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How should the generative power of Large Language Models (LLMs) be interpreted? Do chatbots understand linguistic meaning?

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Abstract: How can we explain that contemporary AI chatbots provide appropriate, sometimes complex answers to many questions, yet neither understand the human language nor have access to the world? This essay attempts to answer this question in eight steps: 1. Anthropomorphism should be avoided because diversity, not similarity, forms the basis for successful human-technology interactions. 2. The cultural technique of flattening (illustrated/inscribed inscriptions) offers creative potential for social epistemology and is a springboard for digitalization. 3. Humans restore the amputated depth dimension of artificial flatness through interpretation. 4. Computers analyze and synthesize huge data collections using surface technology, i.e., without interpretation, as patterns only. Behaving like a machine is also a proven template that has historically enriched all cultural techniques of formalizing symbolism. 6. *Written* colloquial language functions in two dimensions: as the content of human-interpretable linguistic expression and machine-operable token statistics. 7. Token relations form socially sedimented, 'unconscious' knowledge, which is processed by trained AI algorithms. 8. The duality of perspectives of human-interpretable language and machine-operable token statistics is the basis of the potential of contemporary AI.

Keywords: anthropomorphism; alternative intelligence; cultural technique of flattening; 'poststructuralist paradise'; combinatoric; R. Lullus; G. W. Leibniz; token-statistics; meaning blindness

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1 The question

1 The contemporary debate on synthetic or generative media is complex and challenging to grasp. However, one question provides an axis along which many contributions can gradually be sorted: Do chatbots based on Large Language Models (LLMs) understand linguistic meaning? With two answers, we can characterize the endpoints and opposite positions on this axis: Either (i) the chatbots operate only based on token statistics by calculating the most probable following sequence of words or sentences that can be considered plausible answers. In this case, LLM-based media operate 'meaning-blind,' i.e., without understanding language. Alternatively, (ii) the performance of chatbots can only be explained if they have a human-like understanding of linguistic semantics, i.e., grasping the meaning of human utterances via their underlying LLMs. In this case, they operate 'meaning-sensitive' and are always guided by a human-like understanding of what they produce as character strings in their output.

2 In the following, we will not sketch the cartography of this debate. Instead, we want to argue for the side of a meaning-blindness of chatbots, albeit with ideas that have received too little attention in the debate so far. Ultimately, it is certainly possible that our view can be interpreted as a third position beyond meaning-blindness and meaning-sensitivity. After all, the meaning-blindness towards human language that we advocate as the operative potential of machines is not simply a reduction, a deficit, or a deficiency. Rather, it constitutes a genuine productive force: Not interpreting meaning is characteristic of machine sign processing, but it is also an operative procedure of human symbol manipulation already exercised within human epistemic practices. In the context of a cultural technique that we can—without any pejorative intent—characterize as a "cultural technique of flattening," the interpretation-neutral handling of signs and the temporary suspension of sense and meaning have always played an influential and creative role in the history of culture and knowledge. It is from this role that the productive power of computer-generated digitality also derives.

2 Why the 'human likeness' of chatbots is so tempting but should be avoided

3 The output of contemporary LLM-based technology is not plagiarism but originality. As soon as devices communicate with us and react in a responsive, i.e., a 'dialogical' way, and do not limit themselves to offering facts that are available as retrievable building blocks on the Internet, it seems natural to ascribe human-like behavior to these devices, i.e., intelligence, cognition, communication or even language comprehension. This projection of human capabilities onto non-

personal entities is not unfamiliar. Humans have always included animals or inanimate objects in their everyday interactions, often in emotionally touching and intimate ways. The fact that we bring non-human beings into the realm of what we deal with is perhaps a peculiarity of the human species—at least compared to many, if not all, other biological species.

4 An implicit or explicit anthropomorphism is encountered even more so when dealing with computers. ('computer' as chiffre for connecting hardware, algorithms, networking). Two examples may illustrate this:

5 Alan Turing already emphasized that his model for designing the 'Turing machine' was the behavior of a human calculator (Turing 1936). From the very beginning of AI research, it was proclaimed that computers doing what humans need intelligence to do could also serve as a model for opening the black box of the human mind. As a final example, the Eliza effect turned Joseph Weizenbaum from an advocate of artificial intelligence into its critic (Weizenbaum 1976). His psychotherapeutically inspired program ELIZA (Weizenbaum 1966), which mainly transformed the last words of a patient's utterance into a question, was experienced by patients as an empathetic psychiatrist whose intuition far exceeded that of other psychiatrists.

6 Given chatbots' astonishing and increasingly also epistemically usable text productions, the impression of a human-like dialog capability is fostered. But why is this a problem at all? Besides, our essay does not deal with the surprising potential to create images and videos solely by means of colloquial prompts but concentrates on linguistically responsive chatbot technology. There is a simple and complex answer to the question of why anthropomorphism should be questionable.

7 The simple first: Anthropomorphism is often the framework for an apocalyptic attitude that interprets AI's human-like nature not as a possible enhancement and extension but as a threatening replacement, competition, superiority, and, ultimately, the disempowerment of human agency. A more down-to-earth view of AI, unclouded by anthropomorphism, may, therefore, better illuminate future challenges in dealing with this technology.

8 The more complex answer: If what can be explained about synthetic or generative media is the emergence of a human-like potential, then it would also be logical to assume that the conceptual reservoir for the theoretical description of such phenomena can be found in the philosophy of mind, the theory of human action, and the philosophy of language. In these fields, questions arise, such as: Do chatbots use concepts? Do they have propositional attitudes? Do they understand linguistic meaning? Do chatbots communicate with us—even if only as asymmetrical 'junior partners'? Do chatbots have general human-like intelligence? Or do they even have consciousness?

9 We do not want to skip this area of questions, as our guiding question stems from it: 'Do chatbots understand human language?' However, we want to find an answer to this question that does not borrow its vocabulary from the philosophy of mind, does not support the import of anthropomorphic tendencies, and can (perhaps) be understood beyond the either/or of meaning blindness and meaning sensitivity.

10 Our methodological starting point is—in the broadest sense—a philosophical approach to technology and media. In contrast to its first decades of AI expert systems, contemporary AI, based on Deep Learning and LLMs is becoming a *cultural technique* that can be applied in both academic and non-academic settings. It creates new epistemic interactions between individual cognition, socially distributed mind, and an alien kind of machine intelligence different from human intelligence. The cultural technique of synthetic media forms a fundamental dimension in the transition from alphanumeric to digital literacy. How to argue for this?

3 About cultural techniques

11 Human practices are genuinely technical. From the very beginning, technical instruments have been integrated into the cycles of our activities, ranging from diverse devices such as hammers, washing machines, airplanes, personal computers, wearables, and chatbots. The key point is that this co-performance does not require technical instruments to be human-like to enable efficient interaction. Diversity, not similarity, is the condition for interacting with machines. This is even more true for cultural technologies.

12 What is a 'cultural technique'? (Bredekamp and Krämer 2013) Every technology is culturally constituted, but that does not make it a cultural technique. Cultural techniques are socially conventionalized practices in which symbols and instruments coincide. Used as cultural techniques, symbols become tools; the semiotic and the technical interpenetrate. In the culture of alphanumeric literacy, writing, reading, and calculating are considered paradigmatic cultural techniques. The historical transition from the printing press to digital culture has evoked significant changes in these typical cultural techniques of 'Western literacy,' to which contemporary synthetic media have made a decisive contribution.

13 The example of the *purely written calculation*, a traditional cultural technique closely interwoven with the era of book printing, can illustrate those aspects whose transformation also provides fundamentals for contemporary artificial intelligence. If the small ones-and-ones, one-minus-ones, ones-once, and one-through-ones were available as written tables, elementary arithmetic would be carried out as a process of regular pattern production; a knowledge of numbers and an awareness of the numerical meaning of the transformed signs are not prerequisites. Complex cognition becomes possible through the algorithmically guided creation and transformation of graphic patterns. However, of course, the handling of numbers provides the epistemic or economic, ultimately, the cultural meaning of such an activity (Krämer 2003).

14 Transferred into the form of calculus, the symbolism can be realized in an interpretation-neutral way, at least for a specific period within the operational circle of epistemic symbol manipulation. This is due to a maxim of almost all technical use: the ability to do something becomes independent of knowing why it works. Knowing how and knowing why will be separated. About written arithmetic: Calculating accurately does not require knowing why the algorithms 'automati-

cally' lead to a solution when used correctly. Individual cognition becomes the exercise of supra-individual knowledge. The cultural technique of written calculation embodies a socially distributed cognitive skill, which has been written down as a formal sign system and can thus be taught and learned. Truth becomes reducible to correctness.

15 We see that an embryonic form of digitality is already embodied in the alphanumerical sign space. Long before the invention and use of the physical computer, we developed 'symbolic machines' as a 'computer within us' based on the interaction of the eye, hand, brain, sign system, algorithms, paper, and writing tools. The human mind becomes partially realizable in an almost 'mindless' way, independent of consciousness and interpretation. This is not exclusive to Western literacy. The term 'algorithm' derives from the proper name of the Arab scholar Al Khwarizmi: "Algorizmi dixit" (Ghomashchi and Kaviar 2022), who introduced Europeans to the decimal system invented in India, which made purely written arithmetic possible in the first place (Folkerts 1997). Or consider the construction of the Chinese I Ching, whose hexameters are based on a binary code, or the Quipu, the knotted script of the Incas, which was used not only to calculate and archive numbers but also to send messages.

16 However, another aspect is significant for written computation: writing is usually regarded—not only in linguistics—as transcribed, fixed oral language and thus as a derived, a secondary symbol system. Understanding the written character of the decimal numeral system means overcoming this phonographically oriented concept of writing. Decimal writing and related systems are scripts sui generis, which can then also be acoustically expressed in the respective national languages. Such a system of signs is called 'operative writing.' It is a purely graphic system consisting of a calculus, a formal system of symbols that precedes its interpretation. For example, the zero as part of the decimal system could be calculated for centuries before Georg Boole's idea of an empty set provided an appropriate numerical-logical interpretation for the semantics of this sign. This independence of interpretation is also characteristic of Letter or Symbolic Algebra. Leibniz, who not only created important mathematical and logical calculi but also developed the concept of calculus, shows how the equations of the Symbolic Algebra can be interpreted in varying ways: if they are interpreted figuratively, geometry results; if they indicate numbers, arithmetic arises; referring to concepts, logic is involved (Leibniz 1961, 538) with the genesis of calculus, syntax, and semantics diverge.

17 A faint echo of this interpretive indifference can also be found in alphabetic writing: Not only can alphabetic documents be read syntactically without understanding the content, but the sorting function is also crucial for the cultural dissemination of the alphabet. Alphabetical ordering arranges confusing amounts of information in a way that allows searching for information to be done through surface navigation. Think of the classic telephone directories, the order of encyclopedias, keyword indexes, and card catalogs. The sorting function creates databases 'avant la lettre' within alphanumeric literacy.

4 The 'cultural technique of flattening'

18 If the concept of writing is extended to other graphic forms of representation, such as drawings, diagrams, graphs, or maps, another cultural-technical phenomenon almost universal in history emerges. It is about dealing with inscribed and illustrated surfaces, which we call the 'cultural technique of flattening' (Krämer 2023). Strangely enough, the medium of artificial flatness plays virtually no role in current debates on media theories, cultural techniques, and digitality. However, there are two exceptions: (Summers 2003) describes two-dimensionality in art history as producing 'virtual space'; (Sommer 2017) examines lines and rectangles as influential global designs.

19 We live in a three-dimensional world, but we are surrounded by illustrated and inscribed surfaces. From skin tattoos and cave paintings to the invention of images, writing, diagrams, and maps, to computer screens and smartphones, we project the practical and the theoretical onto the unique spatial form of two-dimensionality, which nullifies the dimension of depth (Krämer 2024): Everything that is, that is not yet or can never be ('impossible objects') is projected onto the artificial surface, designed or discarded, manipulated and tried out as well as socially distributed and archived. Without versions of the cultural technique of flattening, all sciences, many arts, complex technology, architecture, finance, and bureaucracy would hardly be possible.

20 But why can a reduction, the loss of three-dimensionality through two-dimensionality, be so creative and effective?

21 Regarding media philosophy, one answer is obvious: According to the messenger model (Krämer 2015), media serve as a connecting device between two heterogeneous poles, fields, or parties, creating a nexus between them without erasing their differences. From a media perspective, inscribed or illustrated surfaces form an intermediary between the three-dimensional surrounding space and the one dimension of time (here, we neglect the transition to the four-dimensional space-time continuum in relativity (Krämer 2023b). What matters here is that temporal processuality can be transformed into spatial structurality, time can be transfigured into space, and vice versa, through the intermediary position of artificial flatness. It is precisely here that the productivity of artificial flatness can be located.

22 Two misunderstandings should be avoided: 'Artifical' means that there are no two-dimensional bodies in the physical, empirical sense; instead, we treat inscribed surfaces *as if* they were flat. All writing is engraved or drawn on. Furthermore, it is also important to note that the time-space metamorphoses are not about mapping but rather about a transfigurative transformation, which always implies a change in the 'mode of being,' which opens up new ways of dealing with what has been transfigured. The potential of diagrammatical spatialization allows us to visualize invisible or purely conceptual relations through the interaction of points, lines, and surfaces.

The result is a sublime thread that runs through many epistemic practices as implicit or explicit diagrammaticity: be it the notational iconicity of a text, the timelines of historians, or the graphs and tables of data-gathering sciences. Ada Lovelace, who designed the first (hypothetical) working computer program in 1843, wrote it as a table (Lovelace 1843).

23 This diagrammaticity is also characteristic of the computer, in that it is a 'writing machine' (Bolter 1990): not only are input and output written down, not only is the computer's elementary code described as a 'binary alphabet,' but digitalization also opens up new modalities of writing such as links, barcodes, and QR codes, which trigger a self-movement of this inscription through user activation. Moreover, as a forensic machine, the computer can reveal hidden patterns in images and text corpora, acting as a microscope or telescope into the data universe. From the perspective of the computer as a writing machine, we have now arrived at token-statistically operating Artificial Intelligence.

5 Meaning reduced to spatial relations

24 The next step is to see how the LLMs can produce such appropriate texts based solely on statistical predictions of the next most likely sequences of tokens, i.e. texts that usually (but not always) correspond to our world experience and knowledge. It seems hardly conceivable that texts fitting our world experiences are fabricated without an understanding of the world.

25 One thing should be made clear from the outset: This is not about explaining what a *single*, isolated technical object can do, be it the 'responding' chatbot or the underlying LLM. Rather, from a cultural technology perspective, it is about the functional cycle of an interplay between human users *and* digital devices. In other words, it is about people asking questions or giving instructions as cleverly as possible in designing their prompts and an algorithm, provided that it has been prepared in a data-intensive (and, incidentally, energy-intensive!) way through training and testing cycles. Cycles in which large parts of collective cultural memory are available as a database in written but tokenized form and legions of human click workers who train constraints of acceptable 'civilized' communication by feedback to the algorithms. As a result, LLMs incorporate a large part of human knowledge given in the form of data, which exceeds not only individual cognition but also the collected knowledge of any library. But remember: For chatbots, data does not represent knowledge but rather presents databases with an infinite number of possible connections for combining tokens. But what is data? From the perspective of their cultural setting and engagement, data are signs that, in principle, represent something, whether that representability relates to the world or is purely conceptual or imaginary. The date 20.01.2025 cuts a well-defined point in time out of the temporal continuum: one day on which this text was written. However, the pivotal point is that calendar dates can be *mechanically* updated in the past and the future; data are computable, while their content is created by being embedded in a cultural-technical, often textual system, such as a calendar. Only in this way can data

be transformed into usable information and knowledge. Computability and representability diverge in the case of data. What a calendar date is to a human is a numerically weighted point to the machine that has been trained. 'Point' is meant here very literally because the point-like format reveals a fundamental aspect of 'being data.'

26 The format of point-like depictability of data has received little attention in the literature. Yet, this is precisely where the relationship can be found between digitalization, which is based on the discretization of continua into encodable elements, and datification, which is based on the discretization of phenomena into points. Points can be displayed as populations or clouds of points, forming aggregates whose configurations can be statistically analyzed. No date comes alone! The close relationship between the formatting as points and the appearance as populations forms a link to understanding machine learning.

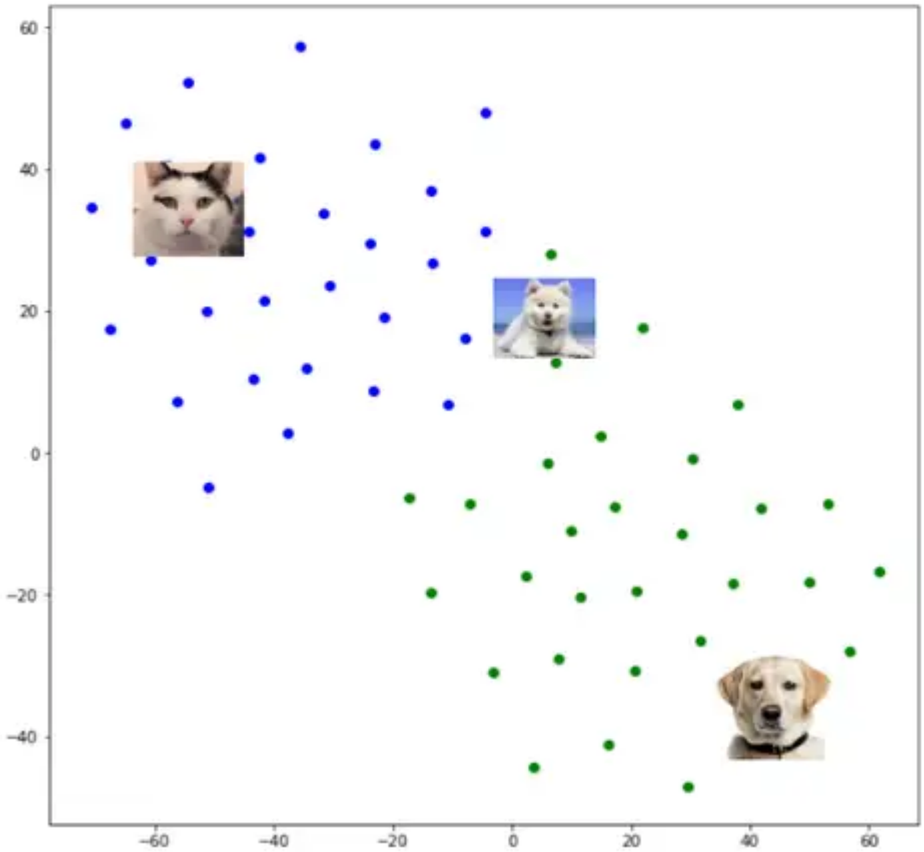
27 With regard to the 'nature' of points, let us take a look back: In 1637, the philosopher René Descartes (Descartes 2006) overcame the schism between geometry and arithmetic, which had prevailed in ancient Greek mathematics since the discovery of the incommensurability between the sides and diagonal of a square, by inventing the coordinate system (Descartes 1981). Coordinate systems transform surfaces into four quadrants so that each point on the surface occupies a well-defined location that can be addressed with pairs of numbers. Point and number, figure and formula, geometry and arithmetic become translatable into each other through the coordinate system.

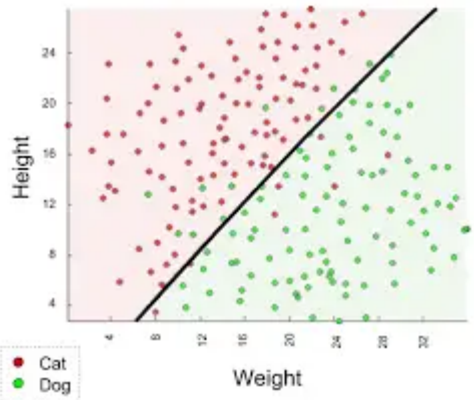
28 When data is processed in machine learning, the classical two-dimensional coordinate system is replaced by vector spaces with as many axes as the internal model has weighted parameters. In the case of LLMs, these parameters are in the high billions—a construct unimaginable to humans. However, the unique feature of the computer is that it is, as a Turing machine, a surface processing technology and can spread massive data corpora out on a surface, thus unfolding them for searching, analysis, and combination.

29 Let us illustrate this with an example from the field of clustering, which can be applied to both: images and text.

30 If a machine has to learn to distinguish images of cats from images of dogs, it is trained to numerically decrease features that are common to both species (four legs, fur, two eyes, tail), while numerically increasing features that are specific to one species (retractable claws, flat versus protruding snout). Gradually, the machine can distinguish the point cloud of the cat images from that of the dog. Through training and feedback, the software learns to calculate the line or curve that separates the two point clouds. The further a point is from this line, the more obvious it is a cat or dog image. Conversely, the closer a point is to the line, the harder it is to decide. It is clear that, by the statistical examination methods, it is only a matter of probabilities (95% cat, 5% dog): but this value is usually higher than in human image recognition. In all of this, it should not be forgotten that the criteria used by the trained algorithm to distinguish between the image types and calculate the dividing line remain a black box.

31





32 The artifice of machine data processing is already evident here: For humans, these are images of animals; moreover, they know the difference between a picture and what is depicted, recognizing that animals are not flat, can suffer, and sometimes even bite or scratch, because animals are part of our symbolic and non-symbolic life-world. However, the machine 'knows' none of this. The crucial point for the computer as a surface technology is that the mathematical function computed by the machine is based on being determined by *spatial* parameters: How far apart or how close together are points to each other? What is their distance from the dividing line between the two clusters? What functions in the human realm as meaning becomes the form of a calculable spatial proximity or distance for the machine. The cultural-technical 'trick' is to bring spatial relations into correlation (not into causation!) with meaningful, semantic relations—almost everything diagrammatic is based on this fundamental principle (Krämer 2016).

33 Correlating meaning with spatial relations becomes even more apparent when considering op-

erative language processing, for example, ambiguous words. The German word 'Bank' can mean 'financial institution' or 'park bench.' Using transformer technology, which remembers the word embeddings in which the word in question occurs, word neighborhoods are now identified and weighted. The proximity of words like 'customer,' 'credit,' and 'financial services' suggests that 'Bank' is more likely to refer to a financial institution, whereas in a context where 'pond,' 'trees,' or 'children playing' occur, 'Bank' is more likely to be associated with a park bench.

34 That the meaning of words or sentences lies in their use has been almost common sense in philosophy since Wittgenstein, although Wittgenstein himself did not develop a theory of meaning as use. However, the question of what 'use' means is extremely broad. Distributional semantics, which traces the meaning of words back to the textual environments in which a word occurs, is a minimal version of this theory of use in linguistics. 'Minimal' because it dispenses with pragmatics and considers only the *textual* environment of words and sentences, but not the social meaning and function that language plays as addressed utterances in the lifeworld, thus becoming social speech acts.

35 However, in the context of data corpora in a purely textual environment, word neighborhood computations can not only reconstruct word or sentence meanings numerically with surprising accuracy but also make implicit meanings explicit by machine. A significant achievement of LLM-based AI is the inductive determination of latent relationships embodied in the available data material.

36 An example: The more texts on the geography of Europe that are available to train an algorithm, the better it can infer distances that are *not* explicitly mentioned: Even if the cartographic distance between Palermo (Italy, Sicily) and Berlin (Germany) is not explicitly mentioned anywhere in the texts, a trained algorithm will be able to extract or compute this information with stochastic plausibility from a large corpus of data.

37 The geographical example can be extrapolated. Suppose that large amounts of social memory and collective knowledge are available as a training resource. In this case, chatbots can access, compile, correlate, and combine extensive knowledge that is implicitly embedded in the data. Due to their lack of access to the outside nontextual world, 'the world' within chatbots remains closed. They operate in a purely textual universe, ironically commented on: in a 'post-structuralist paradise.' Nevertheless, because the training data encompasses entire parts of collective memory, a form of computer-operable social knowledge is created that can be used by individuals and, at the same time, far exceeds any individual memory, any existing scientific handbook, any library, and an online encyclopedia.

38 Let us recap: We aim to demonstrate that the potential of AI can be described in a non-anthropomorphic way. From a media-philosophical and cultural-technical perspective, the data corpora's written character is essential, and their tokenization must be assumed. In text processing, it is not the similarity but the dissimilarity between humans and machines that is the precondition for their efficient interaction. In the case of data processing by AI, the sense and meaning that humans can interpret become calculable spatial relations of proximity and distance

on the part of the machine. In the face of this alterity between humans and machines, however, it should not be forgotten that long before the use of real machines, it was the cultural technique of flattening that made humans behave epistemically like machines by realizing cognitive work temporarily and partially in a 'mindless,' interpretation-independent way.

39 At this point, I would like to mention two positions in the debate on responsive chatbots—both authors are represented within this volume—which also emphasize the written nature of chatbots' activities, but which, in my reading, can still be associated with latent anthropomorphic dimensions.

5.1 Chatbots demystifying the logocentric metaphysics of communication (David Gunkel)

40 David Gunkel ((Gunkel 2023); (Gunkel 2025)) interprets experience with conversational AI as an opportunity and proof for revising the logocentric view of language and communication.

41 For Gunkel, too, LLMs are not created based on sensory or other access to the world and remain enclosed in a data world whose boundaries do not exceed their operations. But—Gunkel argues—how certain can we be that humans transcend the boundaries of their sign worlds and thus have direct, sign-independent access to the world? A considerable number of philosophers—including Leibniz, Peirce, Wittgenstein, Cassirer, and Sellars—emphasize that there is no immediacy in the human relation to the world: what we perceive, experience, think, and communicate depends on the use of culturally conditioned signs. Post-structuralism, and especially Jacques Derrida (Derrida 1976), radicalized this insight by making the written and textual nature of symbolism a condition of, if not a synonym for, culture. "There is nothing outside the text" is the famous statement that—although Derrida originally meant it in a different sense—becomes the guiding principle (Deutscher 2014).

42 David Gunkel emphasizes that the written form of chatbot productions signals how much language detaches itself from the living human voice and how radically textuality has to be detached from the idea of original authorship. The use of language characteristic of chatbots thus calls into question what Western philosophy has often absolutized as the primordiality or transcendentality of oral language. From this perspective, the intensity with which philosophy is currently discussing contemporary digitality, which it has neglected for too long as a purely technical-medial constellation, points to an experience of crisis: The communicative responsiveness and textual plausibility of contemporary AI undermine philosophical concepts of language, communication, and mind. However, this can only be experienced as a crisis by those who share logocentric positions. Gunkel reminds us that poststructuralism has deconstructed the basis of logocentric thinking precisely by questioning the primacy of the voice, the marginalization of writing, and the idea of individualistic, original authorship. The philosophy's discomfort about the unexpected success of chatbots becomes a mirror in which a problematic understanding of language is deciphered, if not reduced to absurdity.

43 We can follow David Gunkel's critique of the logocentric dimensions of the Western episteme. But in doing so—and in this, we do not follow him—an anthropomorphic import is latent: the chatbots become the incarnation of a kind of linguistic behavior that has always been characteristic of human sign practices. Just as earlier AI was often regarded as opening up the human mind, now Chatbots are interpreted as opening up essential structures of the human discourse.

44 But humans do not live in a purely textual universe. As metabolizing bodies, they are ecologically interwoven with other bodies and their environment, integrated into an irrevocably analogous lifeworld, which, to put it simply, is not a purely data-driven world, even if datification naturally permeates almost all aspects of human life in a rhizome-like manner.

45 To avoid misunderstanding, we are not arguing for a multiplication of worlds or a separation between a mechanized and a humanistic world. Of course, the machine-operable data universe is part and parcel of the human living world. This is precisely why colloquialisms, rather than programming languages, can form the interface between humans and machines. We are only concerned with recognizing the indispensable alterity between human language use and machine token statistics. How this alterity is to be justified will be discussed later.

5.2 Synthesis as structuring unity out of the manifold (M. Beatrice Fazi)

46 M. Beatrice Fazi (Fazi 2024) has presented an inspiring interpretation of synthetic media, explaining the term 'synthetic' less in terms of 'artificial' or 'simulated' and more in terms of structuring epistemic processes, once intensively reflected by German Idealism. 'Synthetic' is usually associated with something that is not natural but artificially produced, yet Fazi draws on processes of synthesis known from the philosophic tradition. At issue is the problem of how to create unity out of diversity, a problem that can be found in various versions of German Idealism. For Kant, for example, synthesis is the intellectual activity that takes place whenever reason combines a multiplicity of experiences or concepts into something holistic, into a unified whole. Hegel conceives of the unification of differences into a totality, so that what is unified does not come to rest and get stuck in it, but splits off from the union, thus driving the dynamics of the human spirit forward in a spiral between unification and differentiation.

47 For Fazi, the point of this philosophical return to synthesis is to avoid seeing the linguistic behavior of chatbots as 'fake,' 'deceptive,' or 'simulated.' Instead, what chatbots do is operate with real language, representation, and meaning—albeit committed to the operational model that Fazi borrows from the philosophy of idealism but then interestingly reconstructs in its computational form: Fazi calls this 'synoptic computing,' whose structuring principle is anchored in assembling, summarizing and composing. LLMs are computational structures that can combine structures. This makes it possible for chatbots to respond to human speech with plausible answers and to generate linguistic representations that can be meaningfully related to the outside world for humans, even though LLMs have no access to it.

48 We follow Fazi with her idea of 'synoptic computing' ('synopsis' is precisely what artificial flat-

ness offers). But is German idealism the appropriate historical source and tradition for this? Is a return to the idealist antecedent the only way to connect with the traditions of philosophical synthesis? Fazi mentions Gottfried Wilhelm Leibniz's idea of universal mathematics but does not pursue this line of thought. Leibniz, however, belongs to a very different, non-transcendental, and non-idealistic tradition: It is the history of combinatorics, primarily philosophically oriented combinatorics. Would it, therefore, be possible to interpret M. Beatrice Fazi's 'synoptic calculation' in the light of this combinatorial Leibnizian tradition?

49 As different as Gunkel and Fazi argue, there is an overlap between them: LLMs do not operate with the help of access to the external world; they are and remain, at least at the current stage, without a world reference. They statistically search and process the operational field of written and networked data corpora to diagnose or synthesize patterns that can be semantically interpreted and pragmatically used by humans.

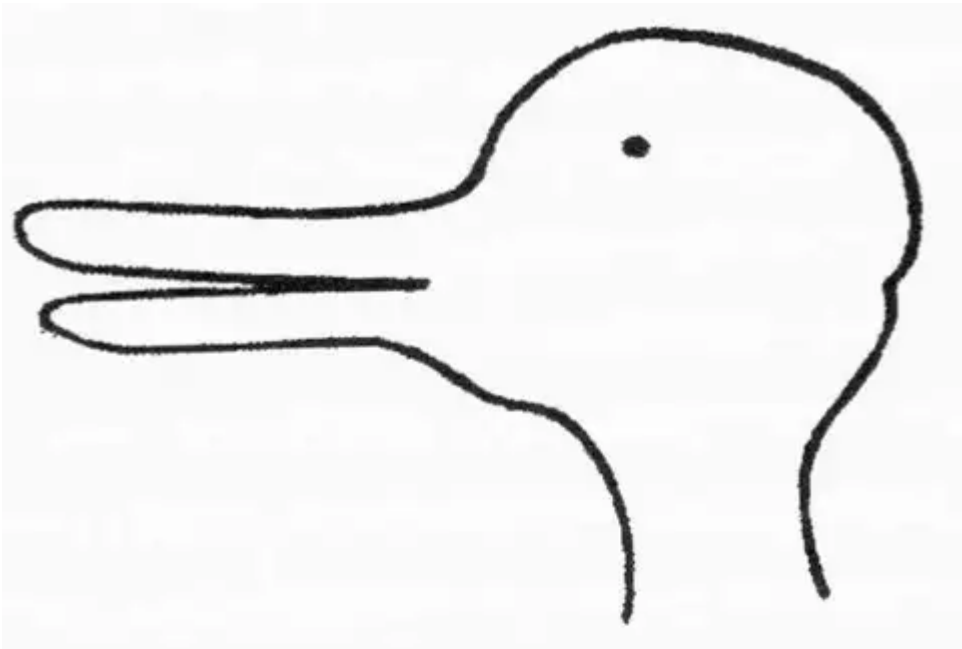
50 Shane Denson (Denson 2025) has problematized—by positively linking to M. Beatrice Fazi's concept of synthesis—that Fazi divides the world we share with technological artifacts into separate worlds. But instead of such an ontologically conceived interpretation of Fazi's differentiation between worlds, might not another view of Fazi's approach be possible, in that it is not about two worlds but about two different perspectives on one world only? So, from a technically oriented perspective, what we understand by intelligence, cognition, and communication is realized in an 'alien,' non-human way. However, this 'dehumanization' is simultaneously due to the cultural-technical ingenuity to operationalize human communication and social episteme. Fazi draws on the philosophy of idealism to distill the structuring procedures of human cognition in Kant's and Hegel's syntheses, which provide her with the distant model for the computations of synthetic media. But in the context of our attempt to avoid anthropomorphism, and thus not to make the workings of the human mind an analogy for the machine, another epistemic tradition is to be invoked, as already indicated: Philosophical combinatorics draws on the idea of a technically and symbolically mediatized exteriority of the mind by exploring the intellectual craft of symbol manipulation as an external route to knowledge and insight. There is thus a direct route from Raimundus Lullus to Leibniz' 'ars combinatoria,' which explicitly refers to Lullus (Leibniz 1923). In order to historicize what is currently happening in AI, it is instructive to look back at the tradition of combinatorics. Albeit, this is not the place to pursue the idea of combinatorics as a historical and systematic condition for contemporary AI.

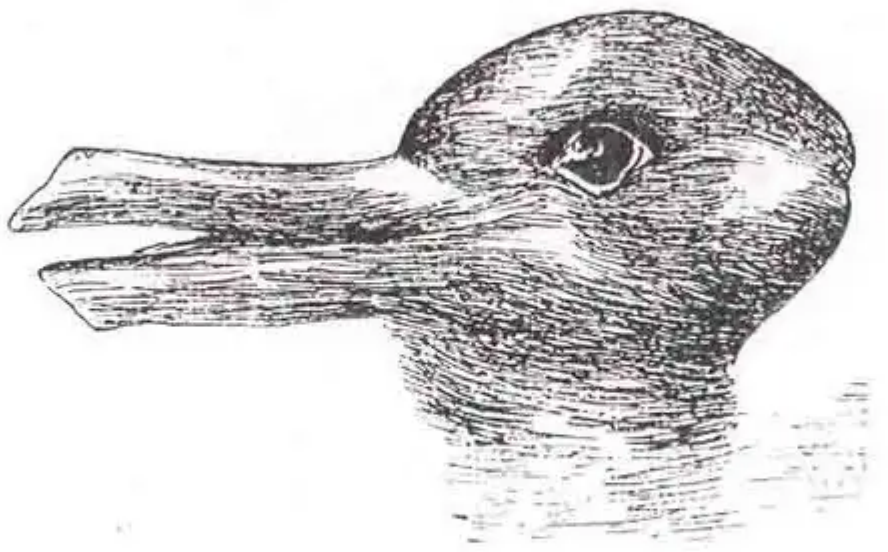
51 However, there is something problematic about this historical recourse: Combinatorics, as a stochastic exploration of the possibilities of arranging objects or elements, requires a formal language, i.e., a formally organized script. In formal systems, the structural principle is indeed compositionality, which M. Beatrice Fazi analyses in detail. However, the conditions have changed with Deep Learning and token statistics. The token-statistical pattern analysis of contemporary synthetic media no longer follows the principle of compositionality that applies to formal languages.

6 Different perspectives on one and the same language

52 The fact that machines and users share the same communication medium is a significant change associated with synthetic media. We used to distinguish between operational and phonographic writing. Now that we are dealing with the textual productions of chatbots, our perspective and line of argument must change. It is no longer about the difference between two types of writing but about one type, the written colloquial language, which can be broken down in two *different* ways: into meaningful units such as words or sentences or meaningless units such as letters or tokens. This also implies two alternative ways of reading, writing, and processing language. Either it is the perspective of interpretation-oriented and meaning-sensitive handling of texts, as is usual in human textual practices. Or it is the perspective of a meaning-blind, character-statistical computation that forms the basis of contemporary AI. This difference in perspective does not simply denote different attitudes or ways of seeing. However, this duality really exists —so to say: ontologically—and is embodied in the materiality of an alphabetized colloquial language.

53 Ludwig Wittgenstein (Wittgenstein 1984, 519b) used the example of an inverted picture to explain the phenomenon of the change of aspect. This picture shows a rabbit *or* a duck, but it can never be seen as both simultaneously. The drawing is physically constant, although the viewer can see a sketch of two different animals, but never the transition from one to the other. The important point here is that it is not just a way of looking at, a manner of interpreting the image. Rather, these two perspectives have to do with two possible forms of spatial orientation embodied in the drawing. The spatial orientation is essential. Kant once discovered that the definition of 'space' includes not only extension (as with Descartes) and not only relation (as with Leibniz) but also a third attribute: orientation (Krämer 2018). Seeing a duck in the flip image means the animal's head points to the left: its eyes, beak, etc. When a rabbit is perceived, the directionality is reversed, and the whole head faces to the right (more or less). But it is impossible to see the drawing in two directions at the same time.

54 



55 The duality of perspectives does not arise from a perceptual illusion. However, it is due to the internal structure of the drawing, which can be seen and interpreted as a rabbit or a duck but not—for example—as a tortoise or a deer.

56 Back to our argument: We now propose to understand the alterity between the interpretive and the statistical perspective as a change of aspect, which is not a result of a change in the 'thing'—the written utterance—but nevertheless makes a big difference. A duality of perspective—and here we leave the analogy with the inverted image—that causes a profound difference in what can be done with written language and how it can be discretized, used, and processed.

57 Few things are more controversial than what 'interpretation' means. Therefore, only one dimension will be highlighted here, which is a result of our methodological cultural technique of flattening—approach. Artificial flatness is based on the pragmatic elimination of the dimension of depth through the use of two-dimensional writing, images, diagrams, and maps. What hap-

pens in interpretation is that a third dimension is reintroduced into the inscribed and illustrated surfaces. Thus, what is engraved on the surface without depth can then be made meaningful or epistemically/aesthetically inspiring by compensating the cutaway through interpretation. It is only because the airport display boards show data that passengers interpret as actual arrivals and departures that they become meaningful information. We can only communicate in writing because the word is a text with meaning, not a pattern or ornament. In short, AI can hardly be used productively without the interpretative reintroduction of an analog to the dimension of depth.

58 But this is precisely what the machine does not need. It's token-statistical processing of data corpora is a surface technology that does not require interpretation because calculable spatial relations 'do it all,' or more precisely, spatially calculable connections have taken the place of relations of meaning. Moreover, in terms of media technology, it is paramount that the phenomenon of writing provides the basis for that all; writing is not just: fixed oral language. It is no coincidence that the elements of tokens consist not only of a few letters but also of empty spaces: an apparent reference to the written nature of tokens because—in relation to the fluxus of language—the pauses of breathing do not at all correspond to the empty spaces of writing, i.e. the spaces between letters, words or sentences. The phoneme is a legacy of the grapheme.

59 However, there is more to it than the diagrammatic potential to process the non-spatial as spatial constellations. Written utterances notated in an alphabetic script produce a network of signs within the text—as etymologically signaled by the name 'text' from 'texture': 'to weave/braid'—which contains statistically explicable regularities. These are mathematical relationships between the elements of writing that are generated in the process of writing, without those who write and read knowing or needing to know anything about them any more than the planets calculate their movements in their orbits. To repeat, interpretation, rather than the unfamiliar field of letter statistics, constitutes a human understanding of language and writing. The diversity, or one might say: the alterity, of these different approaches and options for processing language could hardly be more significant.

60 It is no secret that written language is subject to mathematical laws. Andrei Markov (1856–1922) pioneered quantification methods in the humanities by analyzing Russian literature—Gogol's Eugene Onegin—using letter and word statistics (Markov 1912) (Hilgers and Velminski 2007). Alan Turing (1912–1954) decoded the Enigma, the Cipher Machine used by the German navy to encode its radio messages, using letter statistics (Schramm 2024). The Germans did not believe that humans would ever be able to decipher their cryptography. They were right! But Turing developed a *machine* that could do what humans could not (Ratcliff 2005)! Incidentally, it should not be forgotten how many women worked on Turing's decoding at the British intelligence center Bletchley Park; work shrouded in the strictest secrecy and has only gradually been researched and reconstructed since the 1990s (Dunlop 2015).

61 The realm of the machine's decoding power and the human's inability to decode was precisely the dimension of letter statistics, the virtuoso handling of which is now encountered in chatbots

—albeit, of course, under the changed media-technological conditions of neural network learning.

62 With its underlying mathematical regularities, alphabetic writing contains a cultural unconscious that plays no role in ordinary writing and reading practices but can be crypto-logically used and analyzed by technical devices. Leibniz had already designed a polyalphabetic coding machine alongside his four-species calculating machine (Heinrich 2017). The philosopher Nicholas Rescher (Rescher 2012) reconstructed this machine.

63 We have already referred to the computer as a forensic machine. In the token-oriented handling of strings, forensic operation finds its genuine field of activity and testing. Something that remains latent and hidden from the perspective of human language use is made explicit by the diagnostic power of the computer. Thanks to Transformer Technology (Vaswani et al. 2017), this forensic power has been converted into a language-generating power, thus creatively transfiguring what is called 'natural language processing' in computer technology: Language translation, the production of real text in response to user input, the summarization and extraction of existing text, and, above all, the inference of implicit information in Big Data are all part of the spectrum of Transformer Technology, which optimizes itself based on training data. It is this ability to extract implicit information from the textual fabric of massive data collections that, from a human perspective, embodies 'world knowledge' without practical sensory access to the world. From this perspective, LLMs are part of the software that develops non-human forms of meaning, understanding, cognition, and intelligence. Meaning-sensitivity and meaning-blindness are thus two perspectives in which the fundamental difference between humans and machines in current AI becomes apparent. This difference, however, is the condition for the possibility of their co-performance.

64 Cultural techniques are sedimented forms of social ingenuity; their anthropotechnical dispositive is to open up the potential of the 'social we' to the individual. This is comparable to the social medium of libraries, which provide knowledge that individuals can use but cannot survey themselves. This is why library catalogs provide a compensatory overview by flattening books into alphabetically arranged index cards.

65 Cultural techniques are not simply technical objects but the interaction between individuals, collective knowledge, material media, and instruments. Even the pocket calculator realizes a potential miles away from what humans can do in mental arithmetic. Chatbots provide services that are often surprising to human users: In this form of non-human, alternative intelligence, however, we also encounter a social collective achievement within the framework of the exteriority of the human mind.

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