

Künstliche Intelligenz als Wahrnehmungskrise: theoretische und ästhetische Herausforderungen

Forschungsforum „Wahrnehmungskrisen“

29. Kongress der Deutschen Gesellschaft für
Erziehungswissenschaft, Halle, 13.3.2024



Algorithmische Gegenüber:
human-nonhumane
Entanglements in
dialogischen Konstellationen

1961

Steps Toward Artificial Intelligence*

MARVIN MINSKY†, MEMBER, IRE

The work and applications of Marvin Minsky are appropriate for the art. The library of processing both the g

Summary—The problems computers solve really differ in areas: Search, Pattern Induction.

A computer can do, in

A view of artificial intelligence

by FRED M. TONGE
University of California, Irvine

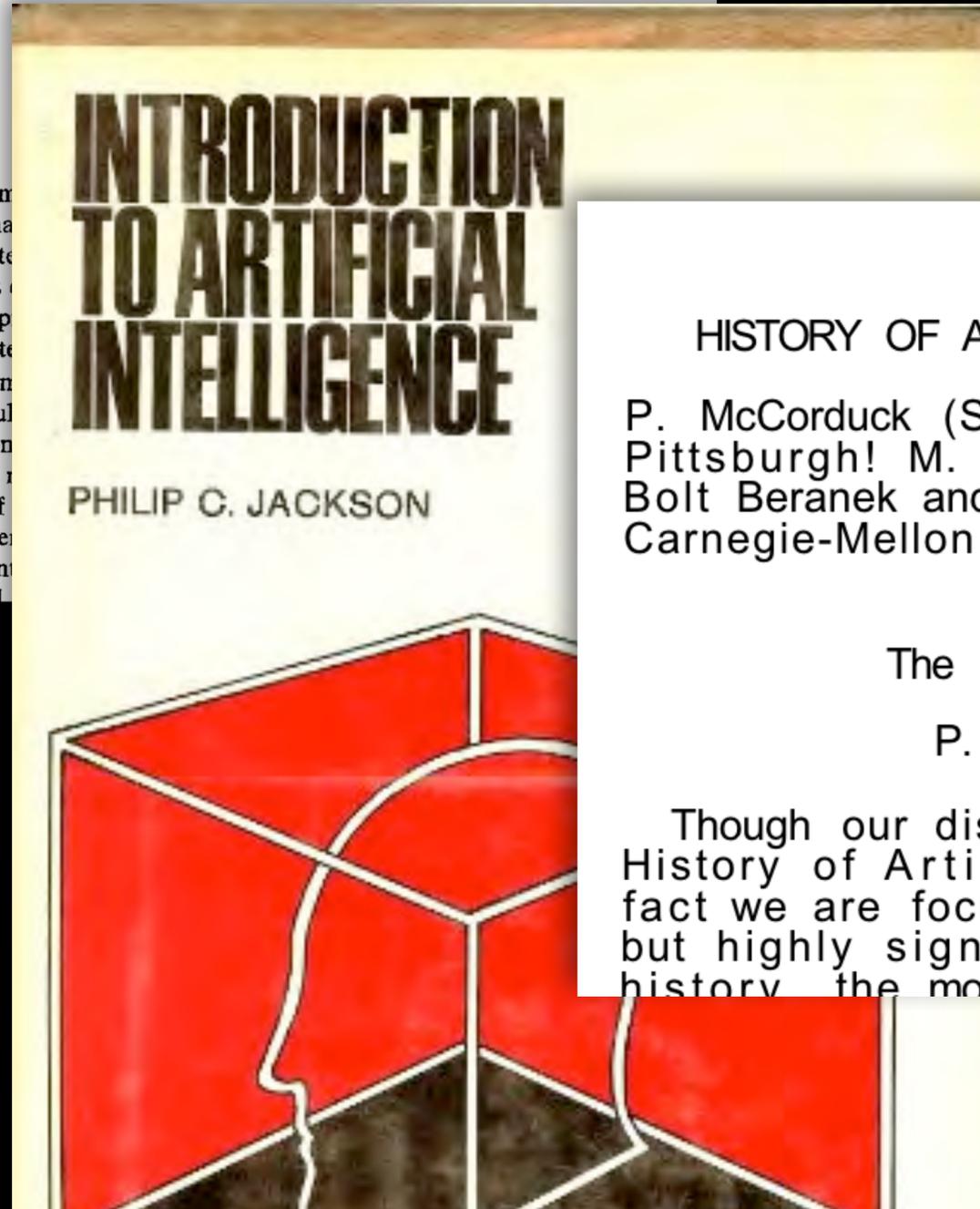
INTRODUCTION

By "intelligence" we mean a property of a system determined by observation of the system's behavior agreed to by "most reasonable men" as intelligent. "Artificial intelligence" is then that property as it exists in non-living systems. Work directed toward producing such behavior is thereby work in artificial intelligence.

While the above is indeed a loose definition, more useful in suggestiveness than in precision, it should serve for our purposes. It does contain at least one important assumption — that, *a priori*, intelligence is not to be found in "living" systems. And it does suggest that, if we are ever to know (or whether artificial intelligence does or will ever exist) exist is really worthy of further argument. If we can reach some agreement should be reached.

1966

1977



1974

HISTORY OF ARTIFICIAL INTELLIGENCE

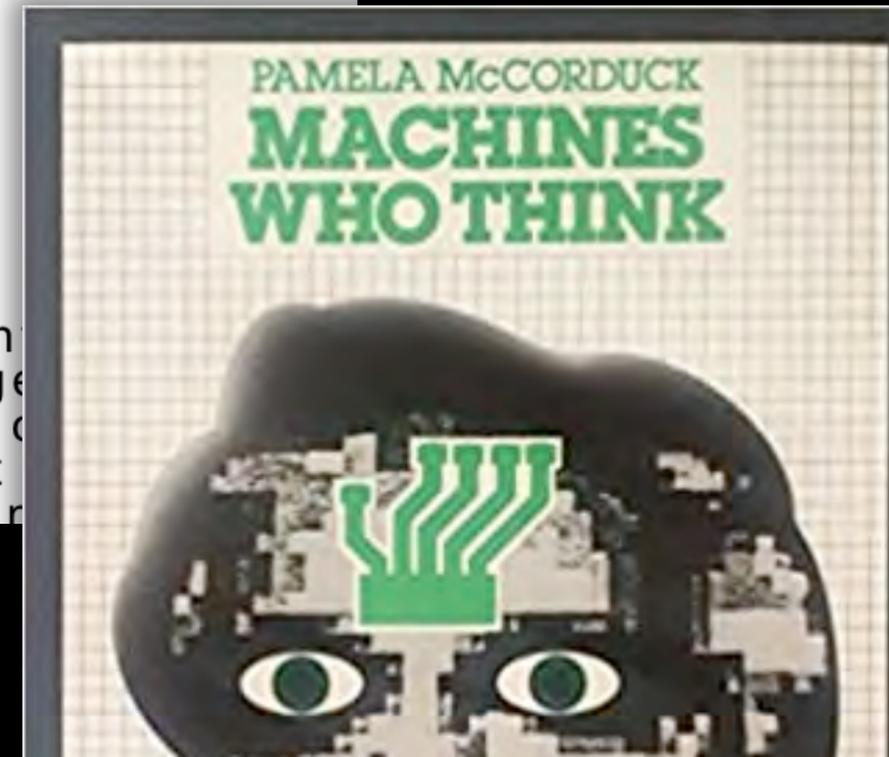
P. McCorduck (Session Chairman), Univ. of Pittsburgh! M. Minsky, MIT: O. Selfridge, Bolt Beranek and Newman? H. A. Simon, Carnegie-Mellon University

The Early History

P. McCorduck

Though our discussion is entitled History of Artificial Intelligence, in fact we are focusing here on only a few but highly significant moments in the history — the moment when art

2004



„Good Old Fashioned AI“ versus Deep Learning

- A. KRR: Wissenrepresentation und Schlussfolgern,
- B. PLAN: Planen
- C. MAS: Multi-Agent Systems
- D. RBT: Robotik
- E. PHIL: Philosophische Fragen
- F. NLP: Prozessieren natürlicher Sprachen
- G. CV: Computer vision
- H. ML: Machine Learning

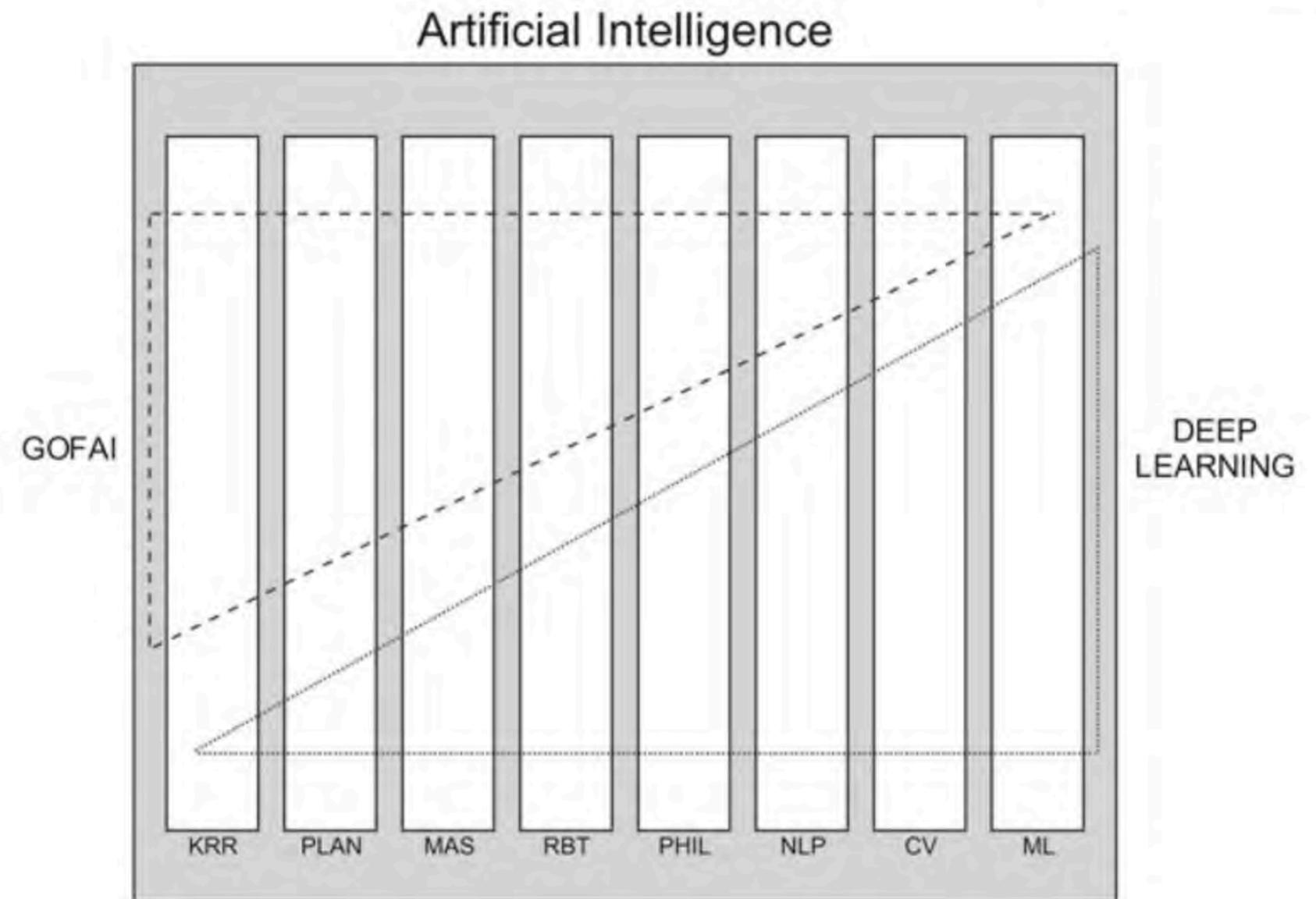


Fig. 1.1 Vertical and horizontal components of AI

generative Software als algorithmischer, kultursensibler Dialogpartner und als dekoloniales Befreiungsprogramm



WAYS & MEANS

Too Many Notes: Computers, Complexity and Culture in *Voyager*

George E. Lewis

Voyager [1,2] is a nonhierarchical, interactive musical environment that privileges improvisation. In *Voyager*, improvisors engage in dialogue with a computer-driven, interactive "virtual improvising orchestra." A computer program analyzes aspects of a human improvisor's performance in real time, using that analysis to guide an automatic composition (or, if you will, improvisation) program that generates both complex responses to the musician's playing and independent behavior that arises from its own internal processes.

This work, which is one of my most widely performed compositions, deals with the nature of music and, in particular, the processes by which improvising musicians produce it. These questions can encompass not only technological or music-theoretical interests but philosophical, political, cultural and social concerns as well. This is consistent with the instrumental dimension or tendency in African musical organization, or what Robert Farris Thompson [3] identifies as "songs and dances of social allusion," one of several "ancient African organizing principles of song and dance that crossed the seas from the Old World to the New."

Voyager's unusual amalgamation of improvisation, indeterminacy, empathy and the logical, utterly systematic structure of the computer program is described throughout this article not only as an environment, but as a "program," a "system" and a "composition," in the musical sense of that term. In fact, the work can take on aspects of all of these terms simultaneously—considering the conceptual level, the process of creating the software and the real-time, real-world encounter with the work as performer or listener. Flowing across these seemingly rigid conceptual boundaries encourages both improvisors and listeners to recognize the inherent instability of such taxonomies.

Musical computer programs, like any texts, are not "objective" or "universal," but instead represent the particular ideas of their creators. As notions about the nature and function of music become embedded into the structure of software-based musical systems and compositions, interactions with these systems tend to reveal characteristics of the community of thought and culture that produced them. Thus, it would be useful here to examine the implications of the experience of programming and performing with *Voyager* as a kind of computer music-making embodying African-American cultural practice.

Among the fair number of studies by artists/theorists who have written cogently on issues of race, gender and class in new technological media (such as Loretta Todd [4] and Cameron Bailey [5]), the ethnographic study of Institut Recherche et Coordination Acoustique/Musique (IRCAM) by the anthropologist and improviser Georgina Born [6] ap-

pears to stand practically alone in the trenchancy and thoroughness of its analysis of these issues with respect to computer music. This viewpoint contrasts markedly with Catherine M. Cameron's [7] rather celebratory ethnography-at-a-distance of what she terms "American experimentalism," in which the word "race" never appears, and in which her notion of a "musical class structure" is framed largely in terms of a now-moribund debate about relative privilege between Europe and America.

In contrast, Born's explicit identification of the nearly all-male, all-white musical and cultural canon articulated not only by the French institute, but by its American equivalents, traces the outlines of the development of a post-1950s aesthetic of trans-European experimentalism. Given her so far unrefuted thesis that the overwhelming majority of computer music research and compositional activity locates itself (however unsteadily at times) within the belief systems and cultural practices of European concert music, one can easily imagine a work that, like *Voyager*, exemplifies an area of musical discourse using computers that is not viewed culturally and historically as a branch of trans-European contemporary concert music and, moreover, is not necessarily modeled as a narrative about "composition."

THE AESTHETICS OF MULTIDOMINANCE

In an influential 1990s essay, the artist and critic Robert L. Douglas [8] sought to formalize an African-American aesthetic, synthesizing visual and musical elements of what the painter Jeff Donaldson, founder of the Africobra art movement [9], has called "Trans-African" culture. The aspect of Douglas's theory that I wish to highlight here is the notion of "multidominant elements," which I will henceforth call "multidominance." According to Douglas, the aesthetics of multidominance, involving "the multiple use of colors in intense degrees, or the multiple use of textures, design patterns, or shapes" [10] are found quite routinely in musical

WAYS & MEANS

ABSTRACT
The author discusses his computer music composition, *Voyager*, which employs a computer-driven, interactive "virtual improvising orchestra" that analyzes an improvisor's performance in real time, generating both complex responses to the musician's playing and independent behavior arising from the program's own internal processes. The author contends that notions about the nature and function of music are embedded in the structure of software-based music systems and that interactions with these systems tend to reveal characteristics of the community of thought and culture that produced them. Thus, *Voyager* is considered as a kind of computer music-making embodying African-American aesthetics and musical practices.

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LEONARDO MUSIC JOURNAL, Vol. 10, pp. 33–39, 2000 33

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generative Software als algorithmischer, kultursensibler Dialogpartner und als dekoloniales Befreiungsprogramm

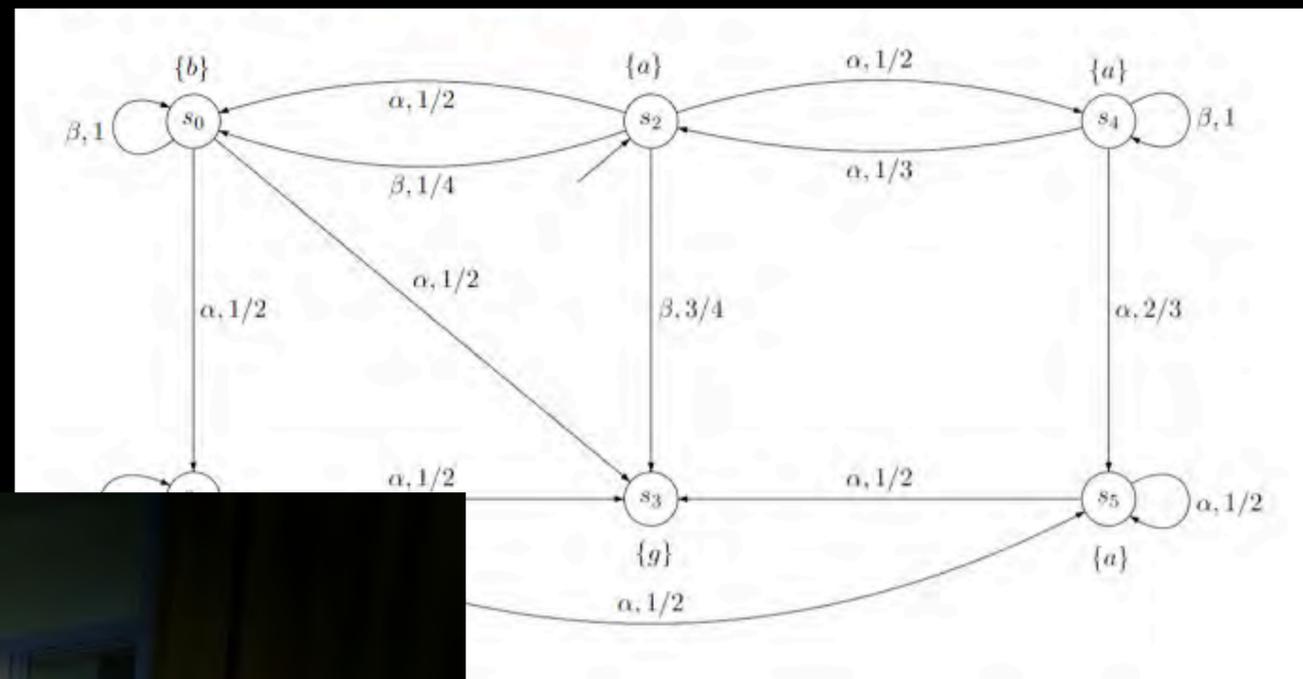


Finally, Wilson notices in African-derived music a tendency toward a high density of events in a relatively short time frame [33]. It is to be noted that the work of many important African-American improvisors—in particular Cecil Taylor, John Coltrane and Albert Ayler—exhibit a notion of extended form that involves the sustained use, often for very long periods, of extremely rapid, many-noted intensity structures. Donaldson's 1988 visual work *Jam Packed and Jelly Tight* [34] exemplifies the approach of the Africobra artists, who, according to Douglas,

used the jampack and jelly-tight concept as a means of filling up the void, to add as much as possible to the act of creation. Africobra members accept these concepts as an African axiom: that to add to life is to ensure that there is more to share [35].

The *Voyager* program often combines dense, rapid accretions of sonic information with sudden changes of mood, tempo and orchestration, eschewing the slowly moving timbral narratives characteristic of much institutionally based com-

Markov-Ketten in human-nonhumanen Kreativprozessen

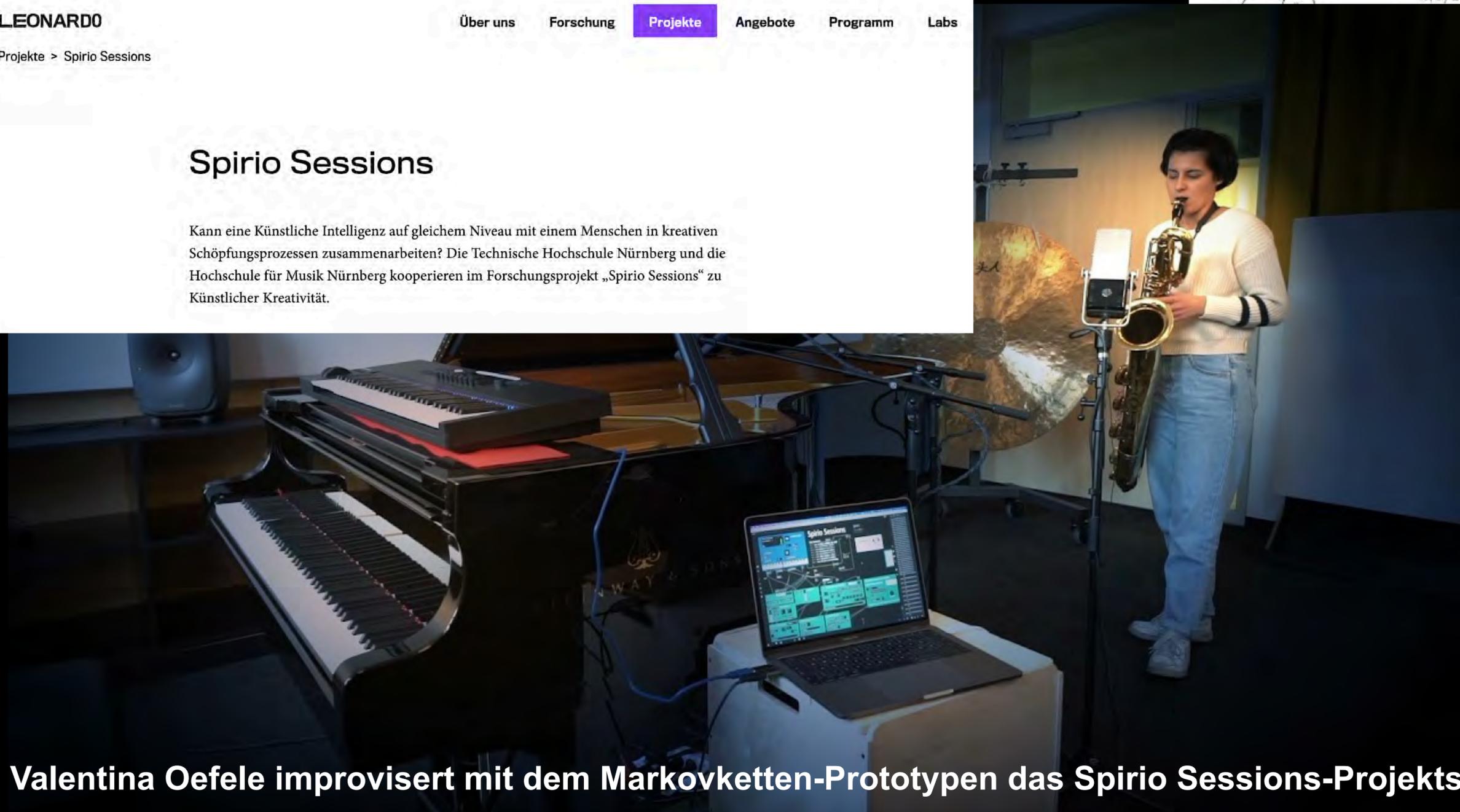


LEONARDO Über uns Forschung **Projekte** Angebote Programm Labs

Projekte > Spirio Sessions

Spirio Sessions

Kann eine Künstliche Intelligenz auf gleichem Niveau mit einem Menschen in kreativen Schöpfungsprozessen zusammenarbeiten? Die Technische Hochschule Nürnberg und die Hochschule für Musik Nürnberg kooperieren im Forschungsprojekt „Spirio Sessions“ zu Künstlicher Kreativität.



Valentina Oefele improvisiert mit dem Markovketten-Prototypen das Spirio Sessions-Projekts

<https://youtu.be/3wDNCdrbrgE>

„Künstliche Intelligenz“ als
Wahrnehmungstransformation
in pädagogischen Kontexten

control

**inter-
action**

**gene-
ration**

Trends in Neuroscience and Education
Volume 5, Issue 4, December 2016, Pages 157-165

ELSEVIER

Research article

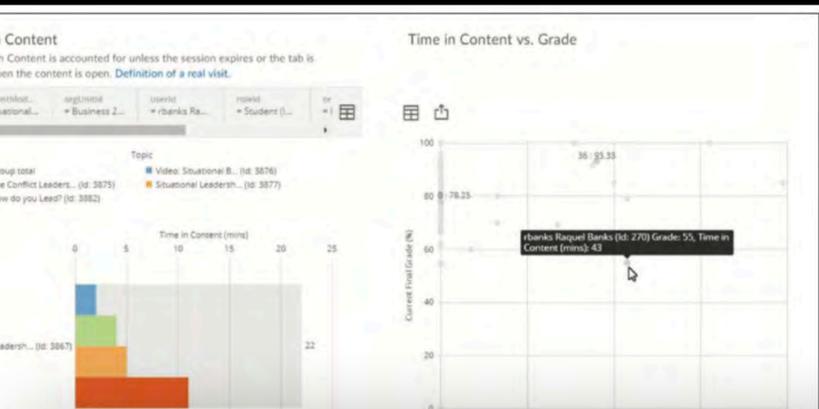
Predicting long-term outcomes of educational interventions using the evolutionary causal matrices and Markov chain based on educational neuroscience

Hyemin Han^a, Kangwook Lee^b, Firat Soylu^a

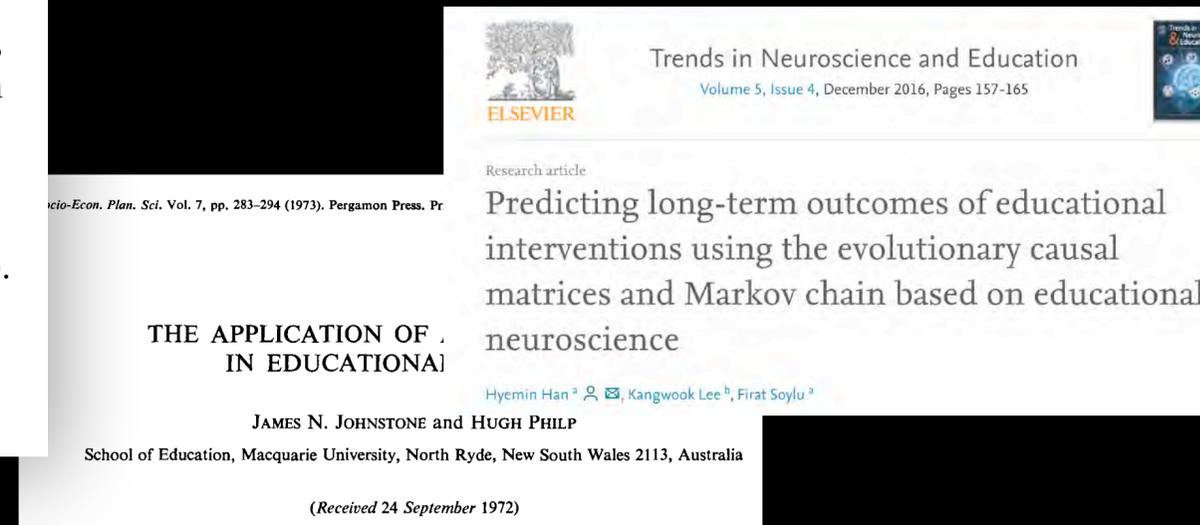
JAMES N. JOHNSTONE and HUGH PHILP
School of Education, Macquarie University, North Ryde, New South Wales 2113, Australia

(Received 24 September 1972)

Socio-Econ. Plan. Sci. Vol. 7, pp. 283-294 (1973), Pergamon Press. Pr



„Lumilo tunes teachers in to the rich analytics that ITSs generate: It presents realtime indicators of students’ current learning, metacognitive, and behavioral “states”, projected in the teacher’s view of the classroom (Fig. 1, left). The use of transparent smart glasses allows teachers to keep their heads up and focused on the classroom, enabling them to continue monitoring important signals that may not be captured by the tool alone (e.g., student body language and looks of frustration [19, 21]). The smart glasses provide teachers with a private view of actionable, real-time information about their students, embedded throughout the classroom environment [...]“ (Holstein et al, 2018, p. 156)

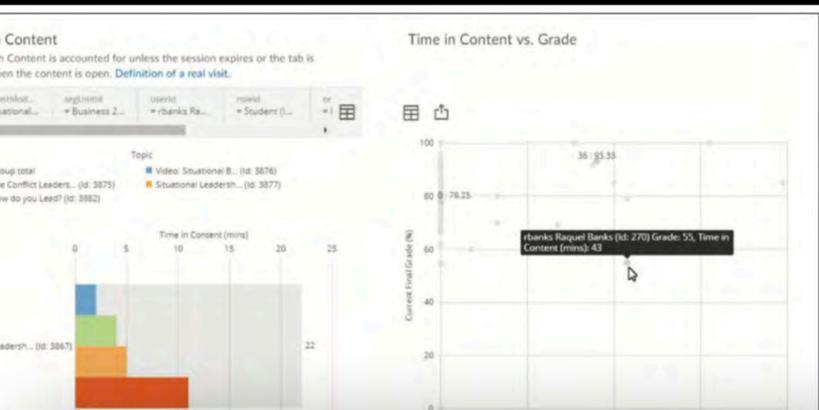


„the stories told by dashboards for Machine-Learning-based learning analytics make predictions more persuasive and further contribute to the ways in which learning analytics configure and shape our (anticipation of our) futures. Through these stories, the correlations of learning analytics are framed as causal connections [...]“ (Jarke & Macgilchrist 2021, p. 12)

control

**inter-
action**

**gene-
ration**



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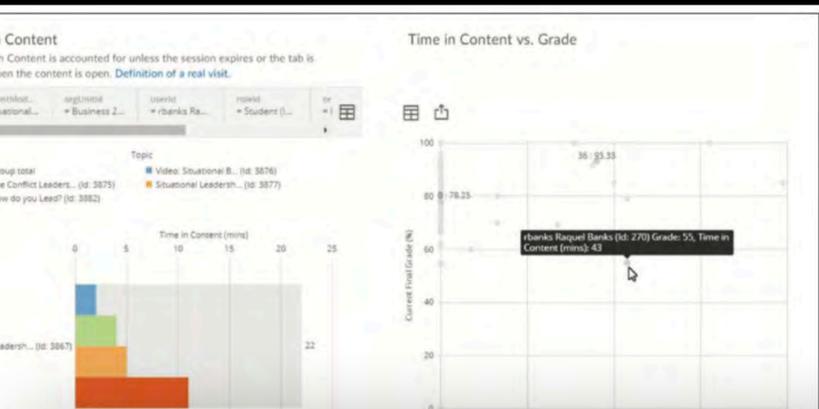
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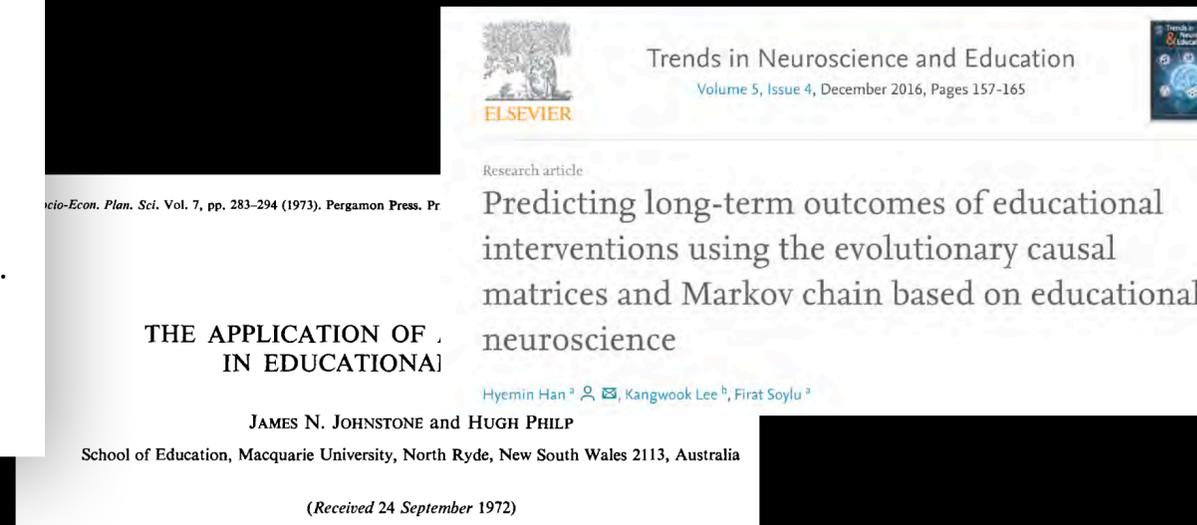
**inter-
action**

**gene-
ration**

„Die KI-gestützte Software ACTrain stellt ein Beispiel einer intelligenten Technologie dar, die gezielt Prozesse der Selbstregulation in vielfältigen Bildungssituationen anstoßen kann. Dabei soll die Software im Schulkontext die menschliche Lehrkraft nicht ersetzen, sondern vielmehr im Rahmen einer gezielten Lernbegleitung wirksam unterstützen.“ (Wirzberger & Schwarz 2021, p. 292)



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control

**inter-
action**

**gene-
ration**

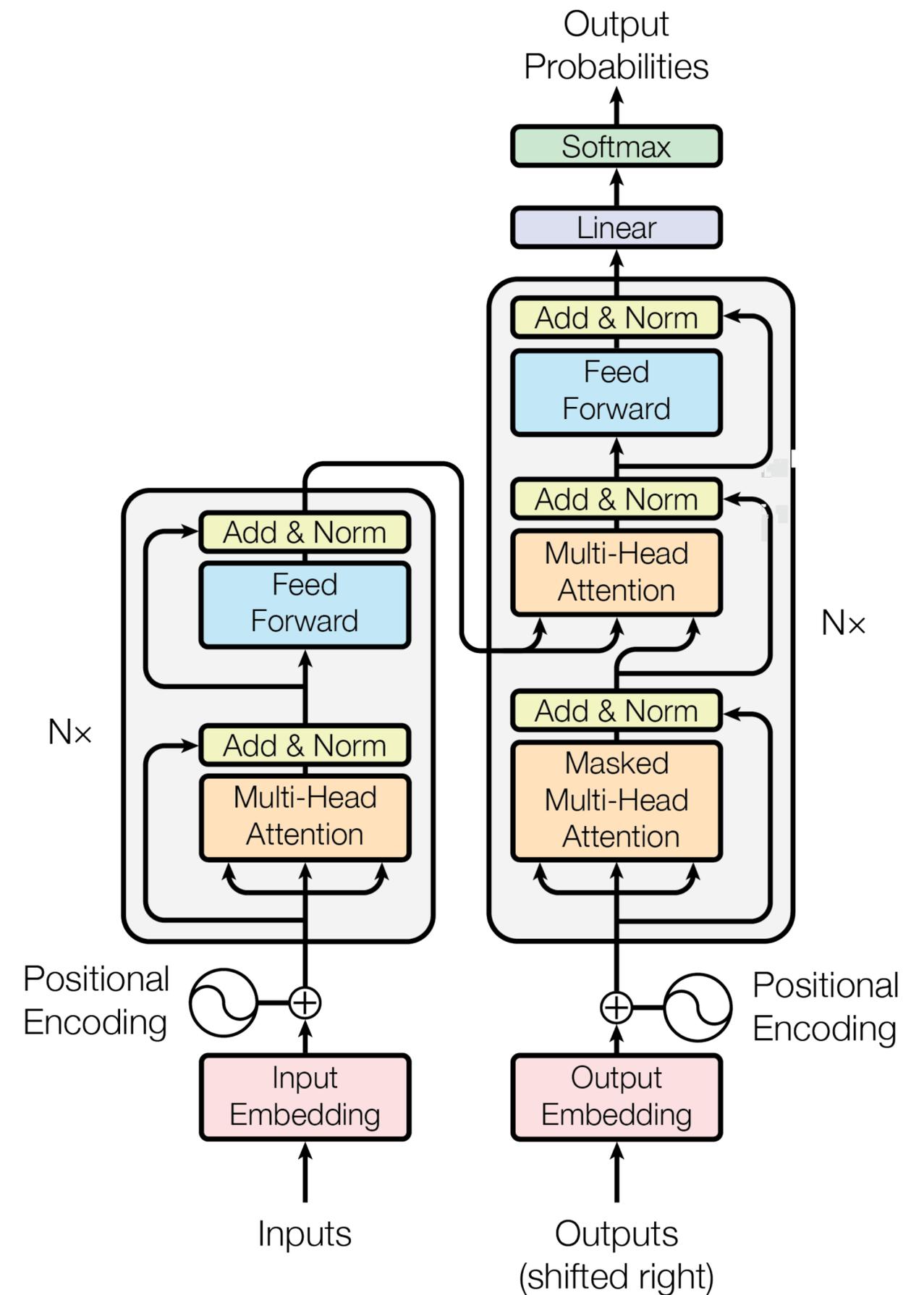
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„Designing AI-Enhanced Curriculum: Researchers can explore the potential of GAI in generating adaptive and dynamic learning materials that cater to individual learners’ needs. AI-powered curriculum design can foster personalized and engaging learning experiences, promoting lifelong learning and skill development“ (Bahroun et al. 2023, p. 33)

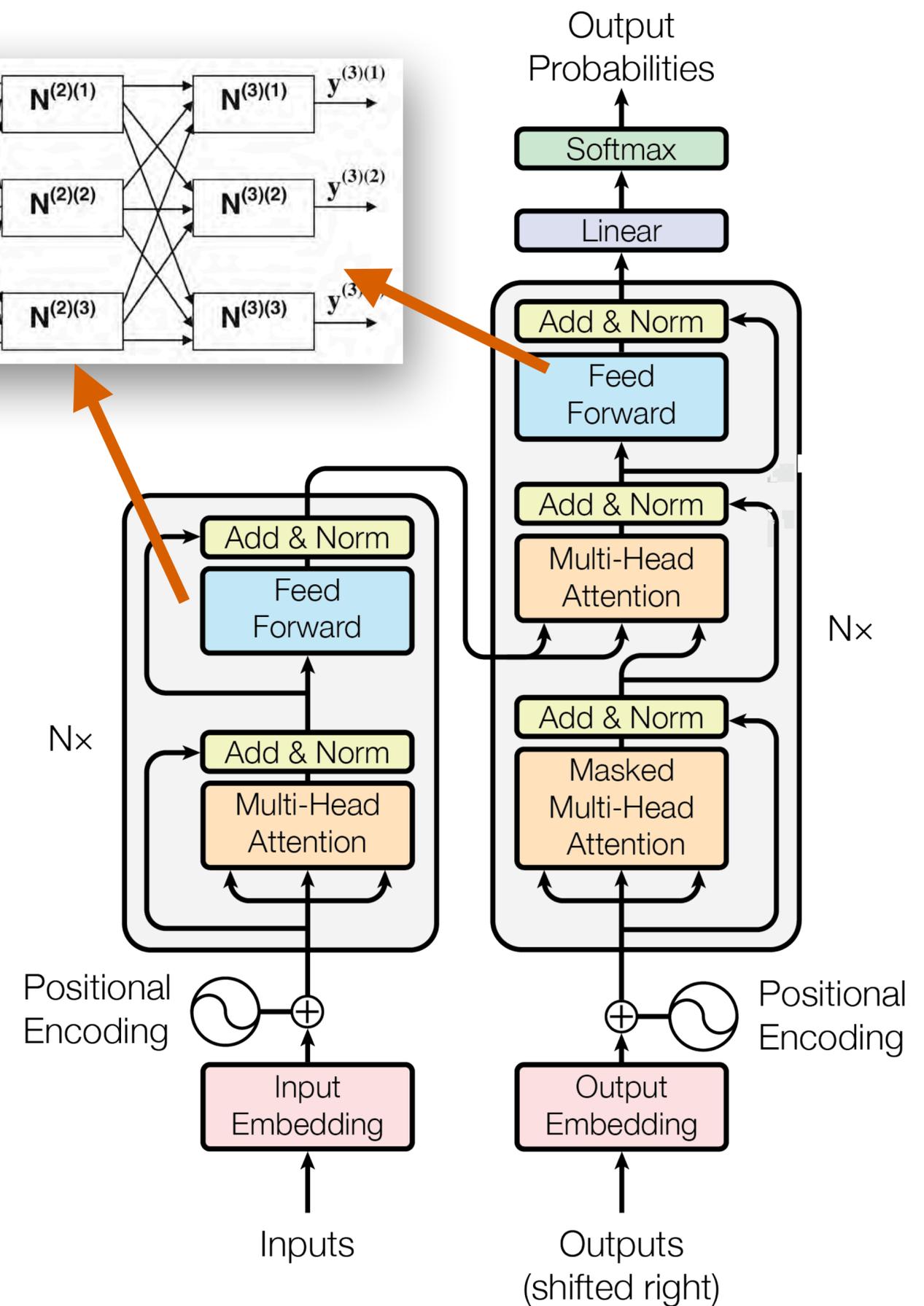
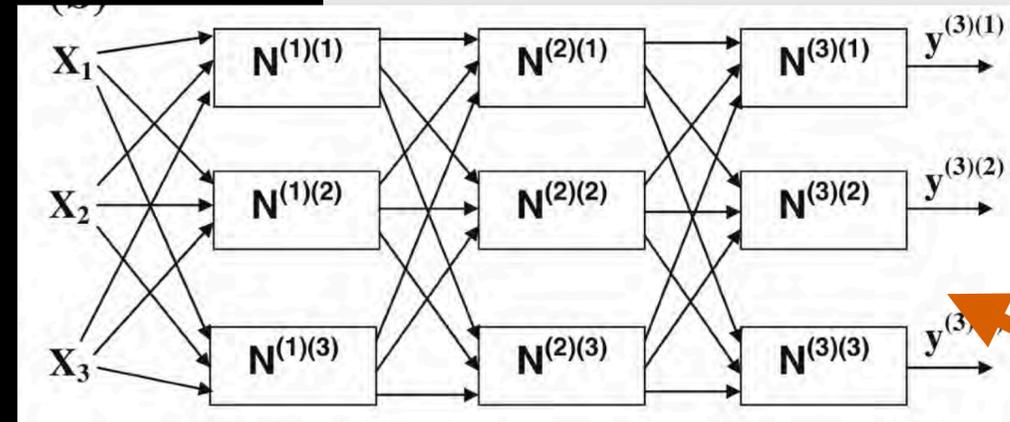
Non-Humane Mimesis:
Die Quantifizierung von
Gestalt- und
Ähnlichkeitsverhältnissen als
Basis von KI

„Transformer Neural Networks“ (TNN):
Grundlage von ChatGPT
(z.B. BERT; GPT-4)



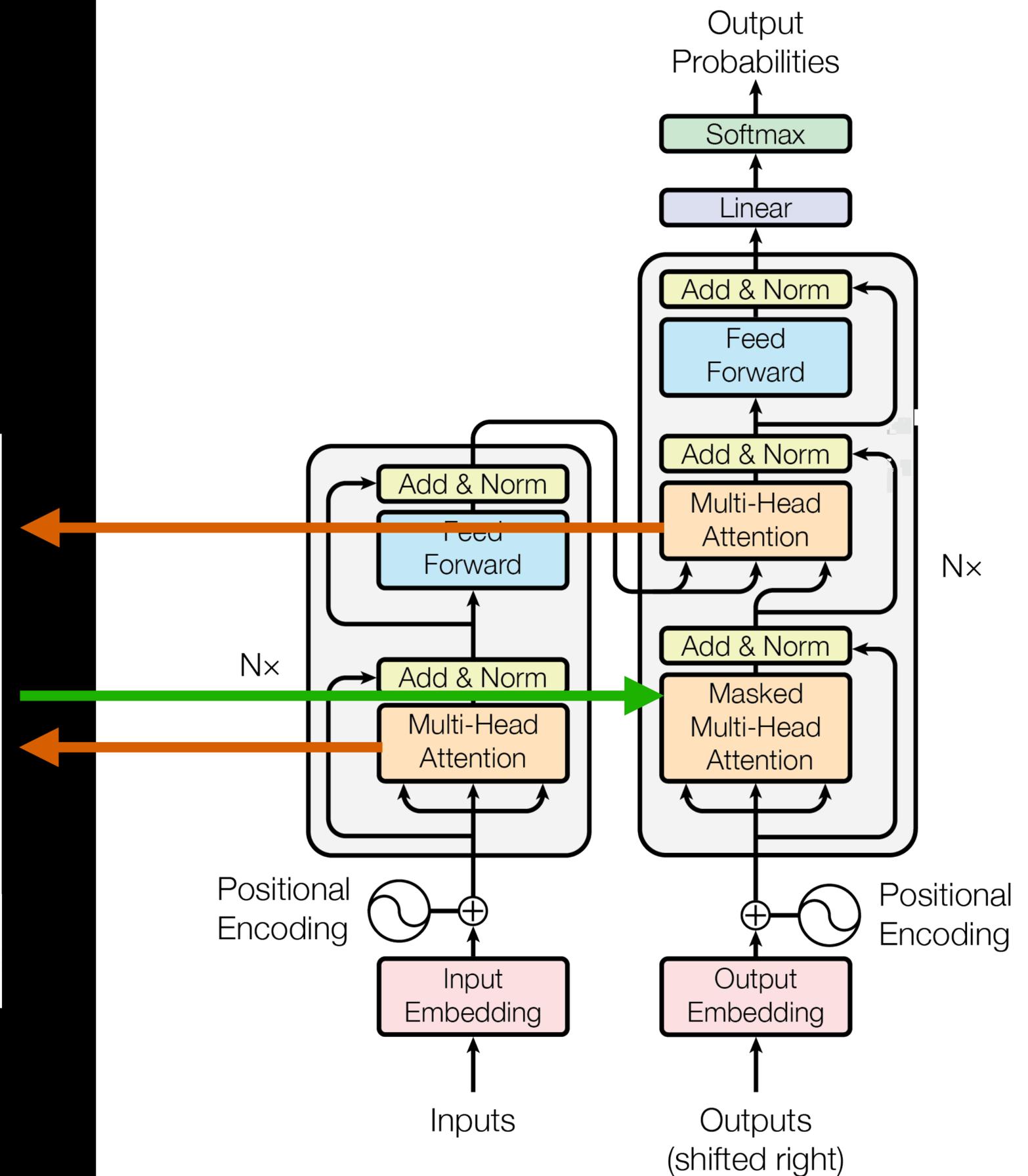
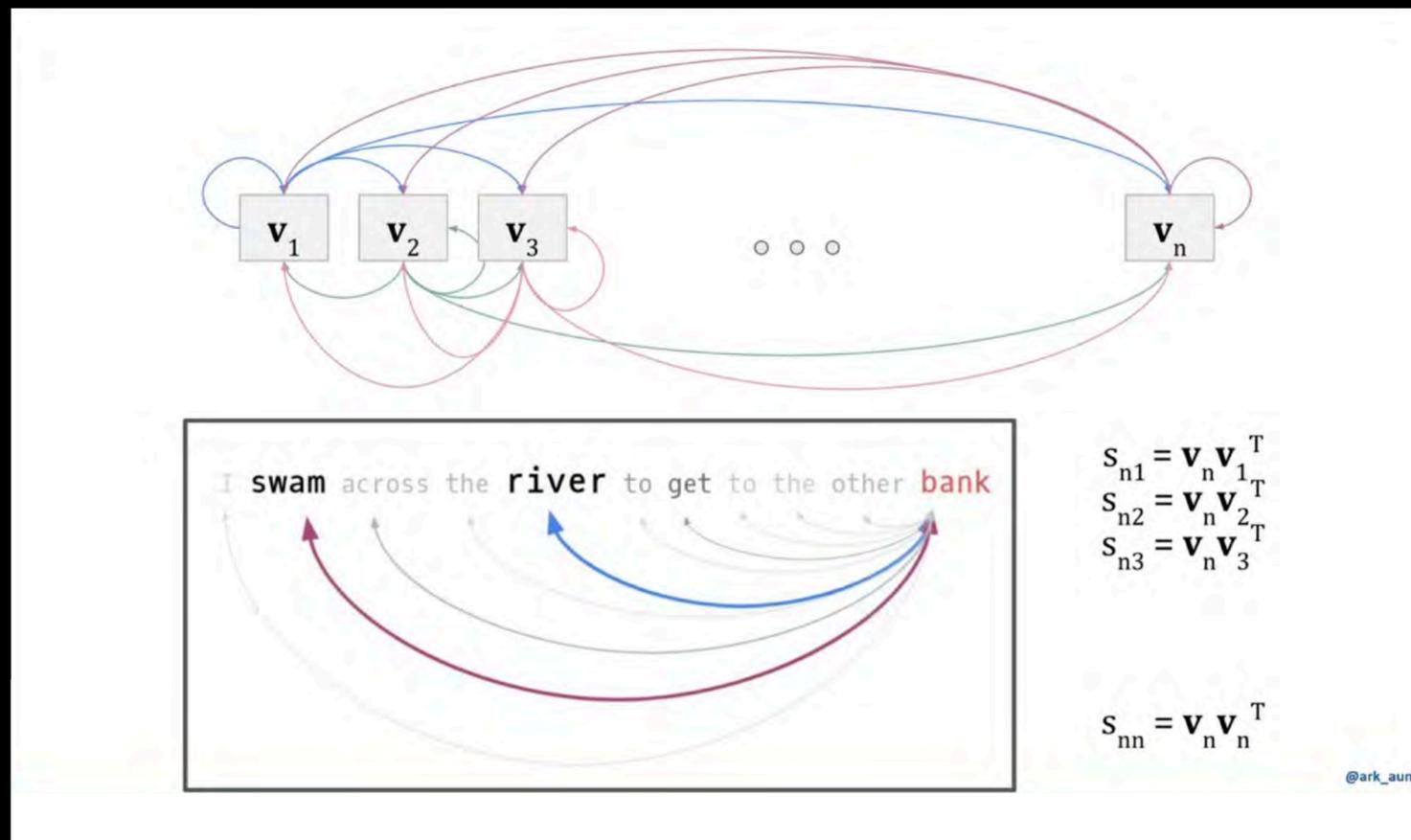
Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A. N., Kaiser, L., & Polosukhin, I. (2017). Attention Is All You Need (arXiv:1706.03762). arXiv. <https://doi.org/10.48550/arXiv.1706.03762>

„Transformer Neural Networks“ (TNN):
 Grundlage von ChatGPT
 (z.B. BERT; GPT-4)

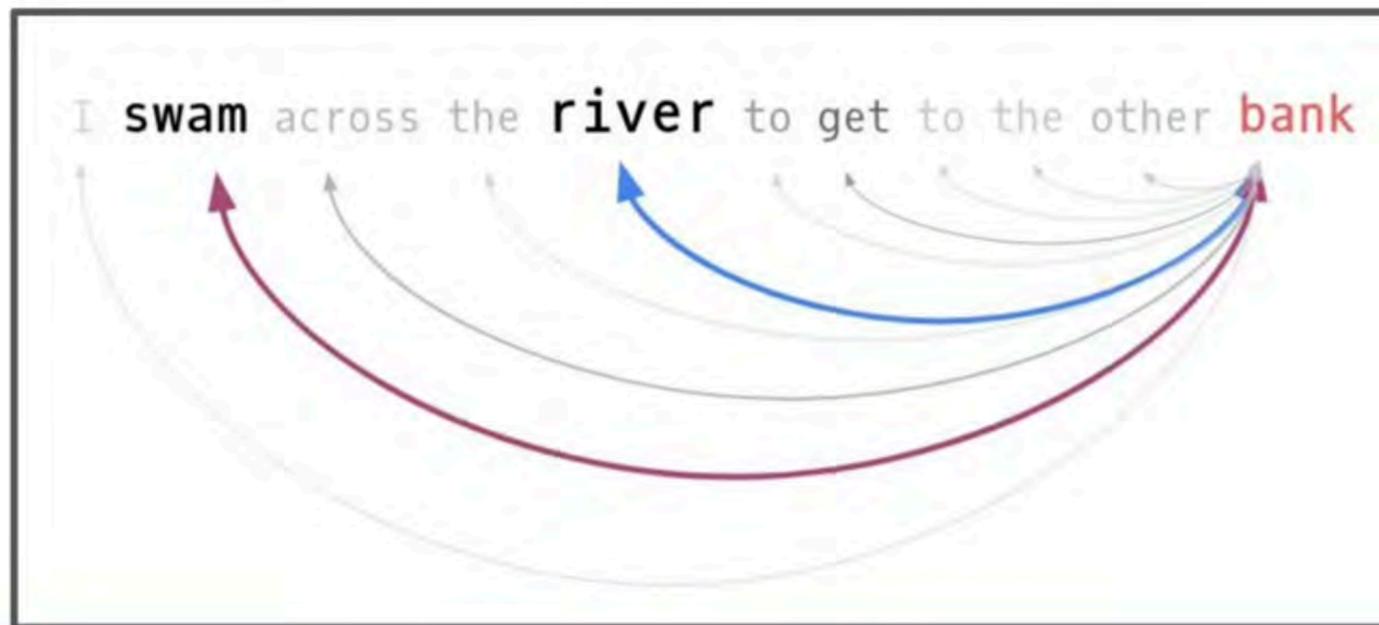
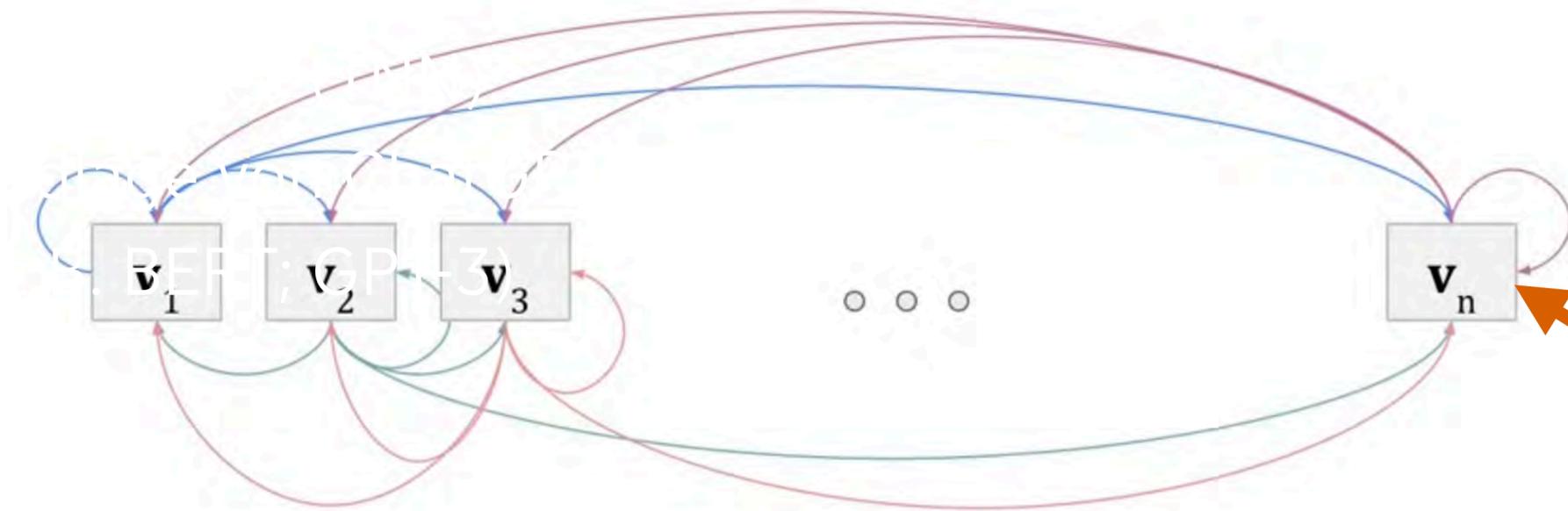


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„Transformer Neural Networks“ (TNN): Grundlage von ChatGPT (z.B. BERT; GPT-4)



Aung, A. M. (Director). (2020, Oktober 17). Intuition Behind Self-Attention Mechanism in Transformer Networks. <https://www.youtube.com/watch?v=g2BRluln4uc>



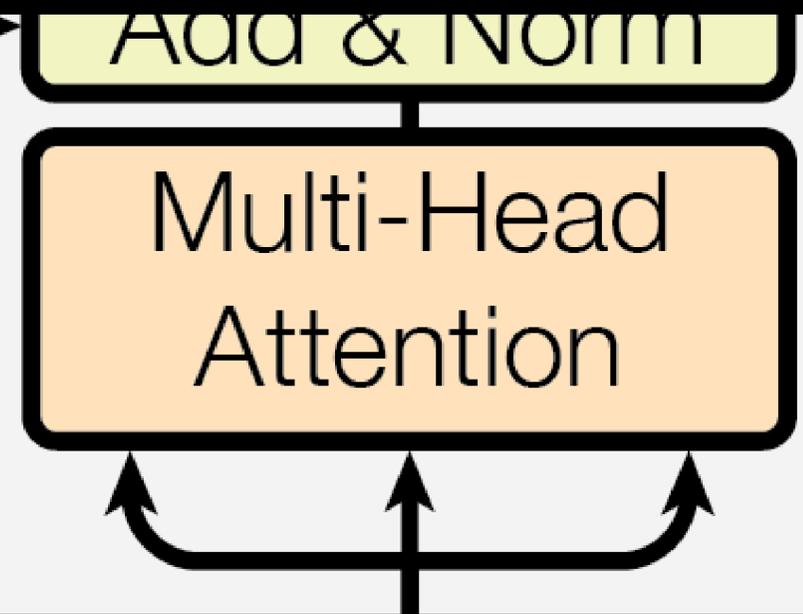
$$S_{n1} = \mathbf{v}_n \mathbf{v}_1^T$$

$$S_{n2} = \mathbf{v}_n \mathbf{v}_2^T$$

$$S_{n3} = \mathbf{v}_n \mathbf{v}_3^T$$

$$S_{nn} = \mathbf{v}_n \mathbf{v}_n^T$$

@ark_aung



Jede Einheit (Wort) wird als **Vektor** berechnet, der Beziehungen zu anderen Einheiten (Wörtern) ausdrückt.

Embedding Projector



DATA

5 tensors found
Word2Vec 10K

Label by: word
Color by: No color map

Edit by: word
Tag selection as

Load Publish Download Label

Sphereize data

Checkpoint: Demo datasets

Metadata: oss_data/word2vec_10000_200d_labels.tsv

UMAP T-SNE **PCA** CUSTOM

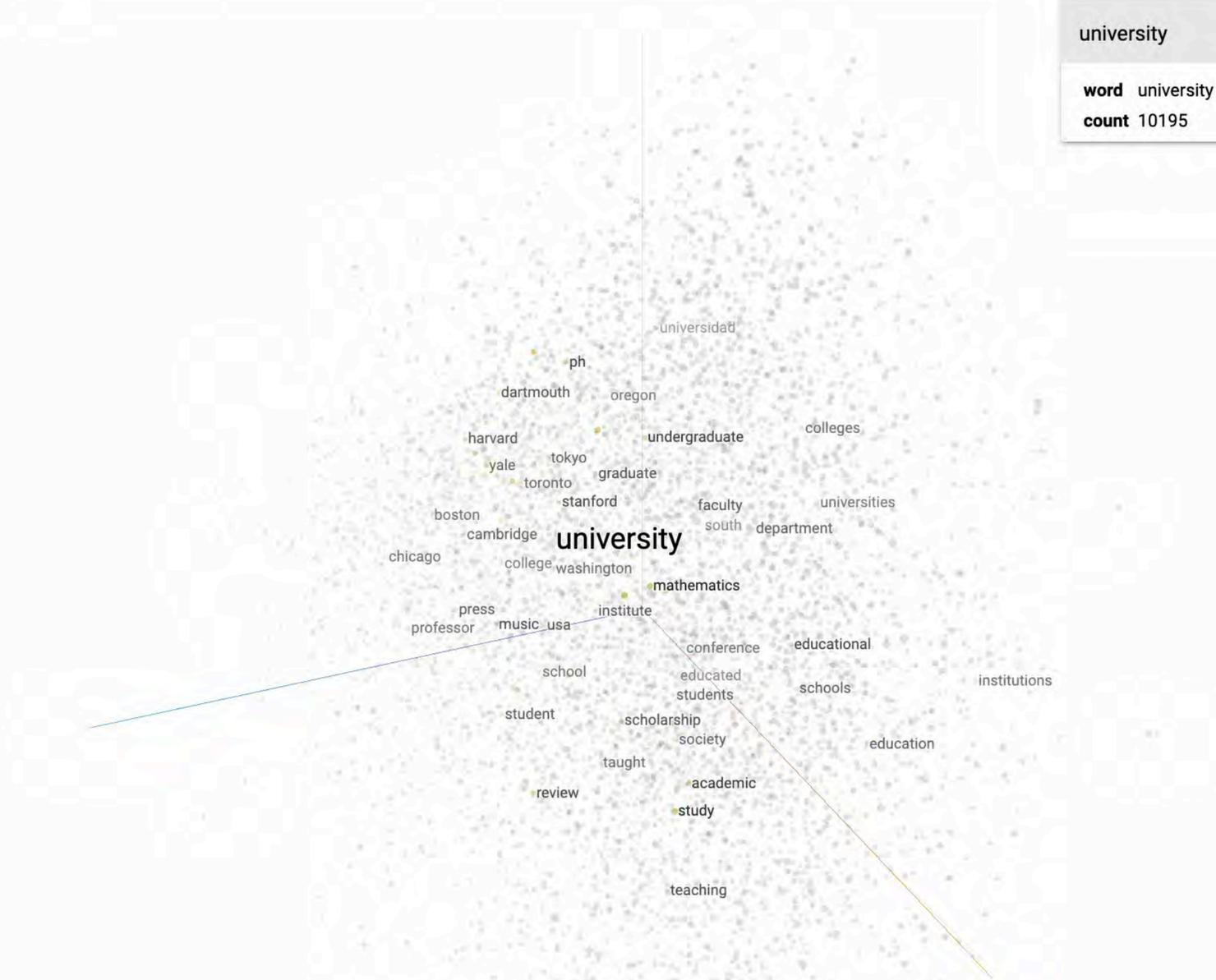
X: Component #1 Y: Component #2

Z: Component #3

PCA is approximate.

Total variance described: 8.5%.

Points: 10000 | Dimension: 200 | Selected 101 points



university

word university
count 10195

Show All Data Isolate 101 points Clear selection

Search: university by word

neighbors: 101

distance: COSINE EUCLIDEAN

Nearest points in the original space:

college	0.355
school	0.403
harvard	0.453
institute	0.455
universities	0.470
professor	0.486
graduate	0.489
cambridge	0.499
stanford	0.506
oxford	0.520
yale	0.537
students	0.565
illinois	0.572
columbia	0.572
faculty	0.582
press	0.584
mit	0.585
princeton	0.585
undergraduate	0.597
education	0.602
academic	0.604
student	0.609
berkeley	0.609

BOOKMARKS (0)

Word Embeddings

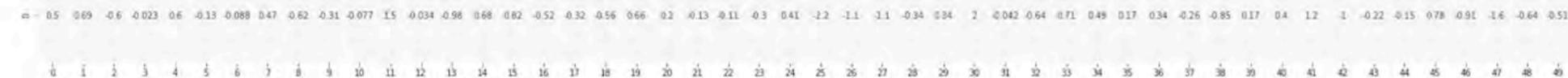
“The gift of words is the gift of deception and illusion” ~Children of Dune

With this understanding, we can proceed to look at trained word-vector examples (also called word embeddings) and start looking at some of their interesting properties.

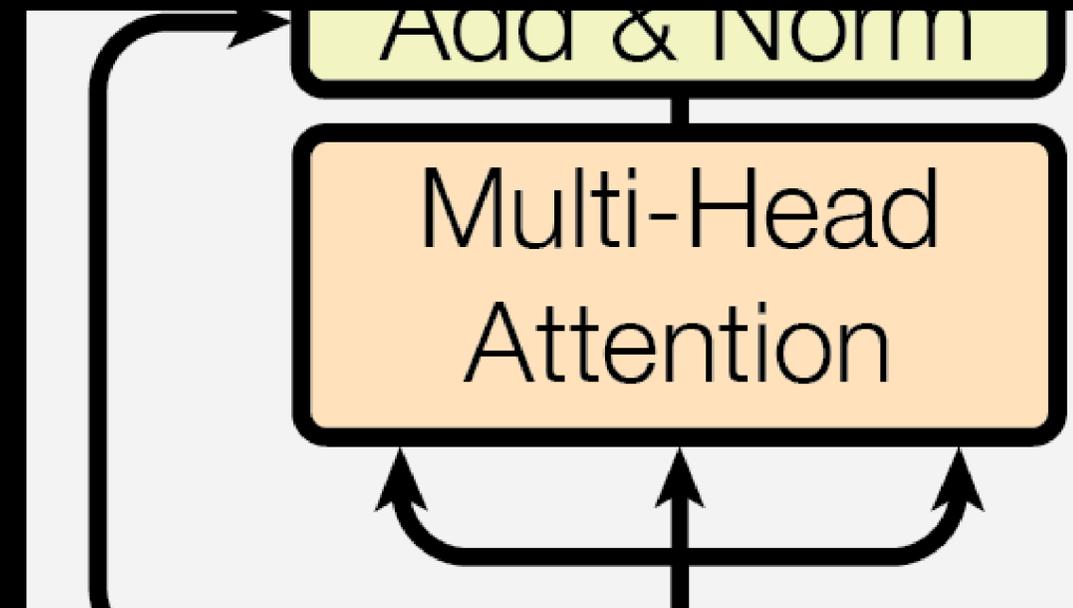
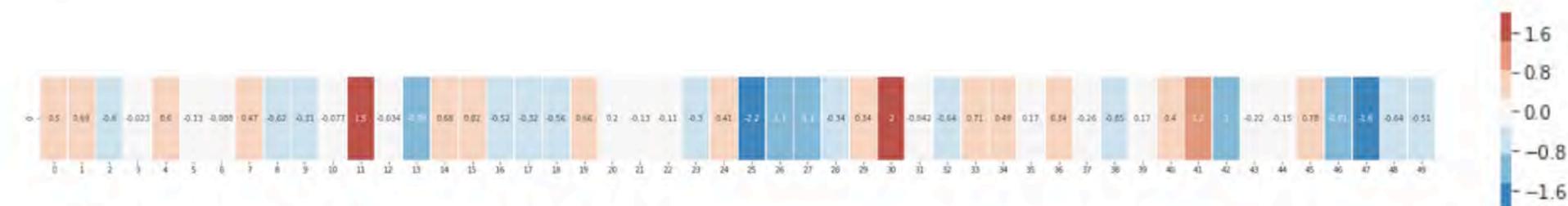
This is a word embedding for the word “king” (GloVe vector trained on Wikipedia):

```
[ 0.50451 , 0.68607 , -0.59517 , -0.022801, 0.60046 , -0.13498 , -0.08813 , 0.47377 , -0.61798 , -0.31012 ,  
-0.076666, 1.493 , -0.034189, -0.98173 , 0.68229 , 0.81722 , -0.51874 , -0.31503 , -0.55809 , 0.66421 , 0.1961  
, -0.13495 , -0.11476 , -0.30344 , 0.41177 , -2.223 , -1.0756 , -1.0783 , -0.34354 , 0.33505 , 1.9927 ,  
-0.04234 , -0.64319 , 0.71125 , 0.49159 , 0.16754 , 0.34344 , -0.25663 , -0.8523 , 0.1661 , 0.40102 , 1.1685 ,  
-1.0137 , -0.21585 , -0.15155 , 0.78321 , -0.91241 , -1.6106 , -0.64426 , -0.51042 ]
```

It's a list of 50 numbers. We can't tell much by looking at the values. But let's visualize it a bit so we can compare it other word vectors. Let's put all these numbers in one row:



Let's color code the cells based on their values (red if they're close to 2, white if they're close to 0, blue if they're close to -2):



We'll proceed by ignoring the numbers and only looking at the colors to indicate the values of the cells. Let's now contrast "King" against other words:

"king"



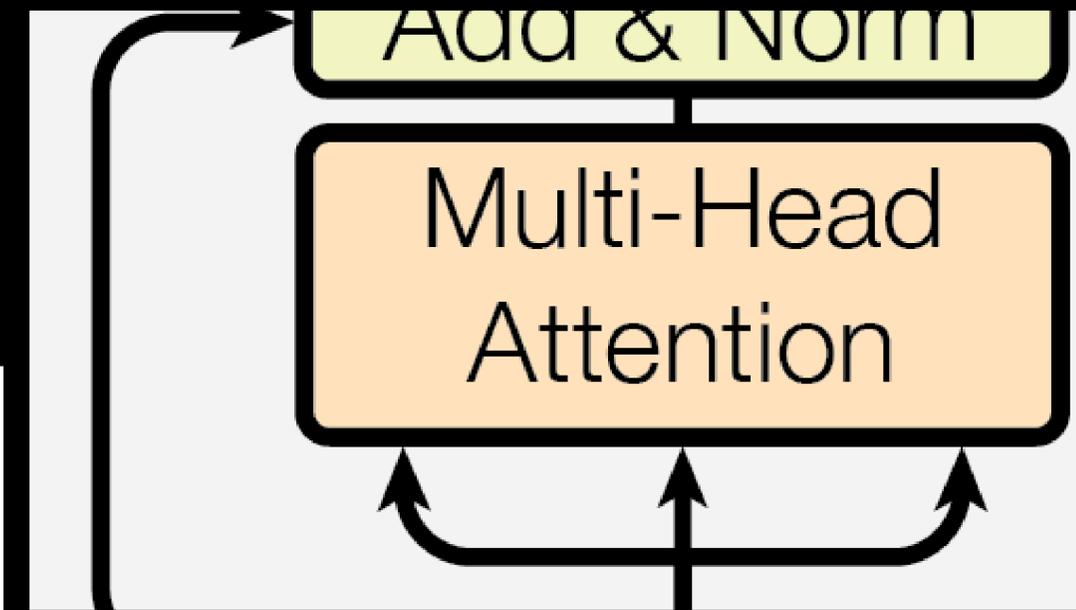
"Man"



"Woman"



See how "Man" and "Woman" are much more similar to each other than either of them is to "king"? This tells you something. These vector representations capture quite a bit of the information/meaning/associations of these words.



queen

woman

girl

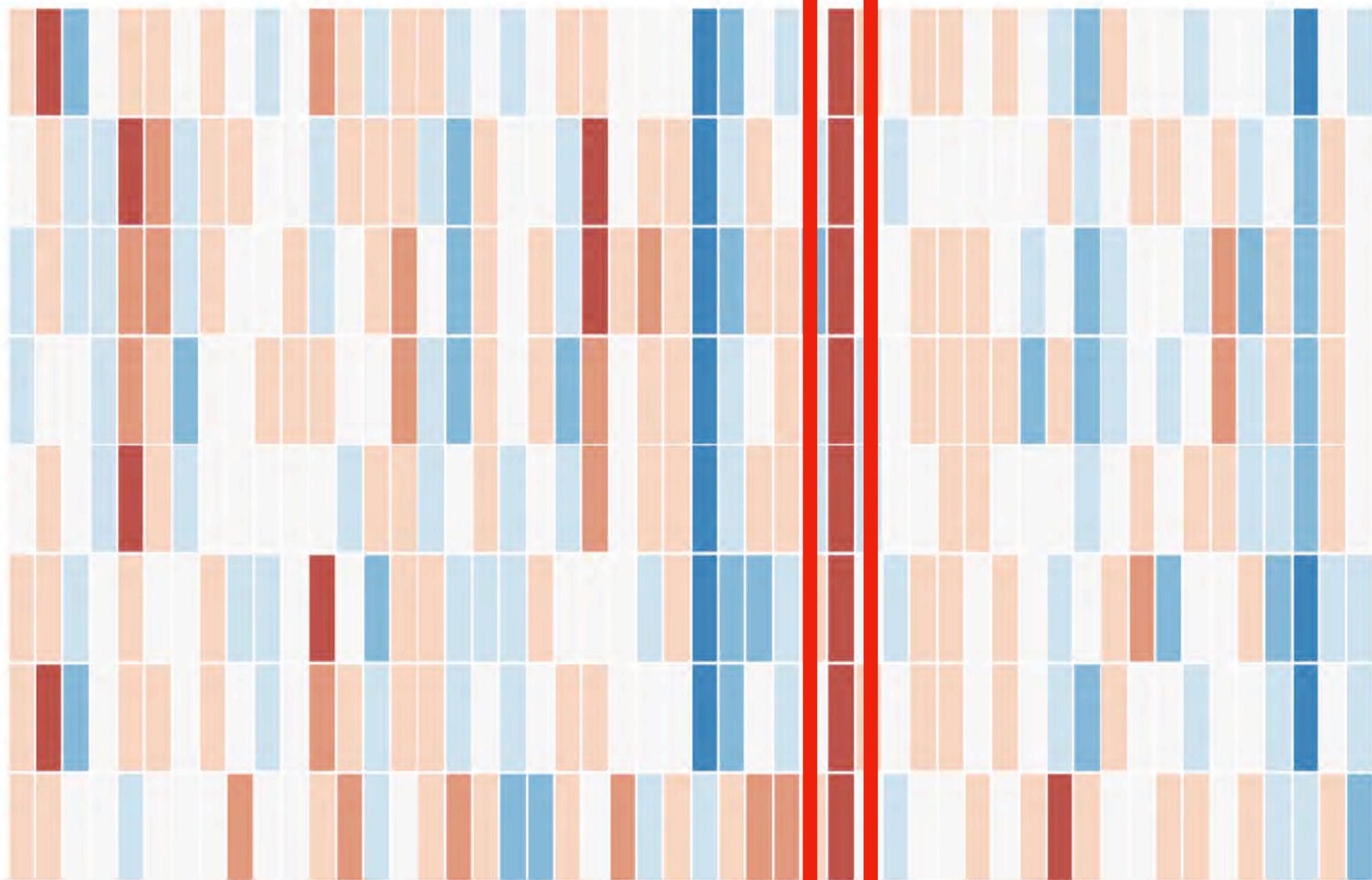
boy

man

king

queen

water



queen

woman

girl

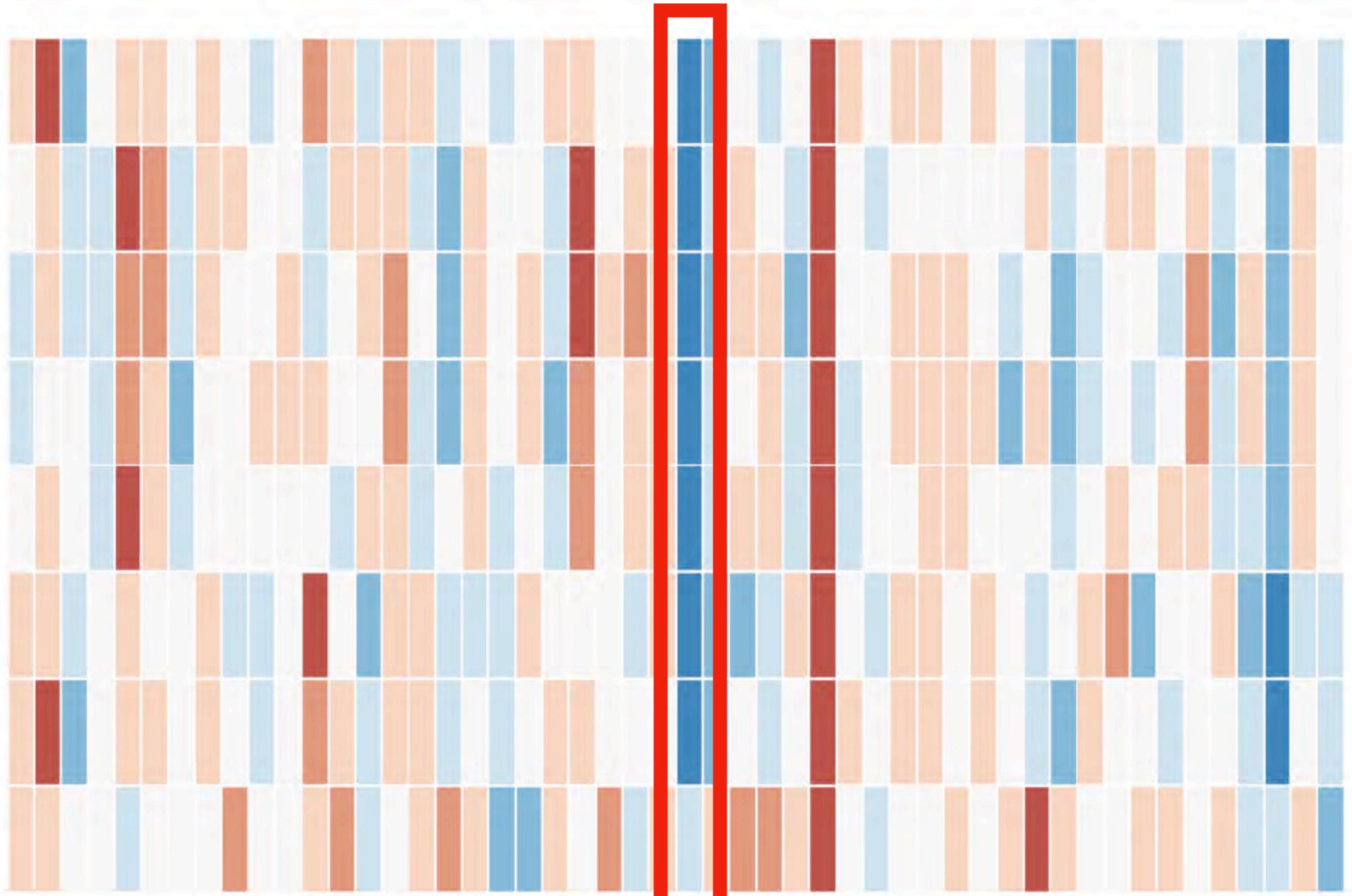
boy

man

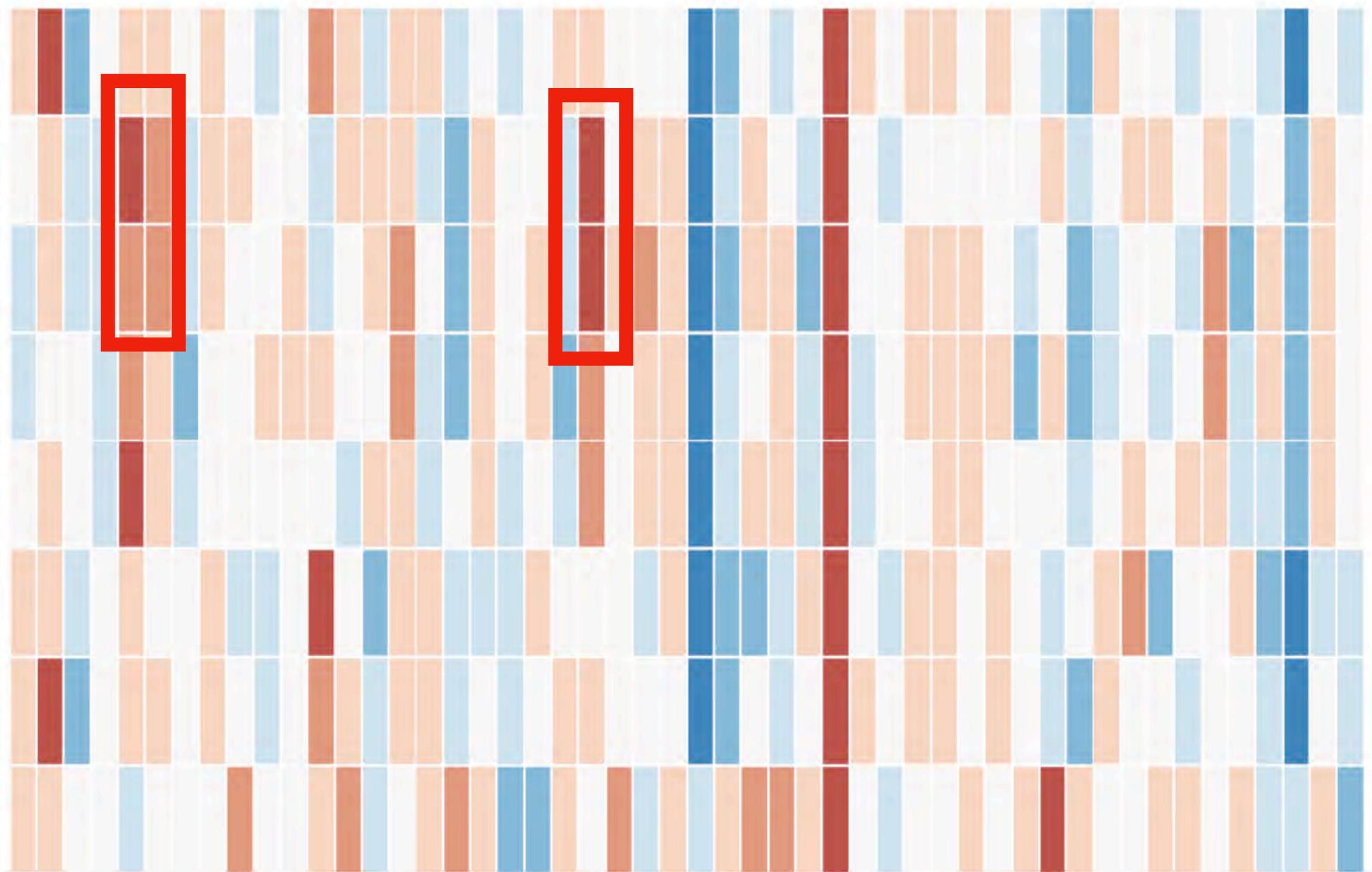
king

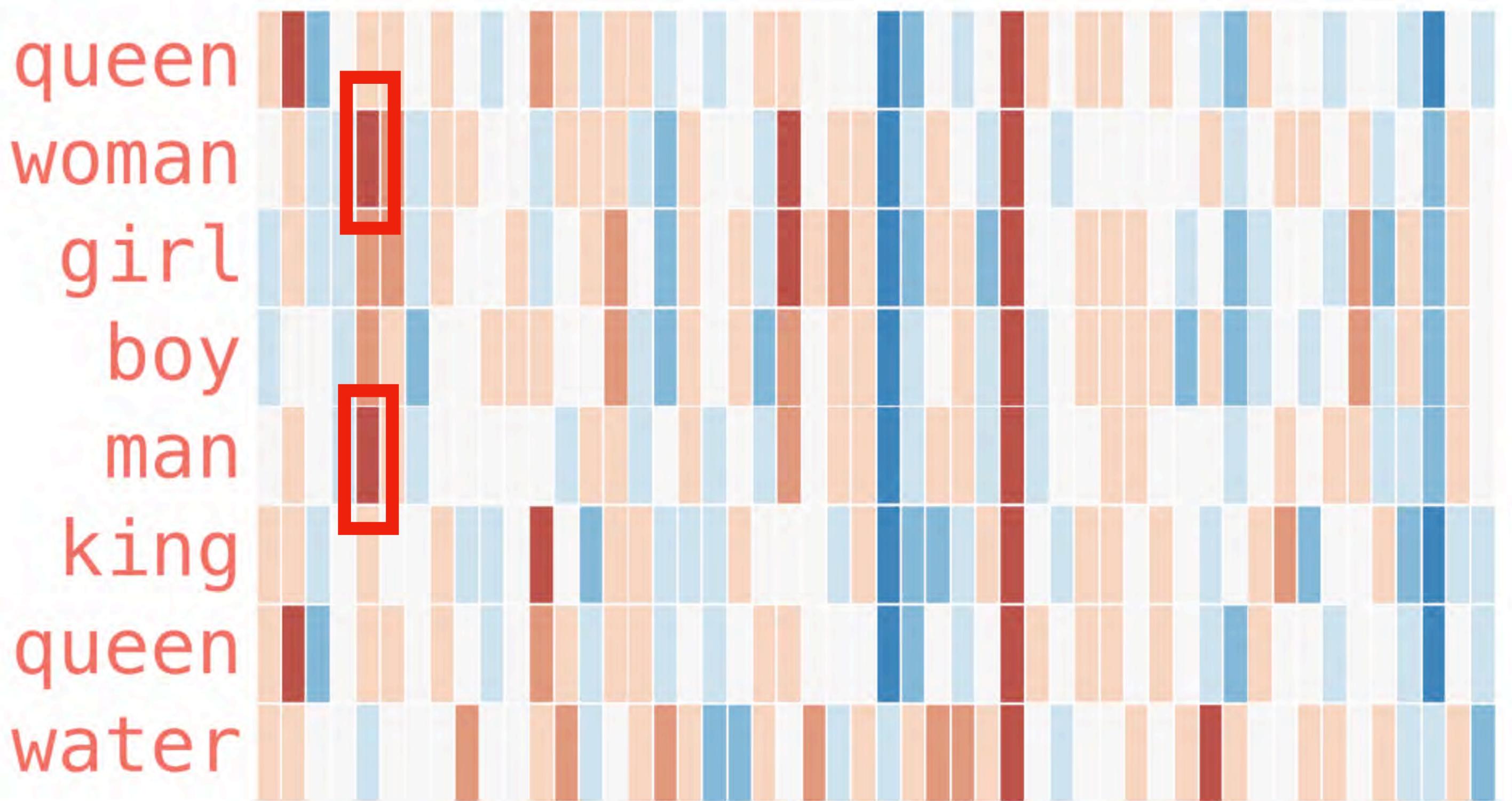
queen

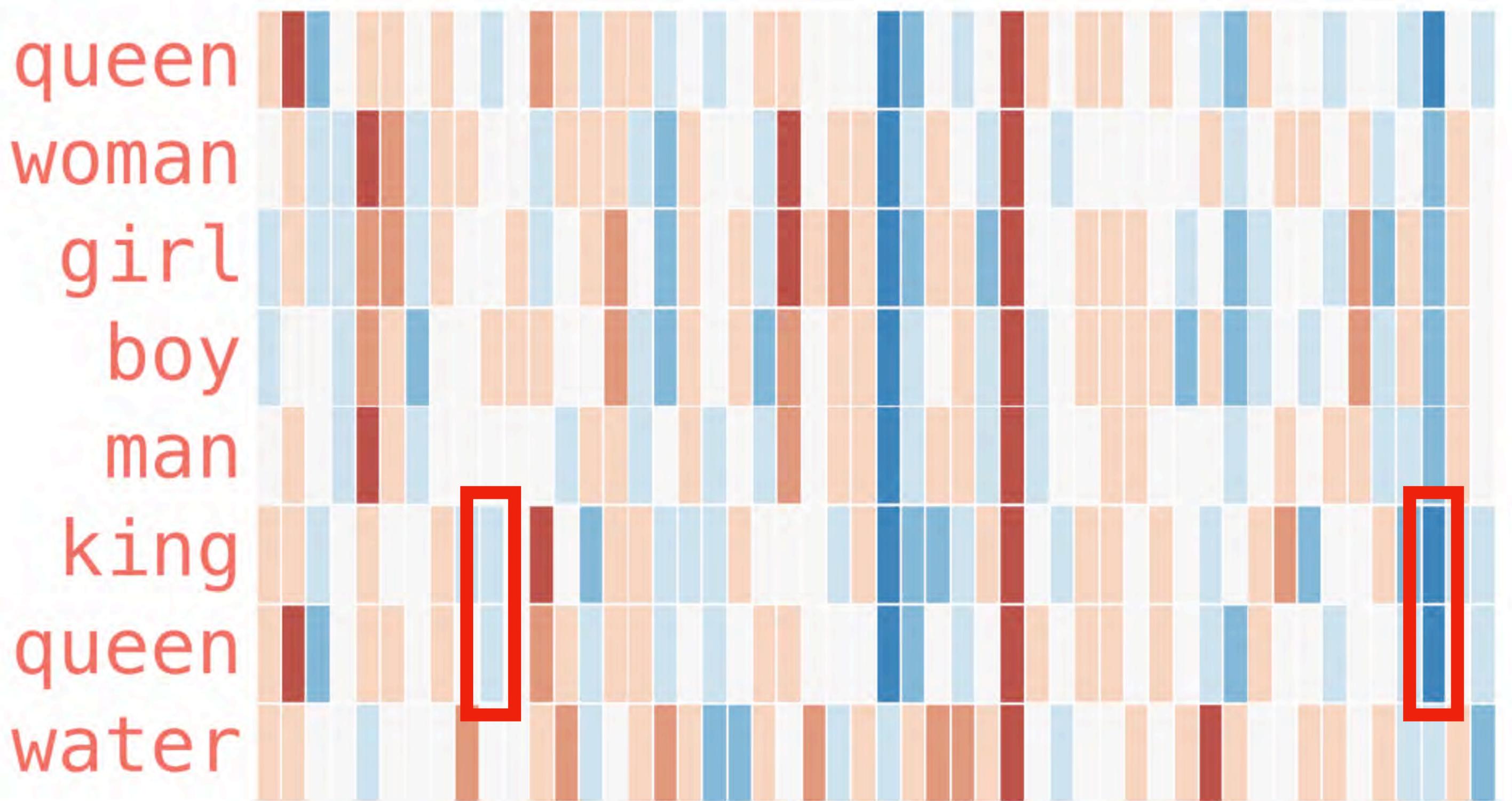
water



queen
woman
girl
boy
man
king
queen
water





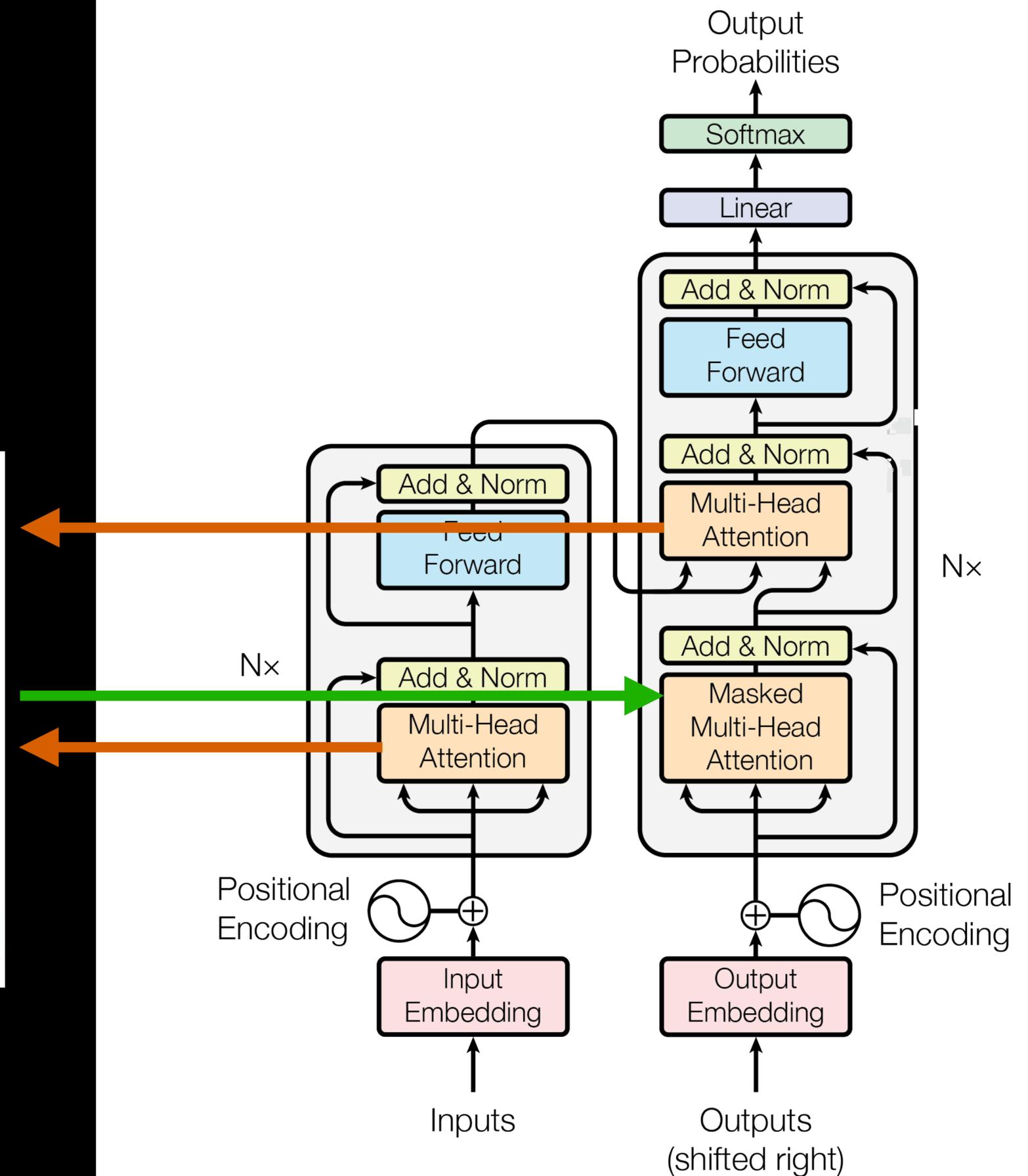
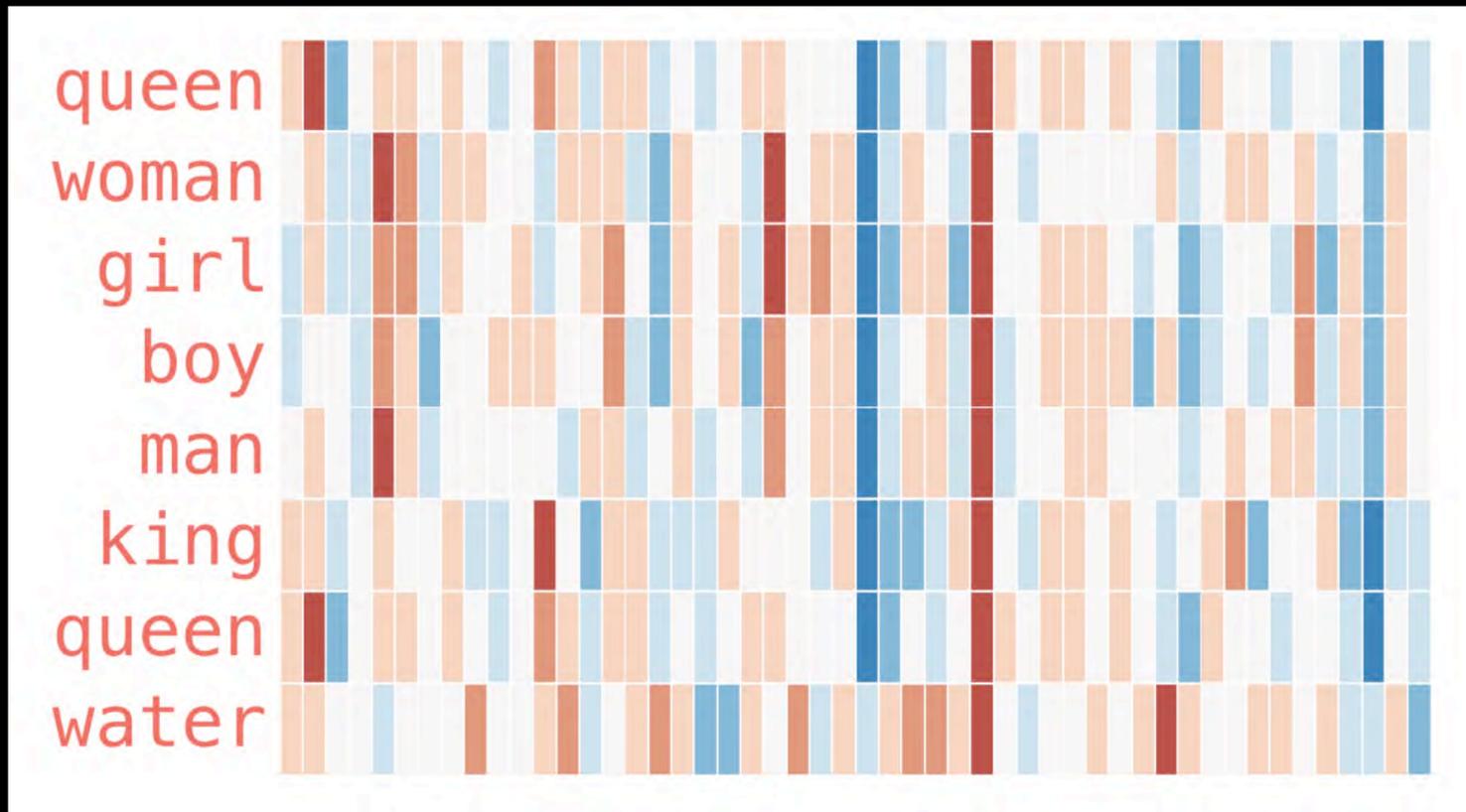


king - man + woman ≈ queen



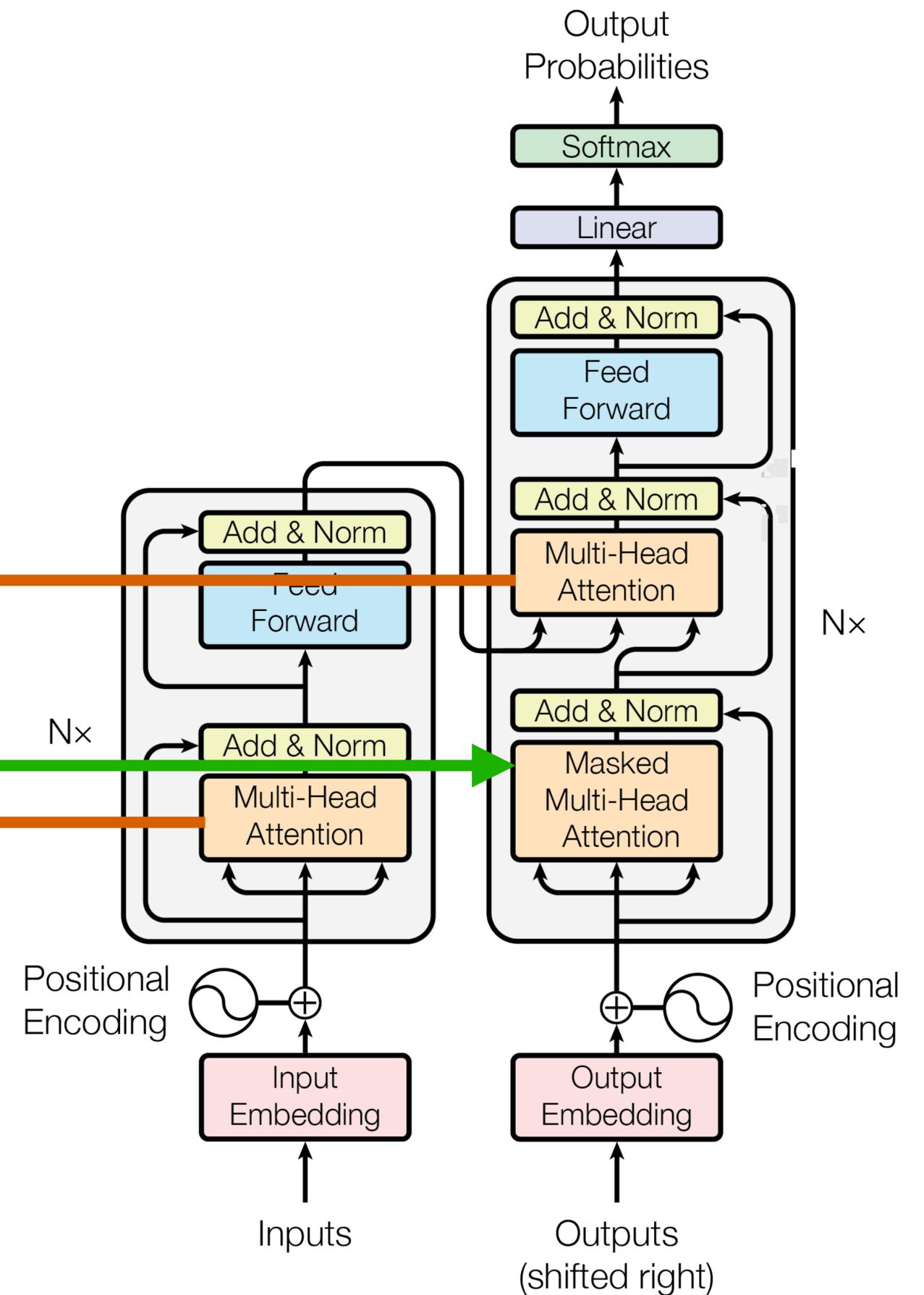
The resulting vector from "king-man+woman" doesn't exactly equal "queen", but "queen" is the closest word to it from the 400,000 word embeddings we have in this collection.

„Transformer Neural Networks“ (TNN):
 Grundlage von ChatGPT
 (z.B. BERT; GPT-3)



Generelles Merkmal von
KI-Technologien im Kontext
humaner/hermeneutischer
Bedeutungswelten:

Big Data-basierte statistische
Normierung von Bedeutung:
quantitative „Wahrscheinlichkeit“
vs. verhältnismäßige
„Wahr-Scheinlichkeit“



Generelles Merkmal von
KI-Technologien im Kontext
humaner/hermeneutischer
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Big Data-basierte statistische
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quantitative „Wahrscheinlichkeit“
vs. verhältnismäßige
„Wahr-Scheinlichkeit“

Das Problem liegt *nicht* in den
Algorithmen/der KI an sich, sondern ...

- 1) *Produktion*: Versuch, **die Simulation von Bedeutung durch Statistik als User Experience zu installieren**, d.h. zu maskieren: User Experience ↔ Compliance als Geschäftsmodell
- 2) *Rezeption*: **Anthropomorphisierung der Maschine** (Verwechslung von Wahrscheinlichkeit und „Wahrscheinlichkeit“)
- 3) *Politik + Wirtschaft*: **Universalisierung und Automatisierung kybernetischer Steuerungslogiken** (Social Engineering, Subjektengineering, Humanengineering, Militär, Polizei, Rechtssprechung)

Generelles Merkmal von
KI-Technologien im Kontext
humaner/hermeneutischer
Bedeutungswelten:

Big Data-basierte statistische
Normierung von Bedeutung:

quantitative „Wahrscheinlichkeit“
vs. verhältnismäßige
„Wahr-Scheinlichkeit“

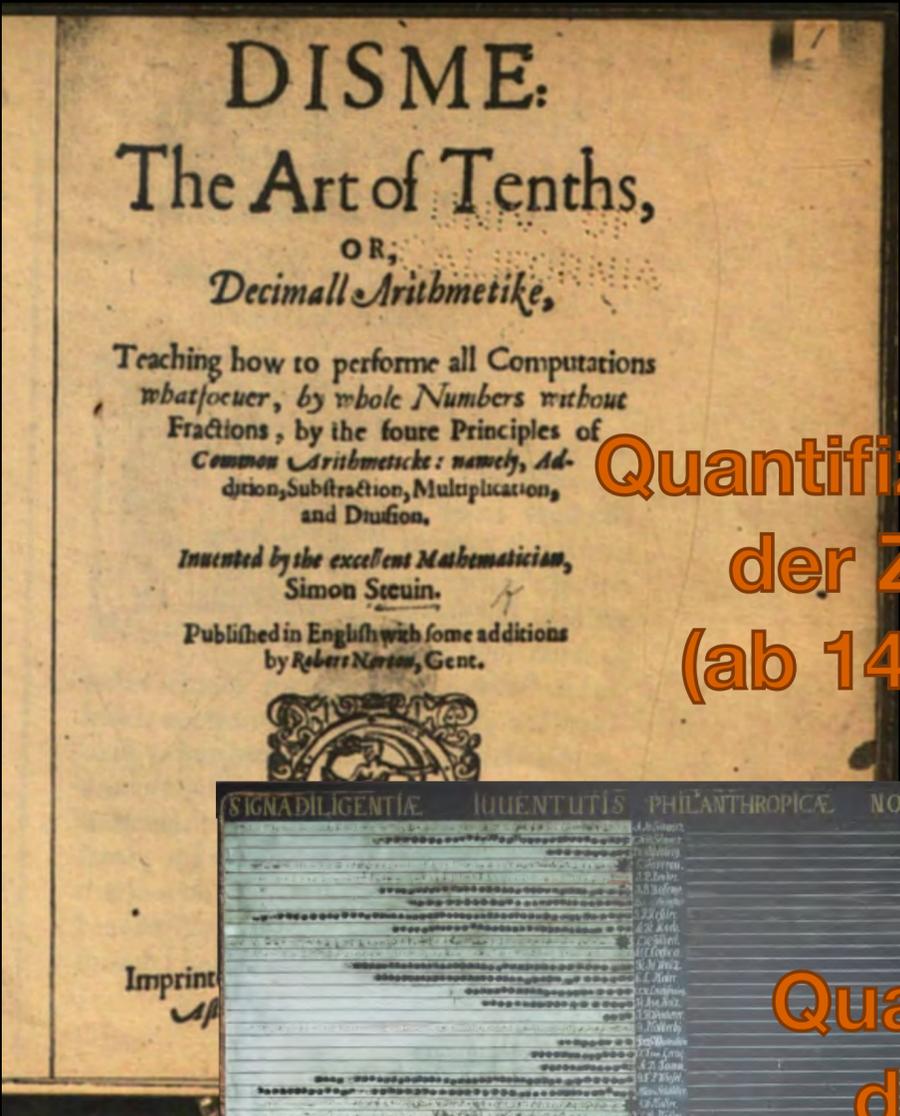
→ zu unterscheidende Ebenen von
Analyse und Kritik:

- 1) **Kritische Analytik/Hermeneutik von KI** auf der Ebene ihrer operativen Logiken (folgender Abschnitt)
 - 1) KI als „andere“, non-humane Intelligenz, aber welche Art von Alterität mit welchen Implikationen?
- 2) **Kritische Rekonstruktion der Praktiken und Policies** in Bezug auf Hervorbringung von und Umgang mit KI, d.h. v.a. ihrer politischen Ökonomie
 - 1) Exklusionen (Datenformate, Daten, Archive)
 - 2) Politiken und Normativitäten, implizite Ideologien (Ground truths, Firmenpolicies des Trainings und Finetunings)

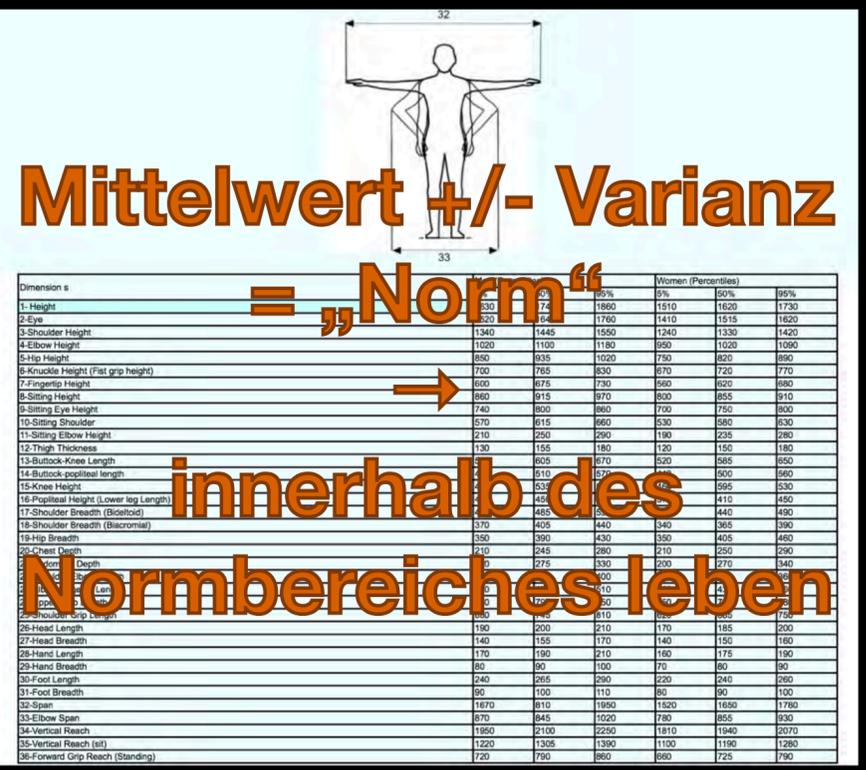


Algorithmische
Rationalität
oder „alien
space of
reasoning“?

Stable Diffusion XL; prompt „alien space of reasoning“

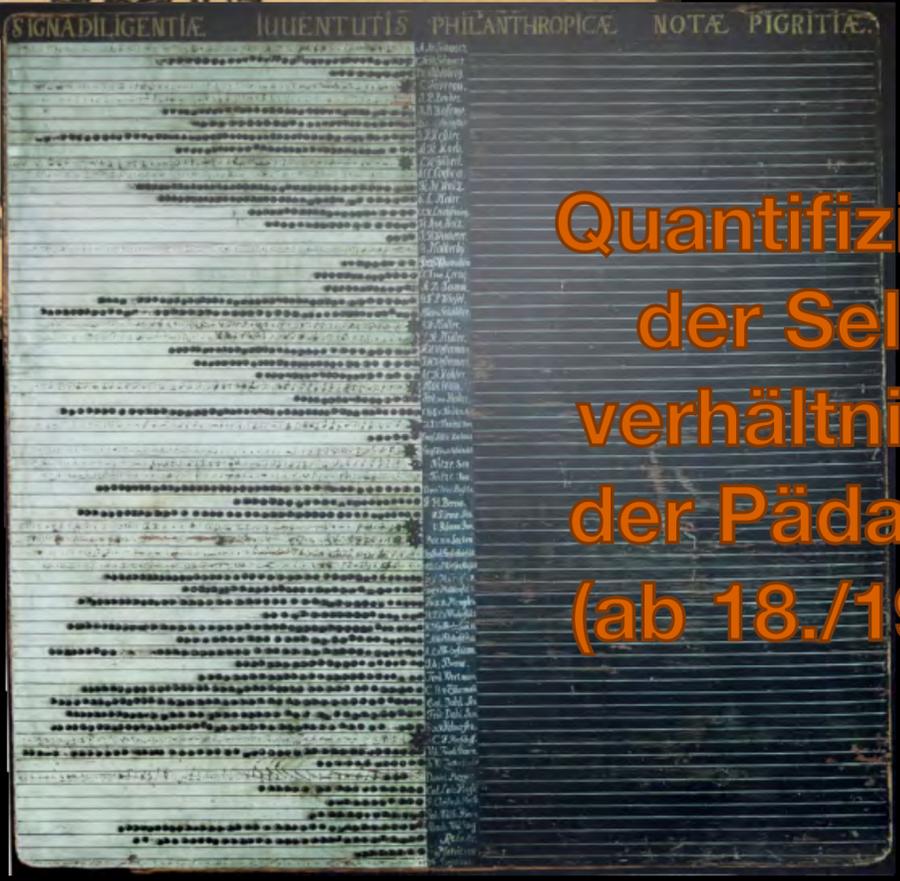


Quantifizierung
der Zahl
(ab 14. Jh.)



„Wahrscheinlichkeit“
„probability“

innerhalb des
Normbereiches leben



Quantifizierung
der Selbst-
verhältnisse &
der Pädagogik
(ab 18./19. Jh.)



„likeness“
„eikos logos“
„Wahr-Scheinlichkeit“

AlphaGo Zero

Starting from scratch



Subjektivität als Supplement

„Humankind has accumulated Go knowledge from millions of games played over thousands of years, collectively distilled into patterns, proverbs and books.

In the space of a few days, starting tabula rasa, AlphaGo Zero was able to rediscover much of this Go knowledge, as well as novel strategies that provide new insights into the oldest of games“ (Silver 2017, 358).

Silver, D., Schrittwieser, J., Simonyan, K., Antonoglou, I., Huang, A., Guez, A., ...
Hassabis, D. (2017). Mastering the game of Go without human knowledge.
Nature, 550(7676), 354–359. <https://doi.org/10.1038/nature24270>

KI (nach Dieter Mersch)	KI (nach Luciana Parisi)
unverselle Computierbarkeit	Unverfügbarkeit als grundsätzliches, immanentes Moment digitaler (Turing-) Maschinen
vollständige Berechenbarkeit	„Halteproblem“; „Zufälle/Unfälle und Fehler“ als integraler „Bestandteil der interaktiven laufenden Arbeit mit kollidierenden Daten“
deduktive formale Geschlossenheit	affektgeladen durch menschengemachte Daten
algorithmische Rationalität	„alien space of reasoning“; Hegemonialität nicht grundsätzlich, sondern Folge hegenomnialer Praxis
unkreatives, totales Kontrollparadigma	kreativer Kontrollverlust (wo nicht hegemonial eingehegt)

Mersch, D. (2019). Kreativität und Künstliche Intelligenz. Einige Bemerkungen zu einer Kritik algorithmischer Rationalität. Zeitschrift für Medienwissenschaft, 11(2), 65–74. <https://doi.org/10.25969/mediarep/12634>

Parisi, L. (2019). The alien subject of AI. Subjectivity, 12(1), 27–48. <https://doi.org/10.1057/s41286-018-00064-3>



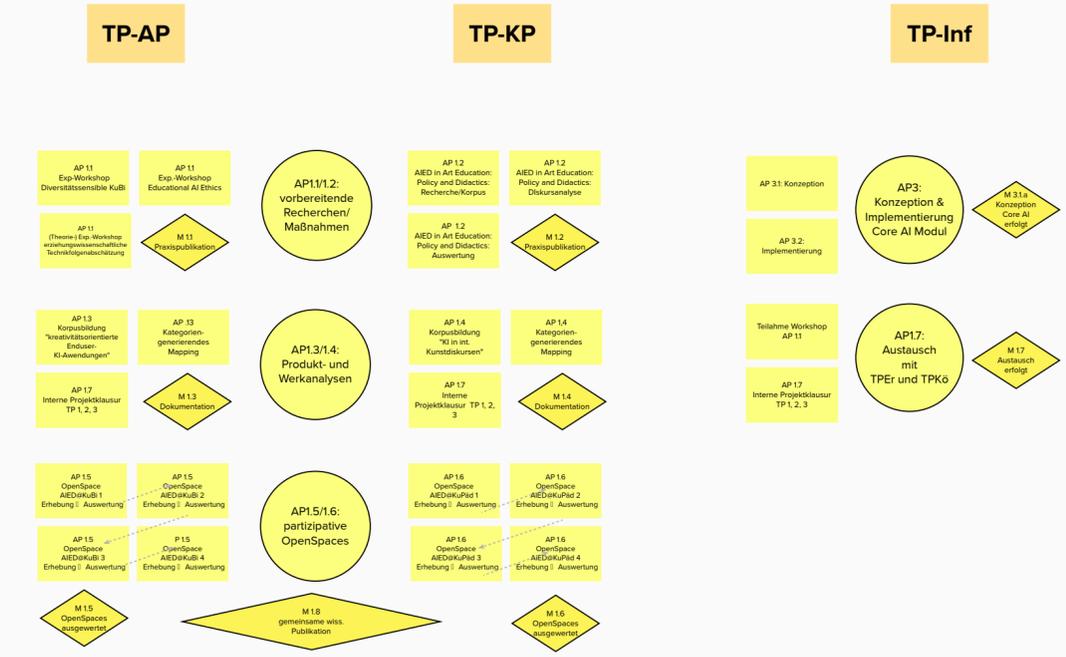
ARTIFICIAL INTELLIGENCE FOR ARTS EDUCATION (AI4ARTSED)



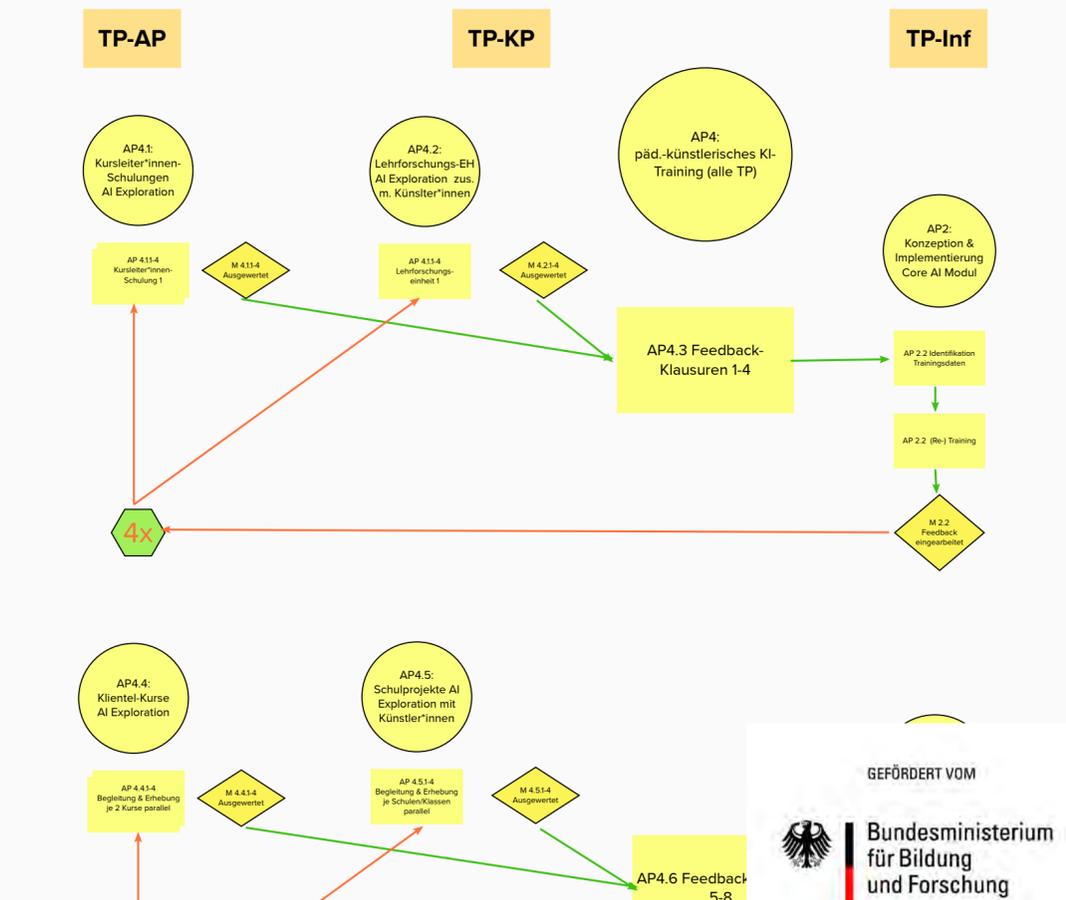
ARTIFICIAL INTELLIGENCE FOR ARTS EDUCATION – AI4ARTSED

KI verändert Gesellschaft und Arbeitswelt; sie wird zunehmend Thema der Bildung. Das Projekt sondiert die Chancen, Einsatzbedingungen und strukturellen Grenzen des Einsatzes partizipatorisch ausgerichteter künstlicher Intelligenz (KI) in kulturell diversitätssensiblen künstlerisch-pädagogischen Settings der Kulturellen Bildung. Welche und Chancen, Bedingungen und Grenzen des pädagogischen Einsatzes künstlicher Intelligenz (KI) bestehen in kulturell diversitätssensiblen Settings der Kulturellen Bildung (KuBi)? In drei Teilprojekten – Allgemeinpädagogik (TPap), Informatik (TPinf) und Kunstpädagogik (TPkp) – greifen kreativitätsorientierte pädagogische KI-Praxisforschung und informatische KI-Konzeption und Pro...

2024



2025



<https://www.ucace.fau.de/research>



https://www.zotero.org/groups/4643604/ai_in_arts_and_creative_education_curated/search/UNESCO/titleCreatorYear/items/4N7YDPZM/item-list

<https://t1p.de/ai4artsed>

zotero

Q Title, Creator, Year



- My Library
- Group Libraries
- AI in Arts und Creative Education...
- 0_AI4ArtsEd focus
 - AI Ethics (general, except edu)
- AI in Education (general)
 - AI Methodologies
 - AI Theory & History
 - AIED Bibliometry, Research R...
 - German Contributions (FIS Bil...
 - Information Science
 - Machine Learning/Deep Learn...
 - Sustainability/SD
 - x_tmp
 - Trash
- Arbeitskreis Ästhetik – Digitalität ...
- deprecated
- DiKuBi-Meta
- Lehrstuhl + UNESCO Chair Erlan...
- MetaKuBi
- PAI-Ed
- Publications Jörissen (deprecated)
- US Latina/o Digital Humanities

Creator	Title	Year
Lee and Kwon	A systematic review of AI education in K-12 classrooms from 2018 to 2023: T...	2024
Essel et al.	ChatGPT effects on cognitive skills of undergraduate students: Receiving ins...	2024
Martin et al.	Systematic review of research on artificial intelligence in K-12 education (201...	2024
Hwang et al.	How does ChatGPT evaluate the value of spatial information in the 4th indust...	2024
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Green	Review of Jeremy Knox (2023). AI and Education in China: Imagining the Futu...	2024
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Rond et al.	A meta systematic review of artificial intelligence in higher education: a call f...	2024

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Item Type: Journal Article

Title: A systematic review of AI education in K-12 classrooms from 2018 to 2023: Topics, strategies, and learning outcomes

Author: Lee, Sang Joon

Author: Kwon, Kyungbin

Publication: Computers and Education: Artificial Intelligence

Volume: 6

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Date: 2024-06-01

Journal Abbr: Computers and Education: Artificial Intelligence

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ISSN: 2666-920X

Short Title: A systematic review of AI education in K-12 classrooms from 2018 to 2023

URL: <https://www.sciencedirect.com/science/ar...>

Abstract

AI education aims to teach AI concepts, essential knowledge, and skills related to the fundamental ideas in AI. As AI becomes increasingly prevalent in our daily lives, schools and educators have started to recognize the importance of AI education in K-12 schools. However, there have been a limited number of studies reporting on the implementation of AI education in classrooms. This systematic review aimed to provide an overview of the current state of AI education in K-12 schools, exploring topics, instructional approaches, and learning outcomes. Twenty-five peer-reviewed journal articles published between 2018 and 2023 were selected for this systematic review. The findings highlighted that various topics were covered in K-12 AI education, including fundamental AI concepts, different types of AI, AI applications, and ethical considerations related to AI. To facilitate meaningful learning experiences, educators frequently integrated hands-on activities and project-based learning. The findings supported the benefits of AI education in enhancing students' AI literacy, problem-solving skills, and ethical reflections on AI's societal impact. Furthermore, it fostered motivation, positive attitudes toward AI, and an interest in technology while inspiring career

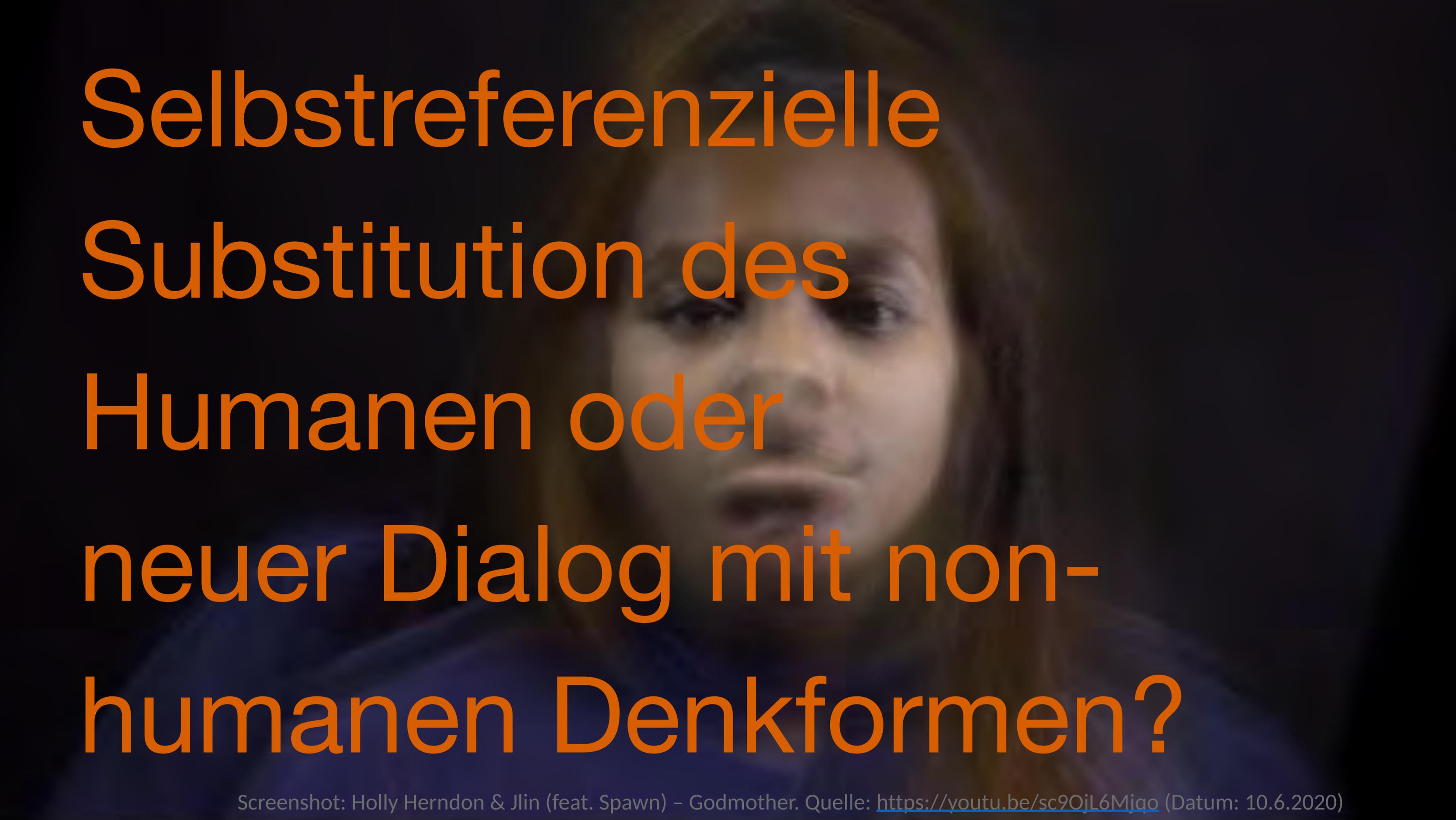
ARTIFICIAL INTELLIGENCE FOR ARTS EDUCATION (AI4ARTSED)



ARTIFICIAL INTELLIGENCE FOR ARTS EDUCATION – AI4ARTSED

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Selbstreferenzielle
Substitution des
Humanen oder
neuer Dialog mit non-
humanen Denkformen?



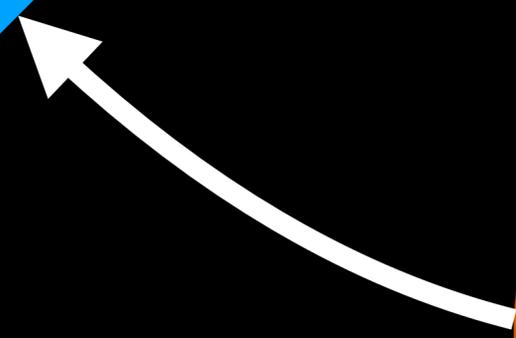
kulturelle, ges.
& individuelle
Praxis

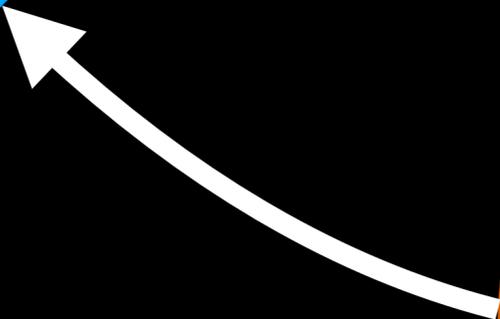
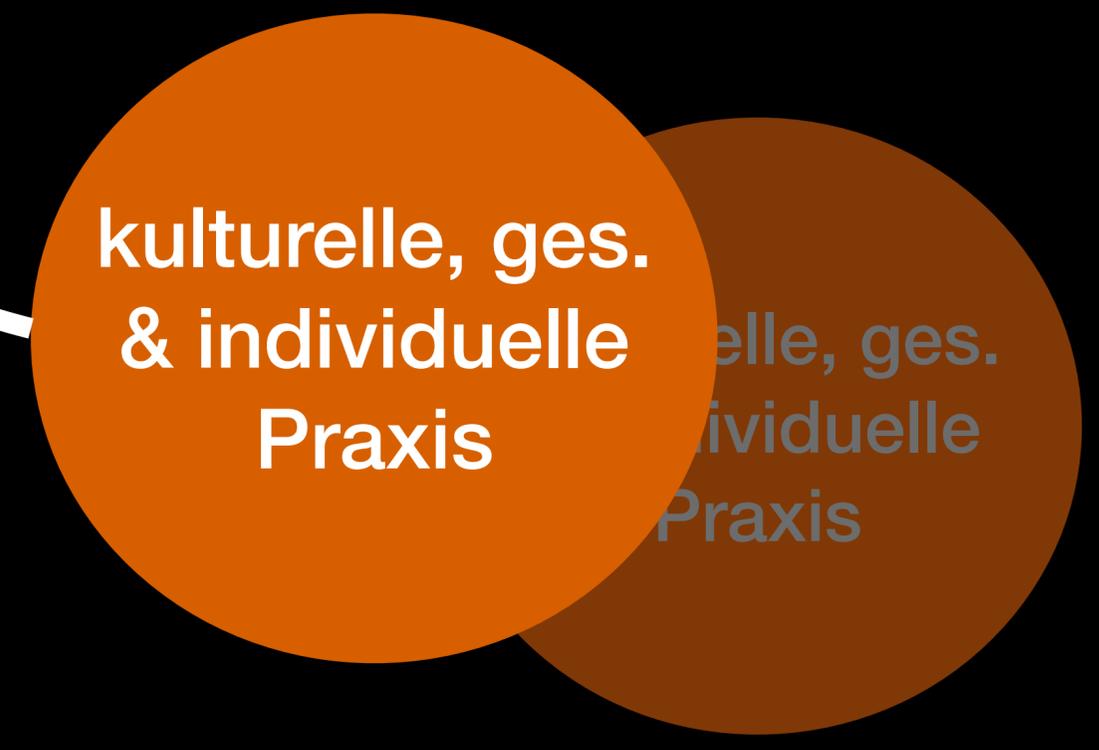
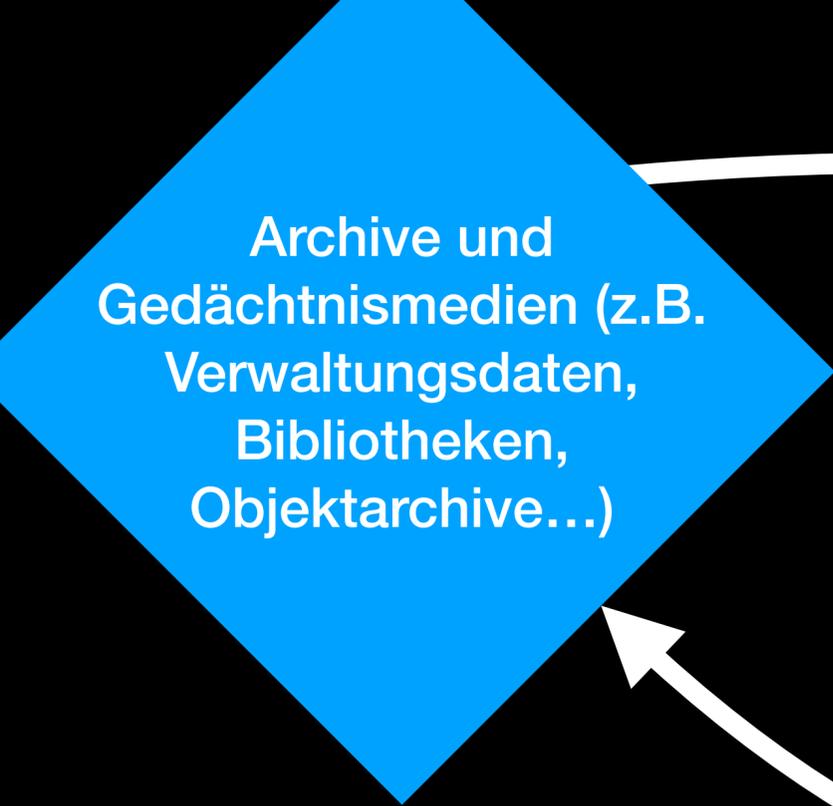
elle, ges.
individuelle
Praxis

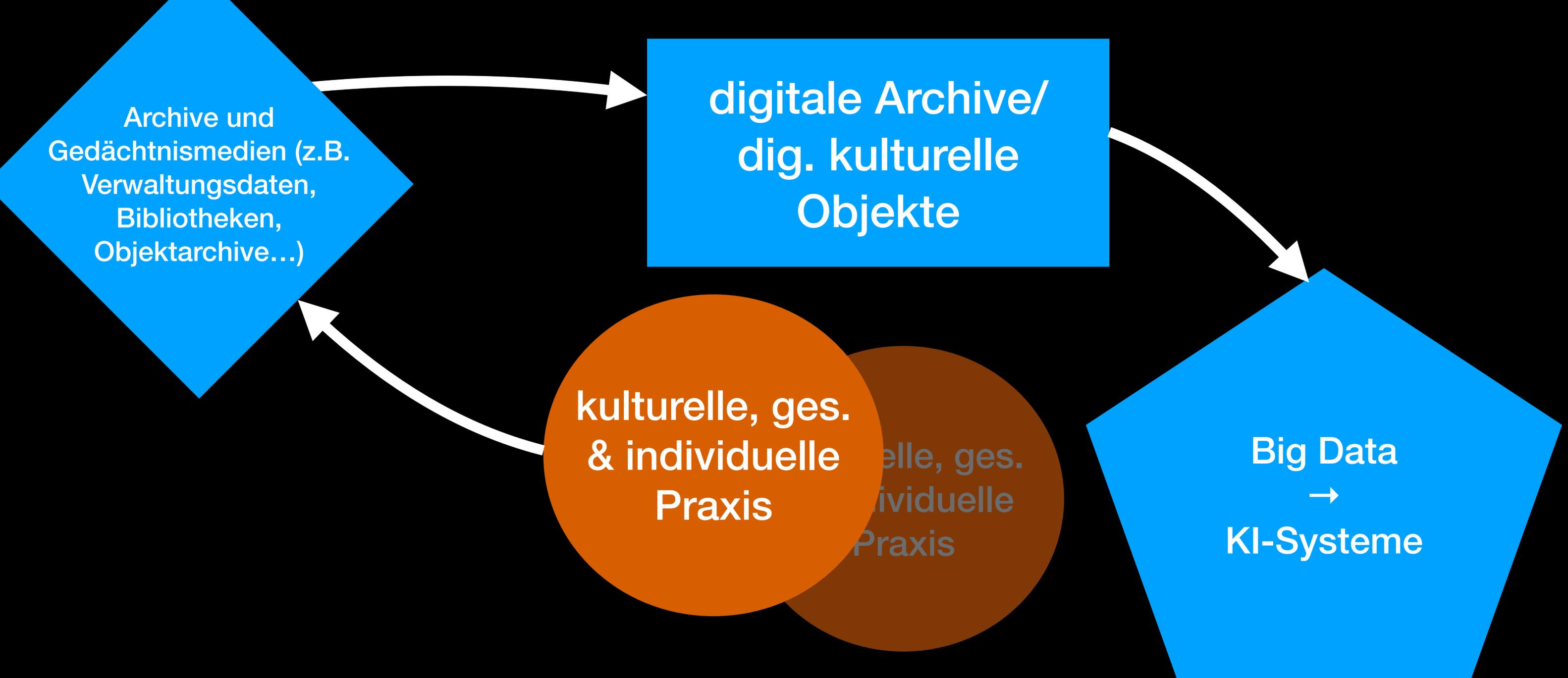
Archive und
Gedächtnismedien (z.B.
Verwaltungsdaten,
Bibliotheken,
Objektarchive...)

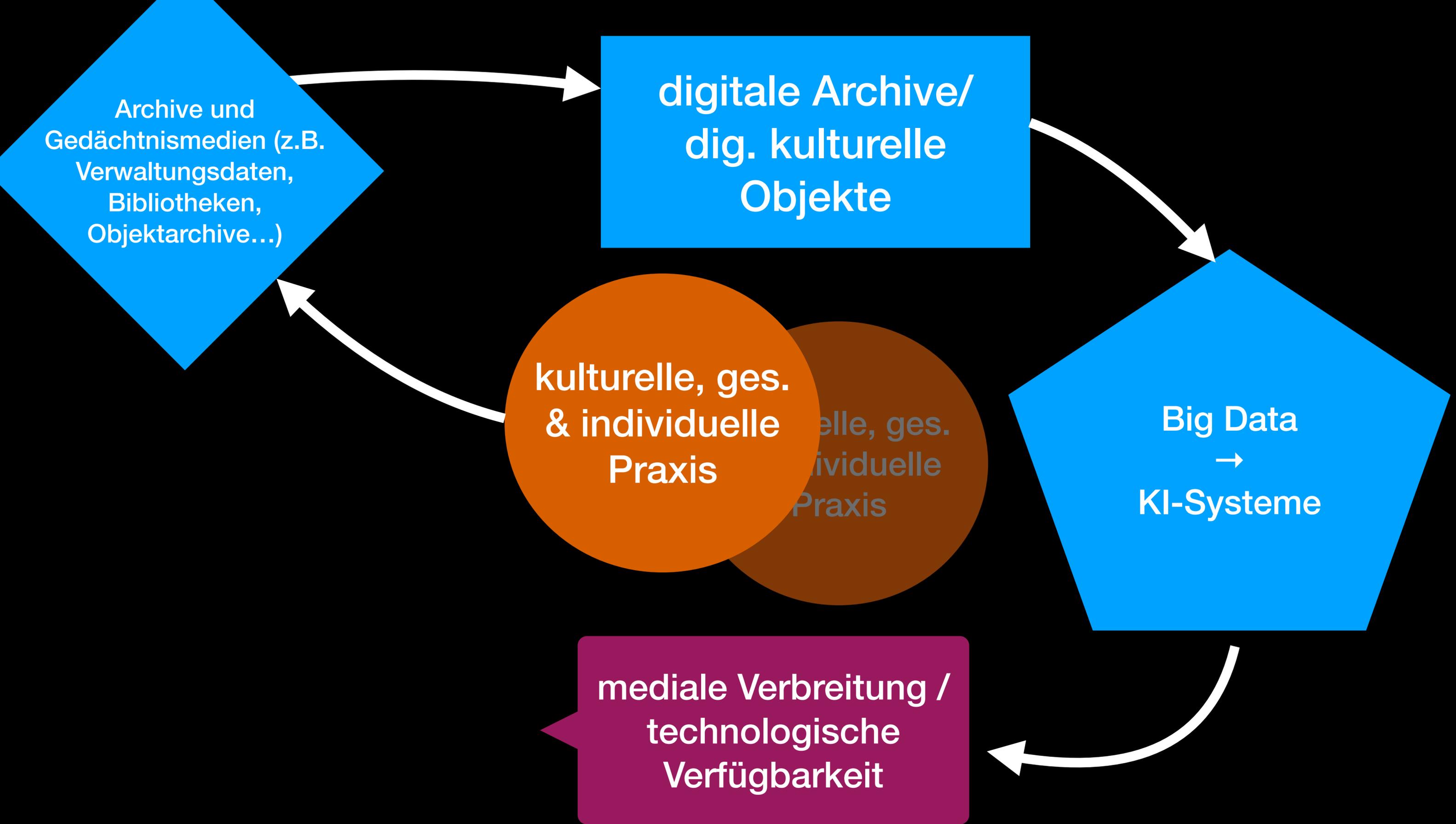
kulturelle, ges.
& individuelle
Praxis

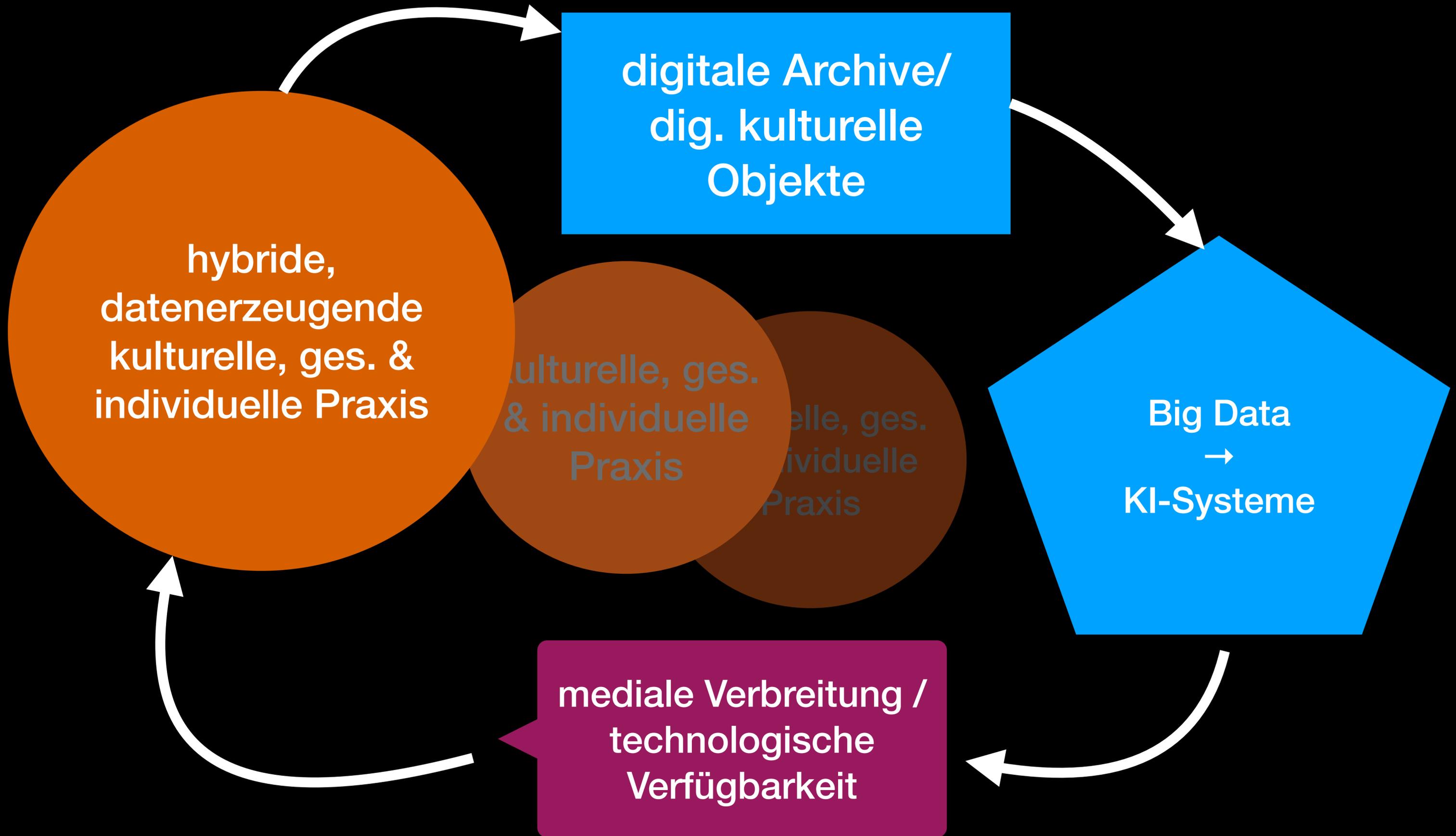
kulturelle, ges.
& individuelle
Praxis











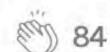
Member-only story

Ouroboros of AI: The peril of generative models feeding on their creations



Gilles de Peretti · Follow

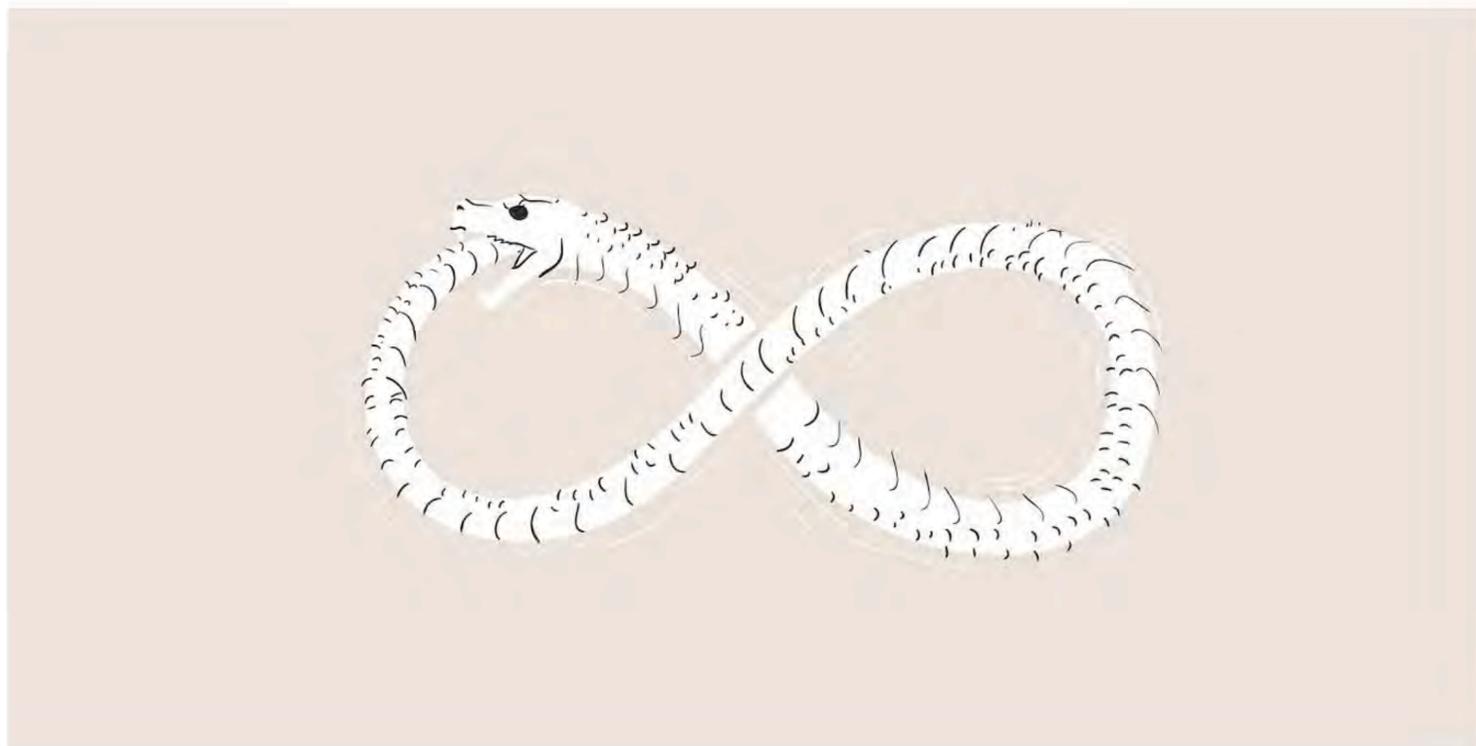
4 min read · Nov 19, 2023



84



1





Suchen...



Künstliche Intelligenz

Die schöne neue Welt der virtuellen Influencer

Eine neue Generation von Influencer:innen mischt weltweit die Szene auf. Die Sache ist nur: Es gibt sie nicht wirklich. Sie entstehen am Computer, haben zigtausende Follower und verwischen die Grenze zwischen Fiktion und Wirklichkeit.

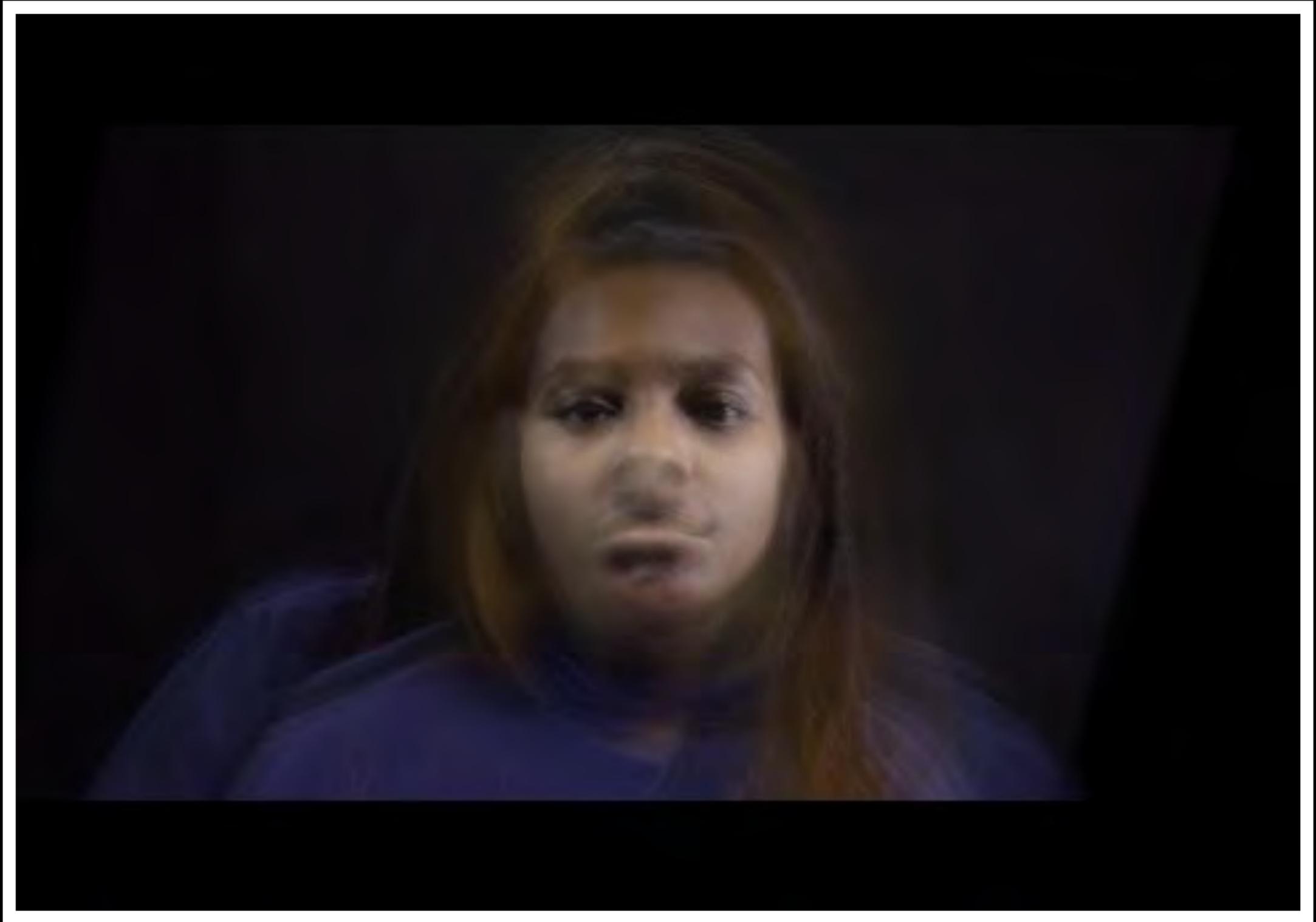
23.09.2023 um 06:59 Uhr - Markus Reuter - in Kultur - 14 Ergänzungen



Bildgeneratoren schaffen exakt die Ästhetik, die echte Influencer mühevoll inszenieren.

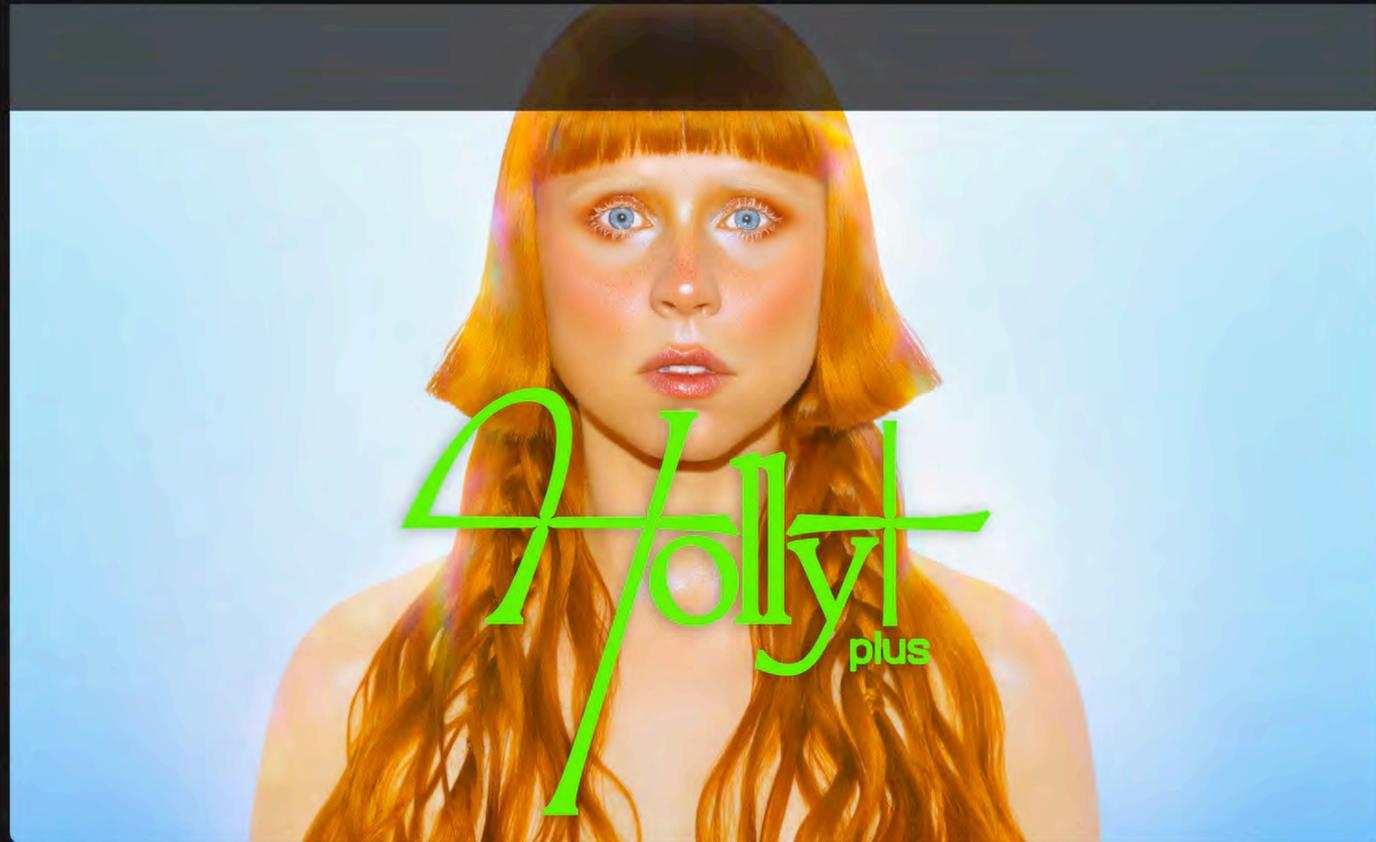
– Public Domain generiert mit Midjourney / Prompt: „woman on green palm tree at Tulum Beach,

artistic creation
as hybrid
aesthetic decision-
making



Screenshot: Holly Herndon & Jlin (feat. Spawn) – Godmother

Quelle: <https://youtu.be/sc9OjL6Mjgo> (Datum: 10.6.2020)



👤 : Andrés Mañón

I'm excited to finally share something I have been working on for the last year ✨ [Holly+](#)

I am releasing [Holly+](#) in collaboration with [Never Before Heard Sounds](#), the first tool of many to allow for others to make artwork with my voice, and will distribute ownership of my digital likeness through the creation of the Holly+ DAO 👯

My voice is precious to me! It is 1 of 1 🤖

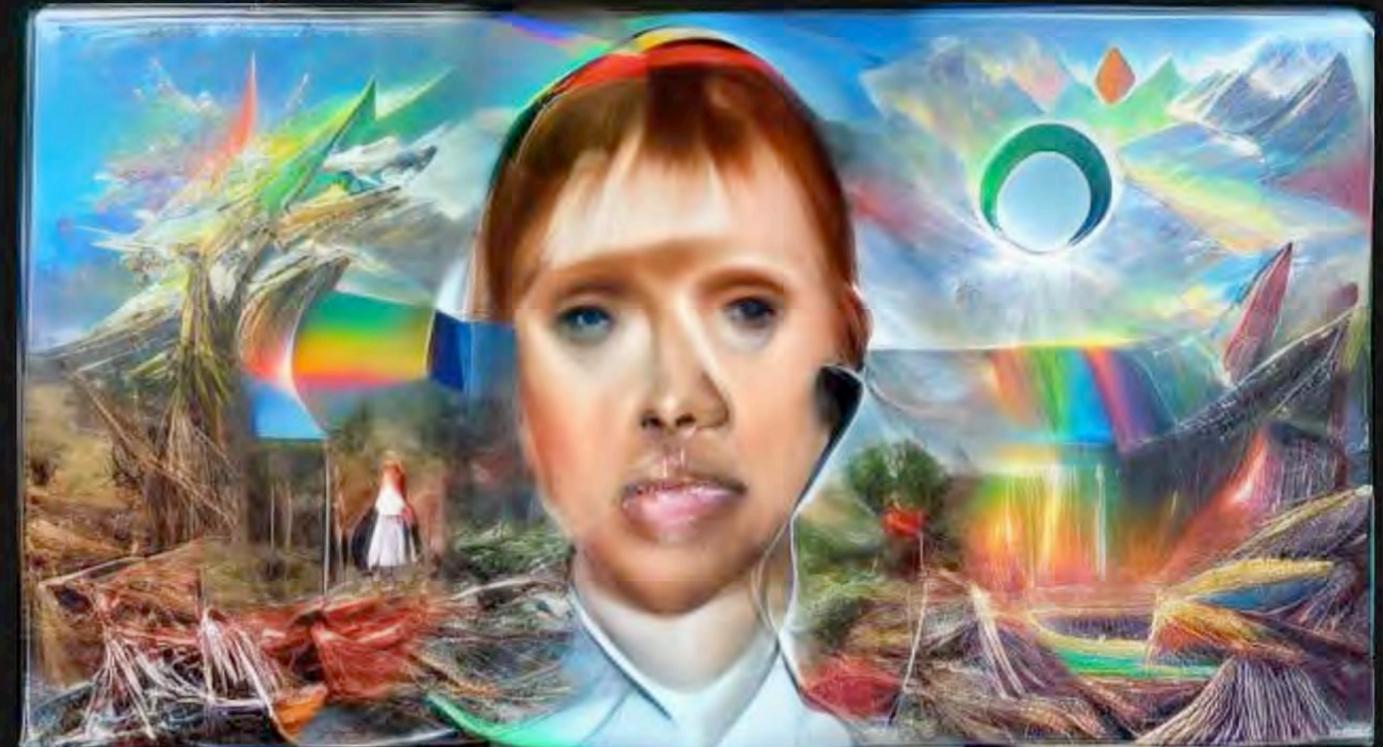
Voice Models, in combination with machine learning technology, already allow for anyone to clone a voice to generate music and media, and the opportunities and complications inherent to these techniques will only intensify!

This development raises novel questions about voice ownership that I think can be addressed by DAO governance 🍷

Who am I?

I'm an artist and composer 🤖 who has been working with machine learning for many years. My last album [PROTO\(4AD,2019\)](#) was the first to utilize singing neural networks and I completed my Doctorate at [Stanford's Center for Computer Research in Music and Acoustics](#), where my research focus was on the interplay between machine learning and the voice, and the implications of this technology for IP and vocal sovereignty 🤖

Some AI models already know who I am! Here are some images spawned from my likeness using [OpenAI's CLIP model](#) 🤖



Künstliche Intelligenz als Wahrnehmungskrise: theoretische und ästhetische Herausforderungen

Forschungsforum „Wahrnehmungskrisen“

29. Kongress der Deutschen Gesellschaft für
Erziehungswissenschaft, Halle, 13.3.2024

