marmot“.

Finance Track - Track Video Script v4

SEQ. F1 - TRACK COACH FULL EXPLANATION

INTERIOR. STUDIO. - ARTIFICIAL LIGHT

The TRACK COACH stands up speaking to the camera. Neutral background.

[TRACK COACH]: "Corporations shape progress towards sustainability through their investment decisions. Finance has thus become a powerful force in building sustainability.

In the finance track, you will think about corporate sustainability from the perspective of an investment advisor. Investors can be a powerful driver of corporate sustainability. But how do they think, and how do they decide?"

[TRACK COACH]: "Your main task will be to think through the pros and cons of different approaches to sustainable investing from the individual and institutional perspectives.

In the finance track, students first evaluate, for example, the advantages and disadvantages of investment decisions on controversial issues such as fossil fuel divestments. Based on this exercise, students extend their analysis scope and recommend a comprehensive sustainable investment strategy for equity investments."

[TRACK COACH]: "As the final outcome, you will produce a video outlining your team's recommendations on how a controversial issue should be reflected in a large firm's investment approach."

Insert here SEQ. F2 showing STUDENT ONE explaining the investment decisions taken in its team.

[TRACK COACH]: "The finance track is the right track for you if you wonder what happens with your money once you

[TRACK COACH]: "The finance track will allow you to think critically over controversial investment decisions that can shape today's and tomorrow's corporate sustainability."

This sequence is a backup in case the following sequences cannot be properly filmed or they are considered of insufficient quality. This can also serve as the video narrator by editing this sequence.

SEQ. F2 - STUDENT INTERVIEW INVESTMENT DECISION

INTERIOR. STUDIO. - ARTIFICIAL LIGHT

STUDENT ONE speaks to camera. Neutral background.

[STUDENT ONE]: "(Talking about its team's investment decisions)"

Record two or more students, according to time availability.

SEQ. F3 - STUDENT INTERVIEW ON TRACK PROFILE

INTERIOR. STUDIO. - ARTIFICIAL LIGHT

STUDENT TWO speaks to camera. Neutral background.

[STUDENT ONE]: "The finance track is the right track for you if you wonder what happens with your money once you deposit it in your bank account; or if you have experience or want to work in finance; or if you simply want to try how a video can be used as a very powerful channel to convey your ideas."

Record two or more students, according to time availability.

SEQ. FX - STUDENT TESTIMONY

EXTERIOR. ETHZ CAMPUS. - DAYLIGHT

STUDENT TEST. Stands up while talking to the camera with a neutral background such as the ETHZ main building.

Over-Voice | Narration for Scotland video

INTRO

The iconic landscapes of the Scottish Highlands are a magnet for tourists from around the world. They come to see what has been referred to as Europe's last great wilderness. The land is wild, but it is not wilderness. To claim that it is, is to betray the long history of management of the land and its occupation by people of many cultures and origins over past millennia.

Before Williams

The modern landscape reflects this history, as do aspirations for its future management. These aspirations differ among the people and communities of Scotland, and of the Highlands in particular. Conservationists look back at Scotland's remote past and reflect on ancient Caledonian pine forests that has been denuded and lost over the ages. Their vision for the Highlands is one in which native woodlands are restored, (not spoken but written: and are once more a haven for wild cat, white-tailed eagles, and other native wildlife).

Before Nicholson

Others recognise the need to grow and diversify the Highland economy to benefit local communities. (not spoken but written: Investment is needed in tourism, commercial forestry, renewable energy generation, and farming.) Yet commercial forestry relies on exotic timber species which have less value for wildlife, while the infrastructure of energy generation does not blend well with the wild landscapes within which they are situated.

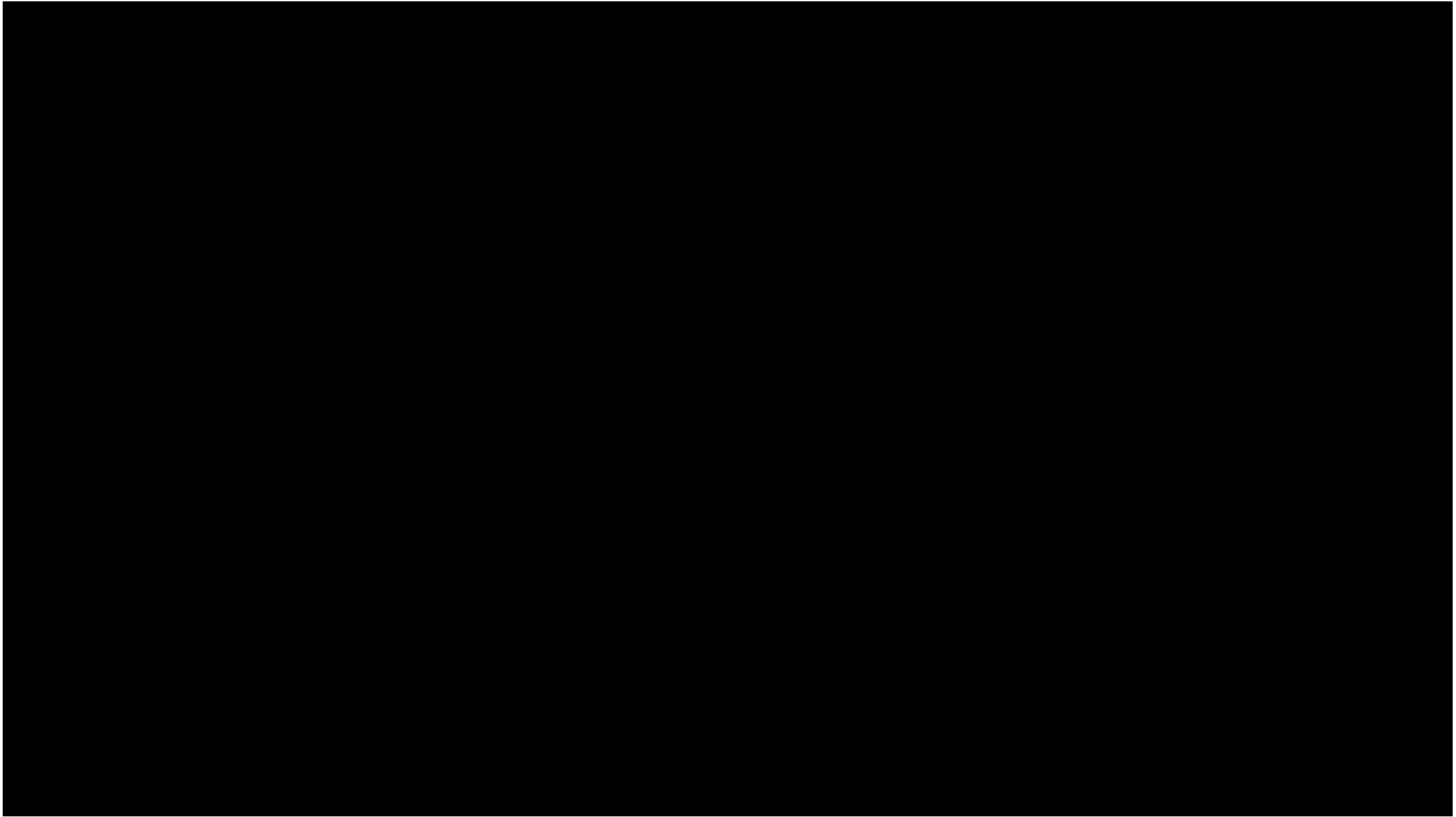
Before Mackinnon

Crofting is a traditional small-scale farming system unique to the Highlands. It is also a way of life that previously bound kinds communities together through shared labour and experiences. (not

TELEPROMPTERS AND GESTURES

„Whether or not somebody is reading from a prompter you can tell from the eyes and face but also if somebody is not really thinking and saying, I think it also shows up in gestural communication as well. If you are just reading, you're not going to gesture.“ Sotaro Kita 2015

„And the research has shown that the people saying memorized text tend not to gesture very much, but people who are actually thinking and speaking at the same time, tend to produce more gestures. *ibid.*



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- **Skript / Kein Skript (AbleSEN, Teleprompter, frei, voice-over)**
- **Produktionsplan (Serielle Formate)**

	Duration	Topic Content	Images	Speaker	Sound Design Music	Montage	Didactics / Pedagogical Elements	Message / Notice	Equipment / Props	Approx. Production Effort / Hours
Video 1.1										
Video 1.2										
Video 1.3										
Video 1.4										
Video 1.5										
Total Amount of minutes:		Weekly Assignment								
		LMU Workshop: Die Kunst von Video-Abstracts; 19.05.2017; Jeanine Reutemann								

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- **Produktionsplan (Serielle Formate)**
- **Storyboard > Planung der Aufnahmen**

Storyboard

Video 1.
Project Tit

Approx. duration of Video: min
Locations: (Studio, On-location, Library, Outdoors)
Number of different scenes:

' (sec)	Scene 1	' (sec)	Scene 2	' (sec)	Scene 3	' (sec)	Scene 4
Content / Text:		Content / Text:		Content / Text:		Content / Text:	
Surrounding Space / Props:		Surrounding Space / Props:		Surrounding Space / Props:		Surrounding Space / Props:	
Other sounds:		Other sounds:		Other sounds:		Other sounds:	
' (sec)	Scene 5	' (sec)	Scene 6	' (sec)	Scene 6	' (sec)	Scene 8
Content / Text:		Content / Text:		Content / Text:		Content / Text:	
Surrounding Space / Props:		Surrounding Space / Props:		Surrounding Space / Props:		Surrounding Space / Props:	
Other sounds:		Other sounds:		Other sounds:		Other sounds:	
' (sec)	Scene 9	(sec)	Scene 10	' (sec)	Scene 11	' (sec)	Scene 12

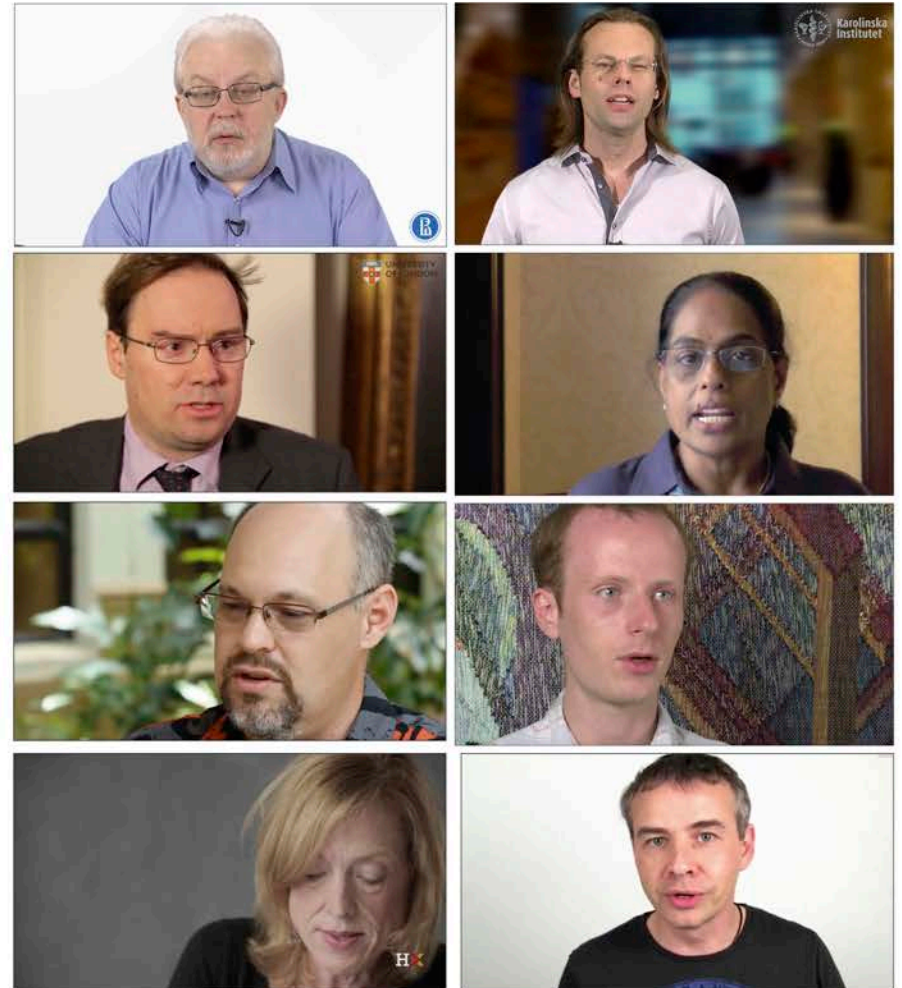
Connection to the weekly assignment:

Notice:

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- **Storyboard > Planung der Aufnahmen!**
- **Technisches Equipment**

- **interpersonelle Distanz**
- **Charakteristik des Sprechers**
- **Einstellungsgrösse**
- **Technologische Aspekte (4)**
- **Kameralinse**









Stilelemente

- **on-location / on-site**
- **animation (2d-3d, Stop-Motion)**
- **hyper-video (in-video-quizzes)**
- **interactive storytelling**
- **expert talks**
- **documentary**
- **statements and project descriptions**
- **Info graphics**
- **VR-Desktop 360° Video (passiv or active)**
- **VR Animation**
- **screencapture**
- **greenscreen**
- **webcam**
- **video-in-video**
- **splitscreen**
- **...**

5 mediale Prinzipien

1. Wissenskörper

Re-Formatierung des Textes;
Auffächern; Verdichten & Verflechten;
Kontexte; Adaption; visuelle Argumente;

2. Strukturelle Logik und Tiefenverständnis

Grundregelwerk von Bewegtbildern,
Epistemisches Instrument; Intrinsisches
Wissen; Kombinatorik medialer Elemente;

3. Rhetorik

Performanz von Sprechern; Bild-Ton
Rhetorik; Visuelle Inszenierung;
Ambiguität von Bildern;

4. Lineare Zeit – Spannungsbogen

Storytelling; Narration; Zeit-Raum
Element; Rhythmus;

5 mediale Prinzipien

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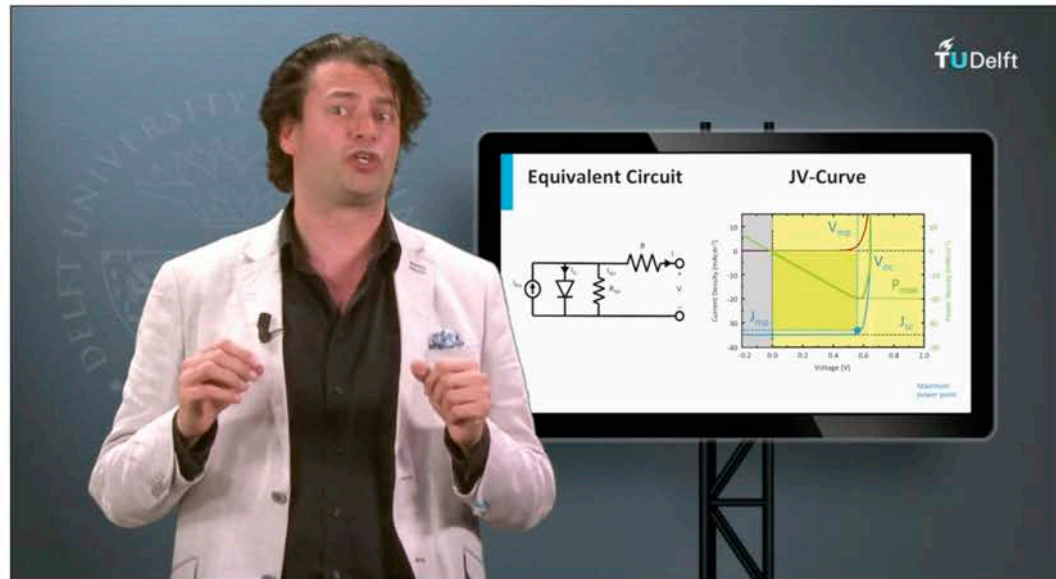
Storytelling; Narration; Zeit-Raum
Element; Rhythmus;

5. Playification

Experimentieren; Flow;
nicht intentionales Spielen;

- (1) The life cycle – Linear, Geburt bis Tod**
- (2) The Search Narrative – Explorer**
- (3) The Triumph of Science over Nature:
Naturgewalten, Technologieentwicklung**

THEMA DISZIPLIN SPRECHER



Short inputs for experts, trainers, educators for Talking Head formats

- (1) Be the master of the topic: speak & think at the same time – deeply understand the content that you're talking about. Practice to read from tele prompter or let it be. Reflect on your use of gestures, facial expressions > HD towards 4K**
- (2) Expertise: What is your 'unique selling point' in educational training?**
- (3) Don't try to be perfect. If you have a role model of a speaker (e.g. moderator, other educator, scientist) analyze step by step and with accuracy on how they perform in front of the camera. Adapt strategies, but avoid copying.**
- (4) Design an audiovisual narration with didactical elements for the content (preferably in collaboration with experts).**
- (5) Never forget: This videos will be out there in the world - and stays there; coloring the perception about you as an expert as you're publications or work results do.**

Short inputs on video design for blended learning

(1) Avoid 1:1 translations and copy-paste; use the 'affordances' of the media. There is no 'one-style-fits-all' approach to video design for blended learning. Decision on design implementation includes criterias such as 'stability of content', 'high demand', 'flexibility - reuse in different contexts'.

(2) Don't spam the e-world (market spoilers). Look for the e-component and non-e-component for multimedia communication, sociocultural: recognizing of media quality > create a 'learning experience'

(3) General rule to frame speaker types: The perfect setting for one expert might be miserable for another. The closer the framing the bigger the facial expressions and bodily movements – design the range and surrounding space for different speaker types: authenticity - authorship - authority

(4) Create a friendly atmosphere: Almost every person freaks out when standing in an empty studio room. Create security with (power pose) mobilier, thematic objects, different light settings. Give honest feedback on the performance of experts > avoid hierarchical structures in the production team (e.g. PhD Student - Professor), create inter- & transdisciplinary teams include audiovisual expert.

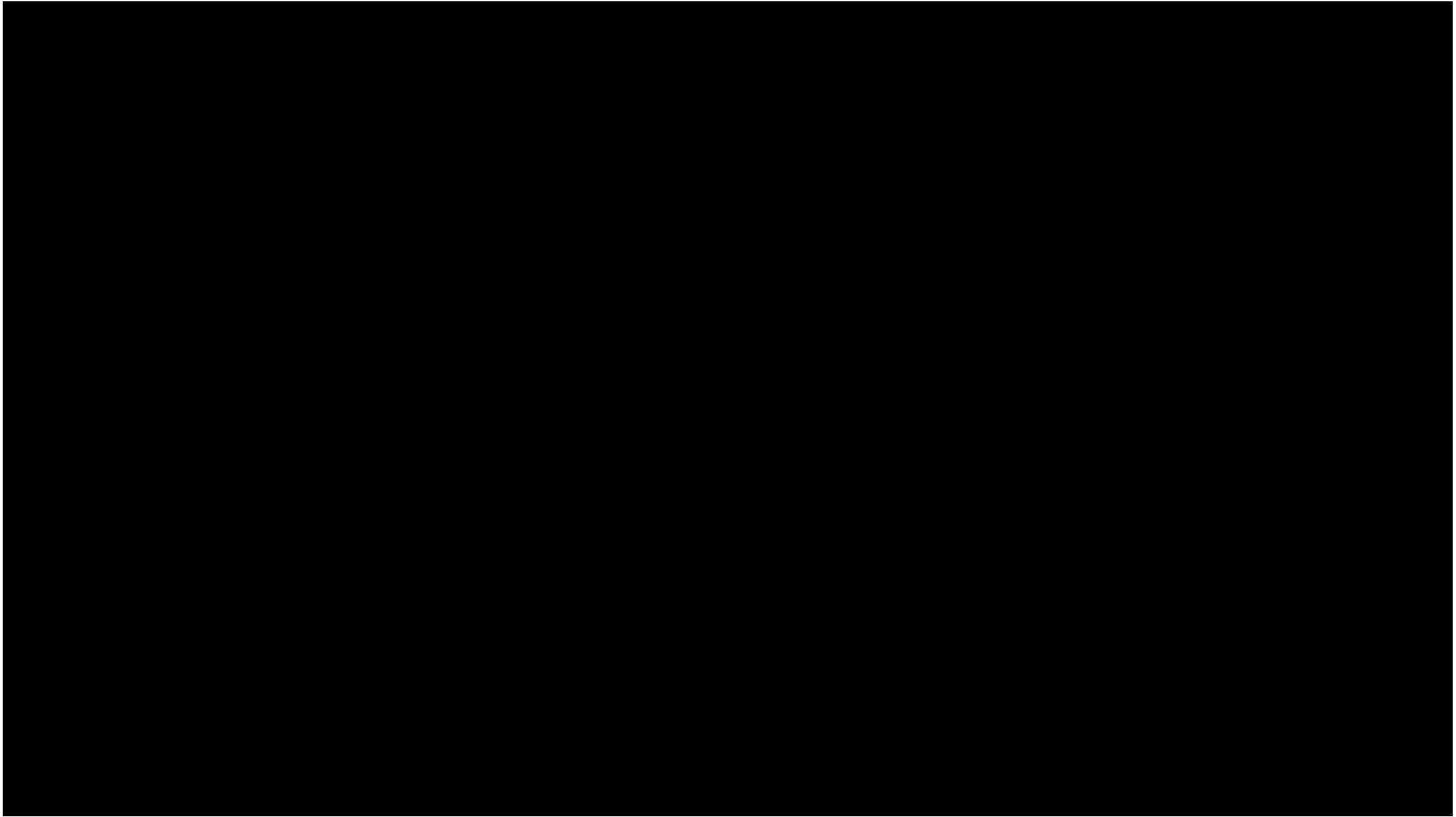
Recording with a camera is just as easy as writing with a pen.

The way from there to a finished scientific product is equally long and strainous for both media.

audiovisualresearch.org

Jeanine Reutemann
19.05.2017





**«It is often the case that
the same**

[VIDEO STYLE] →

**is free in one speaker,
foolish in another,
and arrogant in a third. »**

**Es gibt keinen 'one-style-fits-
all' Ansatz im Video Design.**

**Generelle Regel beim
sichtbaren Sprecher: Das
perfekte Setting für den einen,
ist miserabel für den anderen.**

WildCru, Oxford University
Geraldine Werhahn

Himalayan Wolves

DIE ERSTEN 10 SEKUNDEN

Audio/visual ‚hook‘; Rhetorik 101; „Hallo, ich begrüße Sie...“



MTech, ETH Zurich
Prof. Dr. Volker Hofmann

Corporate Sustainability

EXPERTE & AUTHENTIZITÄT

Autorschaft; Institution; Team; Disziplin

Chair of Digital Humanities, EPFL

Prof. Dr. Frédéric Kaplan

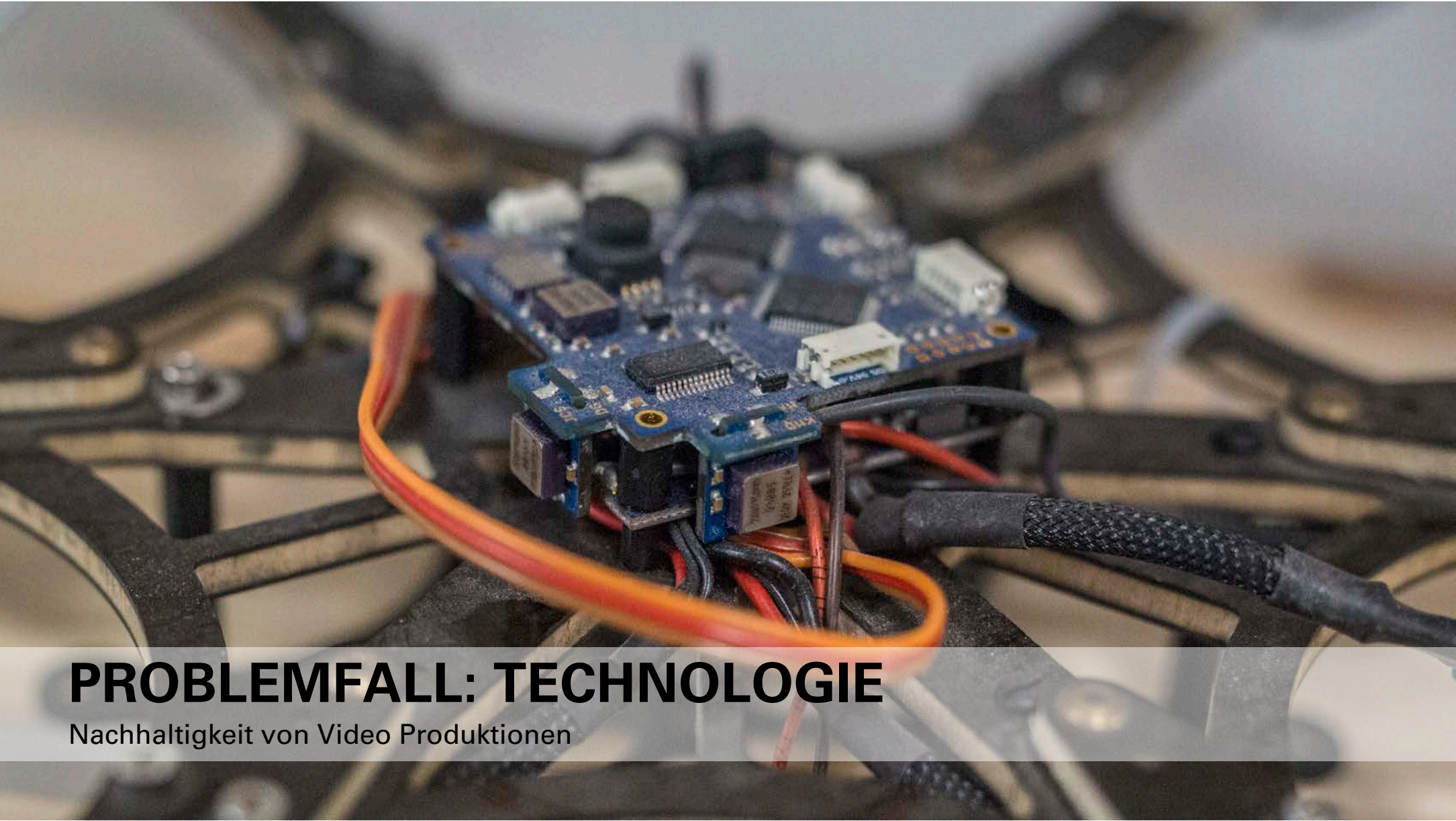
Dr. Isabella di Lenardo

Venice Time Machine

WARUM IST ES WICHTIG?

Kontext; ,peer-to-peer'; Zielgruppen-orientiert; Impact Faktor





PROBLEMFALL: TECHNOLOGIE

Nachhaltigkeit von Video Produktionen



PERSPEKTIVEN AUF OBJEKTE

Einstellungsgrößen; Variation; ‚Blickwinkel‘ verändern



BILD/TON REDUNDANZ

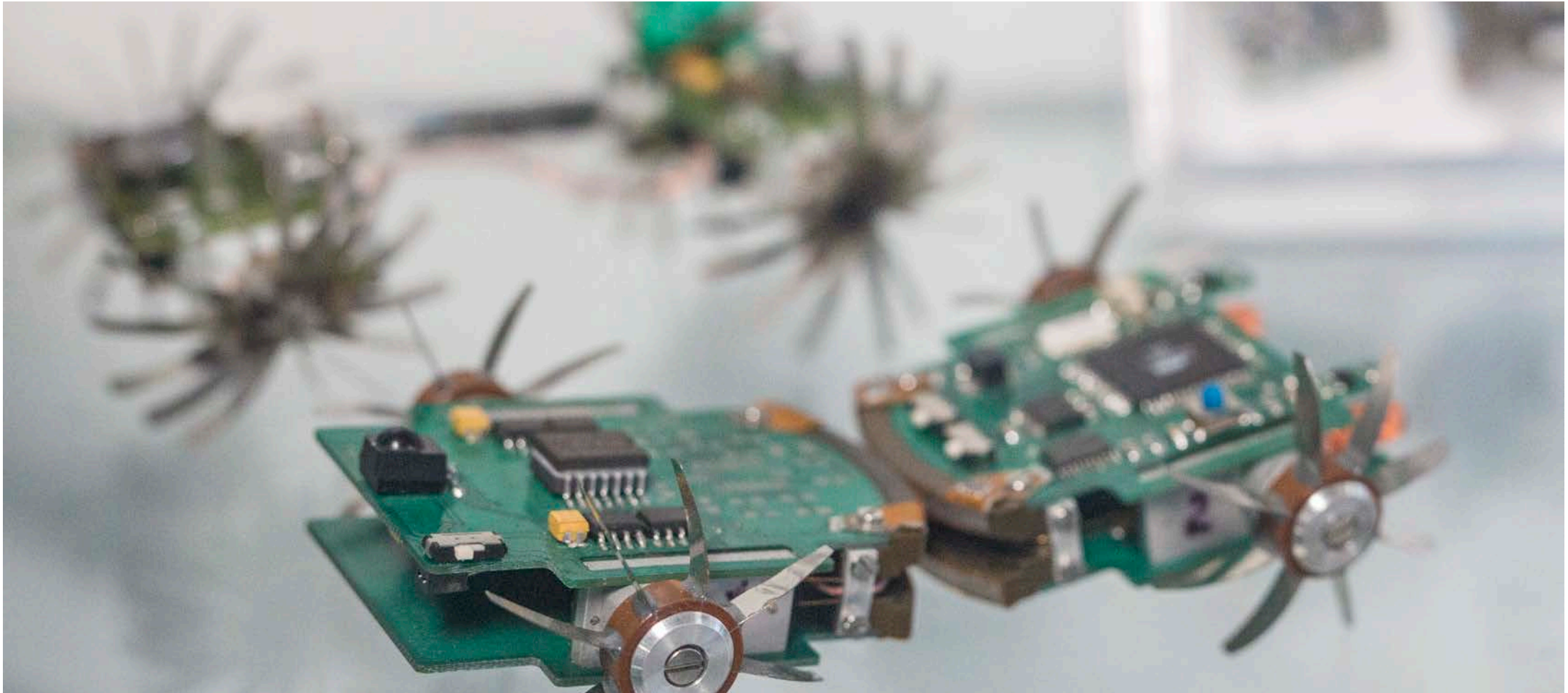
Menschliche Wahrnehmung ist multimodal!

Week 3

- This is the last week of module 1—which has focused on the nonprofit sector, nonprofit organizations and organizational governance.
- The focus this week is on the role and responsibilities of boards of directors in organizational governance.
- As in other weeks, the course wiki page contains the content, resources, and homework to complete by the end of the week.
- We will be drawing primarily from our SUNY Open Textbook, *Guidelines for Improving the Effectiveness of Boards of Directors of Nonprofit Organizations*. By now, you should have downloaded it for free from SUNY Open and iTunes.

February 16-22





CONCLUSION / WEITERFÜHRENDE GEDANKEN

Zusammenfassen; 'Visual/auditive cues'; Betonung, Fokus (Vorsicht, nicht 1x1 kopieren)

A woman with long brown hair, wearing a white short-sleeved blouse with a lace-like detail at the V-neck, is sitting and smiling at the camera. She is in a room with a chalkboard in the background. On the chalkboard, there is a diagram showing a large triangle with a line from the top vertex to the base, and another line from the top vertex to the left side. To the left of the woman, on a white wall, there is a wooden A-frame object and a white electrical outlet.

AM ENDE

~~„Thank you for...“~~ Dafür: Was ist die Hauptaussage?; starke Visualisierungen



Protein basics

Outline:

- Polymers of amino acids
- Order specified by bases in mRNA
- Fold spontaneously into catalytic structures, driven by hydrophobic effects and hydrogen bonds

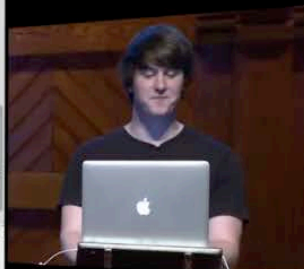
Learning Objectives:

- Describe protein 1° and 2° structure
- Relate to gene structure



2

```
ages.c (-src3m) - gedit
27 // declare array in which to store everyone's age
28 int ages[n];
29
30 // get everyone's age
31 for (int i = 0; i < n; i++)
32 {
33     printf("Age of person #%i: ", i + 1);
34     ages[i] = GetInt();
35 }
36
37 // report everyone's age a year hence
38 printf("Time passes...\n");
39 for (int i = 0; i < n; i++)
40 {
41     printf("A year from now, person #%i will be %i years old.\n", i + 1, ages[i] + 1);
42 }
```



What Does Scalable Mean?

- Operationally:
 - In the past: "Works even if data doesn't fit in main memory"
 - Now: "Can make use of 1000s of cheap computers"
- Algorithmically:
 - In the past: If you have N data items, you must do no more than N^n operations -- "polynomial time algorithms"
 - Now: If you have N data items, you must do no more than $N^{m/k}$ operations, for some large k
 - Polynomial-time algorithms must be parallelized
 - Soon: If you have N data items, you should do no more than $N \cdot \log(N)$ operations
 - As data sizes go up, you may only get one pass at the data
 - The data is streaming — you better make that one pass count
 - Ex: Large Synoptic Survey Telescope (30TB / night)

