Automation processes in speech synthesis as a matrix for private language according to Wittgenstein

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1 Introduction

The ability to be creative is often demonstrated by humanity in desperate situations in which a way out initially seems impossible. The fact that it is more than just a cognitive ability that serves the individual to cope with a prison break is demonstrated by its pervasive influence on language, as it becomes apparent during the increasing algorithmization of the language infrastructure: As public discourse increasingly shifts to the arena of social, algorithmized media, an initially expected change in language takes place - similar to the adaptation of one's own language style to the circumstances of a radio or television report. For a few years now, however, a change in language can be observed that reveals the dark side of the establishment of online social platforms as a medium of discourse. The phenomenon in question is known as "algospeak" and describes a reaction to the use of technical language filters designed to prevent the sharing or dissemination of content with a certain choice of words. In order to circumvent the blacklist of prohibited terms, users try to find alternative ways of expressing themselves (cf. Wilker 2022). The new expressions should be inconspicuous enough not to be immediately detected by the algorithm, but still carry a meaning that is obvious to the general public. Through this protective mechanism, the discourse resists freezing in a state of insubstantiality brought about by technical systems. A way out of the constant
"[...] a game of cat and mouse" (ibid.) between user:in and algorithm is to be offered by the European Union's Digital Services Act, which from 2024 is to enable an objection to the unauthorized restriction of content. But what if it is not the algorithms, but the people themselves who adopt a computerized language that is merely directed at the invisible, automated processes within an artificial intelligence? Ludwig Wittgenstein addresses the question of whether such an invisible language is conceivable in his work
"Philosophical Investigations" with its concept of private language (cf. Wittgenstein 2022, 145f). This essay begins here by attempting to criticize this argument, with the thesis being as follows: The automation of language architecture in the context of algorithmized, language-synthesizing processes creates an effective instance of private language that is unthinkable according to Wittgenstein. Vilém Flusser's concept of language automation in the telematic society will be used to illustrate these processes, whereby his computerized, zero-dimensional language will be compared with the concept of private language with regard to possible parallels.

2 Main part

2.1 The functioning of language-synthesizing automation processes

First, a formalistic outline of the concept of information processing of a language-synthesizing, artificial intelligence (abbreviation: S-AI) will be given using the stimulus-response scheme commonly used in computer science. The user: After the input of information, a reaction follows which cannot be predicted with insufficient prior knowledge, but which always takes place in the same way under the same conditions. Modern computers work according to the Turing principle and can therefore "[...] generate or [...] recognize a theoretically infinite sequence of symbols [...] from a finite number of symbols and control instructions, limited only by the length of the tape" (Zaun, 2016, 8). In this way, users of a chat can be convinced via keyboard input to actually get in touch with another person, even though the other person is a computer program. The question of whether a computer program can effectively pretend to be a human being is examined in this way in the "Turing test", which tests the extent to which artificial intelligence is perceived as such. In 1950, the computer scientist Alan Turing predicted that in 50 years it would be possible to program computers in such a way that a human would recognize the computer as such in a five-minute conversation with a maximum probability of 70% (cf. Copeland, 2000, 526).

The current status is that some computer programs based on S-AI, including the leading chatbot *ChatGPT*, have succeeded in simulating a human conversation partner in such a test. In *ChatGPT*, speech synthesis is based on a "[...] randomized selection of words and syllables that are chained together based on probability" (Mohr et. al., 2). S-AI does not behave in a purely self-referential manner, but must be fed with tested prior knowledge and feedback from test users in a continuous training process (cf. ibid.). However, the S-AI is also able to modify itself through reinforcement learning to ensure that the output corresponds to certain predefined guidelines (cf. ibid.). The more the S-AI learns, the less it is dependent on additional human input - provided there is a ceiling effect in the learning curve. The reaction of the S-AI is made authentic both by a large repertoire of available responses and by the dynamic process of human and self-reflective feedback. The potential that lies behind this characteristic is illustrated in the following section by the comments of media philosopher Vilém Flusser.

2.2 The concepts of computerized language and private language

2.2.1 Tracing the private language argument

Before moving on to the linguistic perspective on the computerization of language through S-AI, the central premises for an actual private language should first be presented. In the context of his private language argument, Wittgenstein raises the question of whether it is possible for an individual to design and use a language that is not based on intersubjectivity, but on a meaning that is inextricably linked to language and unambiguous (cf. Wittgenstein 2022, 145f). This question goes back to the idea that the exercise of language is only possible under the maxim of intersubjectivity of expression, which is not given in his concept of private language - in which abstract expressions are tentatively coupled with an absoulte, non-intersubjective meaning. Wittgenstein's argument here is primarily directed against two fallacies constructed as such, which regard genuinely human language as the result of a necessary, non-intersubjective determination of meaning: On the one hand, he contradicts the assumption that mathematical constructs, given their determinability by definition, must be non-intersubjectively identical carriers of meaning (cf. Candlish 2011, 113). Thus, although the definition sets of a function are universally defined, they arise from an intersubjectively standardized definition of what we can understand as the "language of mathematics". On the other hand, Wittgenstein opposes the assumption that the naming of intersubjectively comparable sensations must lead to a non-intersubjectively identical meaning of the resulting terms (cf. ibid.). Here it is the same as in the previously mentioned case: although we have an abstract catalog of different sensations due to our biological constitution, we cannot tear our intersubjectively different perceptions out of the abstract by labeling them as absolutisms. Wittgenstein strips his concept of sensation, which is decisive for the existence of a private language, of the natural component of human sensation (cf. Candlish 2011, 114) and reduces it to a purely self-referential type of sensation that cannot be conveyed by an intersubjective utterance. The words of private language must therefore refer to what only the speaker can know in relation to him or herself. For further discussion, it will therefore be explained below why intersubjectivity in the context of computerized language loses its reference to public life and thus creates a basis for private language.

2.2.2 Language automation in the view of Vilém Flusser

In this section, the starting point of Vilém Flusser's language system used in this essay and symbolized by S-AI is presented. By examining a language that is perceived and adopted by humans as such, but which eludes their influence, Wittgenstein's concept of private language can be viewed from the perspective of a non-intersubjective language of apparatuses, which as "[...] stubborn entities" (Flusser 2018, 19) generates a purely functionalist language with concrete, unpredictable results. In Flusser's perspective, the technical images - which are also generated by S-AI - are viewed as an isolated, zero-dimensional apparatus over which we as individuals no longer have any influence (cf. ibid., 12ff). From this, we will first derive the hermetically sealed functioning of S-AI, which will serve as a working definition in the further discussion of computerized language and private language. Flusser describes how the original, intersubjective mechanisms of language emergence of "[...] author and authority [...]" (Flusser 2018, 131) are gradually being replaced by automation processes in the "[...] universe of technical, telematized images [...]" (ibid.) will be replaced. In view of the massive revision of its creation process, the future language is no longer decided, but in extreme cases decides for itself autonomously.

With regard to the intersubjectivity of such a language, Flusser shows a clear tendency towards the sole dominance of a cybernetic language instance and thus towards the non-intersubjectivity of such a computerized language. This language is not carried by the algorithm itself, but rather by the instances that recognize and reproduce it. The abstract and thus in its origin arbitrary language of humans fits into the ordering, but at the same time determining syntax of an inaccessible cycle of data processing (cf. Flusser 2018, 132). The human instances of language no longer relate to each other intersubjectively, but rather place their expression in relation to the functioning of computerized language mediation. The "algospeak" mentioned in the introduction cannot serve as an example of this, because it is, if anything, the preliminary stage of what we will experience in a "[...] cybernetically controlled society [...]" (Flusser 2018, 133) is to be expected.

If the algorithm swallows up the cultural technique of language and thus becomes the only symbolically mediating process, the individual no longer behaves solely in relation to the expected external perspective: in order to interact with the expected audience, he must not only align his communication with his meta-image directly related to the other, but must first align his message with his everyday theory of the other.

The message is shaped by the way the technology works in such a way that it reaches the desired recipients without being distorted in content. The message is - as Flusser would put it - *computerized* and thus aligned with the technical transmission process. In the scheme of algorithmized interaction, the sender thus takes on the perspective of a computer himself, as he cannot establish a reference to the recipient due to the diffuse transport route. He can only approach the recipients by inserting the computer's probability-based mode of expression into his own language concept, whereby this is coloured by the arbitrary computerized language. The universe of technical images, which emerges from the non-exhaustive but nevertheless tenaciously changeable linear text, is thus no longer developed further according to need, but is hermetically shielded from a possible increase in the level of abstraction under the dictates of the circuits (cf. Flusser 2018, 14).

2.3 The possibility of computerized private language

From Flusser's observation, it can be seen that as soon as people regard computerized language as their own, they use its terms in relation to themselves without becoming aware of them. This negates the arbitrariness of self-referential private language, as described in PU 258, since meaning is no longer assigned by the human being himself, but by a cybernetic sphere surrounding and immanent to him (cf. Wittgenstein 2022, 151). In the following, this dualism will be differentiated by explaining the linguistic properties of computerized language as a language system and by considering the interaction between man and machine as a language game.

2.3.1 Cybernetic language as an intersubjective, rule-based language system

If we consider private language as a generalized revelation of an abstract, we must acknowledge that the representation of an abstract and indecipherable pattern of thought or processing, which bows to an inner logic of the stochastic computerization of language, comes very close to the concept of private language in the architecture of computerized language. In contrast to Wittgenstein's tentative assumption of the human user of private language, however, Flusser's linguistic entity has no subjective experience of its own, which it attempts to express through artificial language. In his argument, Wittgenstein endeavors to demonstrate that the "[...] private speaker [...] is unable to give meaning to a word of feeling and to sustain this attribution of meaning" (Candlish 2011, 116). However, if we - as

Flusser - assume that the functioning of computerized language will gradually be integrated into human language, the possibility of providing the non-intersubjective mappings of S-AI with a meaning already immanent to genuine human language is arranged. In this way, the pattern of algorithmic speech synthesis fits into a specific social context and thus transcends into the state of intersubjectivity.

However, this depersonalization of the individual does not mean that the language that speaks through itself is not rule-governed, as a language that is separate from human influence can also be rule-governed. Synthetic language creates a private language as soon as the receiving human actor mistakenly recognizes the language-synthesizing entity as the intersubjective language-creating entity. Through his interaction with the S-AI, the actor - as we see in the Turing test - is led to believe that the shadowy texts and images emanating from the electronic geyser are true images of human linguistic figures and thus something metaphysically absolute. Of course, this presupposes that genuine human language is completely occupied by the mechanism of computerized language. This is not absurd with regard to the potential of S-AI: as soon as the performance of the language-synthesizing apparatuses exceeds a certain threshold, language can no longer grow or change in a fully automated civilization (cf. Flusser 2018, 19ff). If we are no longer able to decipher and influence the technical images ourselves, a logically stagnant state of strict language regulation and organization has arisen.

2.3.2 The coupling of computer and human as language acquisition

If we consider language as computerized, we can assume that the content of the box in Wittgenstein's beetle simile is self-determined without us as individuals being able to gain insight into the exact process of assigning meaning (cf. Wittgenstein 2022, 163f). In the case of computerized language, the concept of the beetle is removed from our language game in that we cannot determine the concept of a beetle ourselves. However, this does not mean that the concept is meaningless, since it is carried by the computerized language and thus removed from its vagueness. What the elevator teaches us is the connection between pressing the button with the number 5 and the resulting travel process. The mechanism that the elevator uses to link the destination with the button press is unknown to us - but it is nevertheless certain. However, man wants to reach more floors than just the fifth. Out of this desire, he once created language as a tool with which

which he could not only grasp the driving technology of further development, but also reshape it according to his own ideas. However, if language itself becomes a closed black box in the technical images, we do not lose language as an institution of cultural technology, but rather gradually give up the intersubjective component of language. The process of the self-reflexive further development of language in S-AI is thus not arbitrary, but unambiguous due to its mathematical consistency.

Thus, in our memory of the expressions of computerized language, we can actually reflect on their consistency and use their signs with a directionality to their determination made by the S-AI (cf. Candlish 2011, 121f). This is not refuted by incorrect outputs of S-AI, but rather underpinned, since the stochastic fusion of genuine human knowledge and the model of the perceived correctness of a statement on the user side represents a justified procedure and thus a verification of the language adopted by the individuals. Computerized language, like genuine human language, is thus based on a calculation of successful communication. Unlike interpersonal language, it cannot explore or even reveal the mechanism underlying its expression and its truth content in a social structure, since in view of the stochastic query that always takes place in the same technical system, a circular rather than a dialectical procedure takes place. S-AI neither refers to something to which a uniform meaning can be intersubjectively attributed, nor does it refer to itself. Due to their hermetic isolation from the outside world, the technical apparatuses - provided the process of human feedback has been completed and they only develop in a self-reflexive process - seem to withdraw from the language game. However, the coupling of computer and human creates a dynamic of language acquisition that is no longer based on the genuinely human, but on the computerized language architecture.

3 Reflection and Outlook

On the basis of the preceding argument, it can be seen that the information society is possibly heading towards a point at which computerized language has developed to such an extent that it has absorbed and systematized genuinely human language, enabling it to develop into an effective instance of private language, which according to Wittgenstein is unthinkable. In this state, technically generated language presents us with a cardboard companion of human-generated cultural technology, which we can only recognize as such if we separate the processes of genuinely human and synthetic language.

separate. Since Wittgenstein places his conception of private language in relation to the traditional development of language, whereby the focus is solely on the human being as the bearer of the property of communication, it has been successfully demonstrated for the investigation of private language in the context of automation processes why technical apparatuses can also be regarded as independent instances of communication. The computerized language is not spoken here, but merely metabolized by the civilized individuals. On the basis of this separation of society and language, it would be interesting for a further essay to focus on the concept of rule sequences in Wittgenstein's PU and relate it to computerized language.

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