



Digitalization and Its Effects on Language Use: A Linguistic and Sociolinguistic Analysis

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Abstract. *Over the past decades, digitalization has triggered profound changes in nearly all areas of society — not least in language. This article examines how digital forms of communication, social media, artificial intelligence, and computer-mediated interaction influence language use in German-speaking societies. The focus lies on lexical innovations, grammatical processes of change, pragmatic shifts, as well as questions of multilingualism and language change. The analysis draws on relevant work in German linguistics, computational linguistics, and sociolinguistics. The findings show that digitalization gives rise to both linguistic innovations and tendencies toward homogenization, and that in doing so it durably transforms established norms of written language, grammar, and communicative convention.*

Keywords: *digitalization, language change, online communication, social media, computer-mediated communication, anglicisms, emoji, linguistic economy*

Editor's note. *This article was originally written in German and analyzes the German language in the digital age. It appears here in English translation; the German-language examples are retained in the original, with English glosses provided for the reader.*

1. Introduction

Language is not a static system. It is a living, constantly changing means of communication that responds to social, technological, and cultural developments. No development in recent history has accelerated this change as much as digitalization. Since the emergence of the internet in the early 1990s — and certainly since the spread of smartphones and social media in the 2000s and 2010s — the way people communicate has changed at a pace unprecedented in history.

Linguistics observes this change with growing interest. Whereas classical descriptions of language change were oriented toward periods of decades and centuries, digital communication brings about changes within a few years or even months. New words arise virally, grammatical constructions spread through imitation in social networks, and the traditional boundaries between oral and written communication become blurred (Crystal, 2001; Androutsopoulos, 2007).

This article aims to describe and analyze systematically the most important effects of digitalization on German language use. The following questions are central: Which lexical innovations does digital communication bring with it? How does computer-mediated communication change grammatical structures and pragmatic conventions? What role do anglicisms, abbreviations, emojis, and other non-verbal elements play? And finally: Does digitalization pose a threat to linguistic diversity and quality, or does it open up new creative possibilities of expression?

The present study is conceived as an overview that brings together central research perspectives from linguistics, sociolinguistics, and communication studies. It addresses readers seeking a well-founded introduction to the topic and takes into account both theoretical foundations and empirical findings.

2. Theoretical Foundations: Language Change and Language Contact in the Digital Age

2.1 Classical Theories of Language Change and Their Relevance to Digital Phenomena

The question of why and how languages change has occupied linguistics since its beginnings. Classical theories of language change — for instance the Neogrammarians of the nineteenth century or the structuralist school of the twentieth century — focused on phonological and grammatical processes of change over long periods. William Labov's sociolinguistic work of the 1960s and 1970s then suggested that language change is closely connected with social factors such as prestige, identity, and class affiliation (Labov, 1972).

These insights remain valid in the digital age as well, but they must be supplemented and extended. Digital communication creates new social networks that propagate language change at unprecedented speed. The concept of "language change from below" — that is, change originating from the speakers themselves, without normative control from above — applies to digital communication to a particular degree (Androutsopoulos, 2014).

2.2 Computer-Mediated Communication as a Field of Research

The term computer-mediated communication (CMC) denotes all forms of human interaction that take place via digital networks. David Crystal coined the term "Netspeak" early on for the linguistic peculiarities of this form of communication and emphasized its hybrid nature: it is neither pure written language nor pure orality, but a new form that combines elements of both modes (Crystal, 2001).

Naomi Baron (2008) spoke in this connection of being "always on" — a communication culture of constant availability that favors linguistic brevity and informality. Jannis Androutsopoulos, one of the leading German researchers in this field, emphasized the importance of the concept of the "polycentricity" of German in the digital space: since digital communication knows no geographical boundaries, a novel linguistic space arises in which different varieties of German coexist and mutually influence one another (Androutsopoulos, 2007).

3. Lexical Change: Neologisms, Anglicisms, and Semantic Shifts

3.1 Digital Neologisms in German

Probably the most visible effect of digitalization on language is the emergence of new words. German is historically a language inclined toward the formation of compounds — a property that proves particularly productive in the digital age. Words such as *Datenschutz* (data protection), *Suchmaschine* (search engine), *Sprachassistent* (voice assistant), *Nutzerprofil* (user profile), *Verschlüsselung*

(encryption), or *Streaming-Dienst* (streaming service) are neologisms that were either newly formed or compounded from existing words to designate digital concepts.

The Leibniz Institute for the German Language (IDS) in Mannheim documents these developments systematically in its "Neologism Dictionary" database. An analysis of the entries recorded there shows that the proportion of digitally and technologically motivated neologisms has risen continuously since the 1990s and now represents one of the most productive areas of German word formation (Herberg, Kinne, & Steffens, 2004).

Particularly striking is the emergence of entire semantic fields surrounding social media: *posten* (to post), *liken* (to like), *sharen* (to share), *taggen* (to tag), *ghosten*, *twittern*, *zoomen* — all these verbs describe actions that would not exist without digital technology. Many of them have by now found their way into general dictionaries and belong to the active vocabulary of broad sections of the population.

3.2 Anglicisms and the Question of Language Cultivation

Digitalization has dramatically intensified the flow of anglicisms into German. Since the large technology companies — Google, Apple, Facebook/Meta, Amazon, Microsoft — are English-speaking and bring their products and services to market with English designations, German in many cases adopts these terms directly: *App*, *Browser*, *Cloud*, *Dashboard*, *Emoji*, *Feed*, *Hashtag*, *Interface*, *Login*, *Meme*, *Selfie*, *Tweet*, *Upload*, *Website* — to name only a fraction.

This development traditionally provokes differing reactions. Language-cultivation organizations such as the Verein Deutsche Sprache (VDS) criticize the so-called anglicism boom as a threat to German linguistic identity and advocate Germanized alternatives. In contrast, linguists such as Peter Eisenberg emphasize that loanwords have been part of the German vocabulary in every epoch, and that the integration of anglicisms corresponds to a natural process of language contact (Eisenberg, 2011). What is ultimately decisive, on this view, is whether the borrowings are communicatively necessary or whether adequate German expressions already exist.

Empirical studies show that the majority of anglicisms are integrated into German in the long term: they are declined and conjugated according to German inflectional morphemes (*er likt*, *das Liken*, *geliked*), receive gender assignments (*der Tweet*, *die App*, *das Selfie*), and form new compounds (*App-Store*, *Cloud-Computing*, *Datenleck*). Linguists describe this phenomenon as "nativization" or "integration" (Onysko & Winter-Froemel, 2011).

3.3 Semantic Shifts Through Digital Context

Besides the emergence of new words, digitalization also changes the meaning of already existing expressions. *Folgen* ("to follow") today means not only the physical following of a person but also the digital subscribing to a social-media profile. *Teilen* ("to share/divide") now has, alongside its original meaning, the sense of digitally forwarding content. *Virus* is no longer exclusively a biological term but also denotes malicious software. *Surfen* (a sport) and *browsen* (originally: to browse/rummage) — all these words have acquired new or extended meanings in the digital context.

This polysemization is a classic means of linguistic economy: instead of inventing a new word for each new concept, existing words are extended to new concepts. Semantic research speaks of "meaning transfer through metaphor" or "meaning extension" (Keller, 1994). Digitalization has considerably accelerated this process.

4. Grammatical Changes in Digital Communication

4.1 Writing as One Speaks: Conceptual Orality

One of the most significant linguistic observations of recent decades concerns the softening of the traditional boundary between written language and orality. In their much-cited 1985 work, Peter Koch and Wulf Oesterreicher coined the conceptual pair "conceptual literacy" versus "conceptual orality" to make clear that it is not the medium (spoken vs. written) but the communicative intention and design that determines linguistic style (Koch & Oesterreicher, 1985).

Digital communication — above all in chats, short messages, Twitter/X posts, and informal e-mails — is often conceptually oral, even though it is realized in writing. This means it displays features of spontaneous conversational language such as ellipses, anacolutha (grammatical breaks), interjections, dialogue particles, heavily shortened sentences, and loose syntax. The classical written norm, which demands completeness, correctness, and formal structuring, is consciously or unconsciously suspended in these contexts.

4.2 Grammatical Simplification and New Norms

Empirical studies have shown that in digital communication certain grammatical phenomena occur disproportionately often that are regarded as non-normative in the standard written language: capitalization is often neglected, punctuation marks are omitted or functionally reinterpreted (a period at the end of a short message can, in German WhatsApp jargon, now come across as a sign of coldness or disinterest), and verb endings are simplified.

Particularly interesting is the phenomenon of "net language" as an autonomous variety. Linguists such as Christa Dürscheid have shown that young people, in their digital communication, by no means produce "bad" language, but rather a functional variety that follows its own internal norms (Dürscheid, 2002). The deliberate breaking of rules — for instance lowercase writing or missing punctuation — can function as a sign of informality and of belonging to the peer group.

4.3 Syntactic Reduction and Telegraphic Style

A striking tendency in digital communication is the extreme condensation of content. Short messages, Twitter posts (X since 2022) with a character limit of 280, and WhatsApp messages promote a telegraphic style that dispenses with complete sentences: *morgen frei?* ("free tomorrow?"), *ok passt* ("ok, works"), *alles klar* ("all clear"), *wann genau?* ("when exactly?"). These ellipses are pragmatically unproblematic, since the context supplies the missing information. But they also show how technological framework conditions act directly upon linguistic structures.

Alongside this, new syntactic constructions arise from the peculiarities of digital platforms. The hashtag, for example — originally a technical means of tagging content — has developed an autonomous syntactic and pragmatic function: *#stolz* (*#proud*), *#thankful*, *#nofilter* function as metacommunicative comments on the actual content, as irony markers, or as an expression of belonging to a community (Zappavigna, 2012).

5. Pragmatic and Communicative Changes

5.1 New Forms of Communication and Their Linguistic Conventions

Digitalization has produced a multitude of new forms of communication, each with its own linguistic conventions: e-mail, SMS, WhatsApp, Instagram post, TikTok comment, Reddit thread, YouTube

comment, LinkedIn post, Discord chat — all these formats have different norms regarding length, formality, visual language, structuring, and interactivity. Linguists speak of "digital communication genres" (Androutsopoulos, 2007), which bring their own conventions and expectations with them.

Particularly striking is the development of e-mail. What was originally conceived as a fast and informal alternative to the letter has, in many professional contexts, developed into a formal medium with clear norms: salutation, subject line, structured main body, closing formula. At the same time, informal e-mail styles exist that deliberately bypass these norms. This ambivalence between formality and informality is characteristic of many digital forms of communication.

5.2 Emojis and Multimodal Communication

Emojis — the small pictographic signs developed in 1999 by the Japanese designer Shigetaka Kurita for a mobile service — are today an integral component of digital communication worldwide. The Unicode Consortium, which coordinates the standardization of emojis worldwide, now records over 3,600 standardized emojis, and billions of messages daily contain at least one emoji.

Linguistically, emojis are a fascinating phenomenon: they add a para- and non-verbal dimension to written communication that was lacking in traditional literacy. They can modulate tone (a smiling face after a critical statement signals that it is not meant seriously), express emotions, comment on content, or form autonomous communicative units. Vyvyan Evans described emoji as the fastest-growing "language" in the world — even though linguists emphasize that emojis, strictly speaking, do not constitute an autonomous language system, since they lack central features such as productivity and duality of structure (Evans, 2017).

For the German-speaking area, Christa Dürscheid, together with Karina Frick, has presented one of the few empirical studies on emoji use in German-language communication. They show that emojis take on not only emotional functions but also referential and cohesive functions: they connect text segments, replace words or sentences, and contribute to the thematic structuring of messages (Dürscheid & Frick, 2016).

5.3 Politeness, Impoliteness, and Digital Norms

The pragmatics of digital communication also calls into question traditional concepts of politeness and face-saving. Penelope Brown and Stephen Levinson showed in their classic 1987 politeness theory how language serves to protect the "face" of communication partners. In the anonymous or semi-anonymous communication of the internet, however, different norms often apply (Brown & Levinson, 1987).

The phenomenon of "trolling" — the intentional provocation and disruption of digital communication — as well as the spread of hate speech and verbal aggression in social networks are linguistically relevant phenomena. They show that digital communication has produced new forms of linguistic impoliteness, aggression, and verbal attack, which are studied by linguistics under the concept of "impoliteness" or "discourse ethics" (Culpeper, 2011).

At the same time, new positive communication norms arise: the use of content and trigger warnings, the practice of "inclusive language" — that is, the deliberate use of gender-neutral or inclusive formulations — as well as new norms of approval and feedback (the "like" as a minimal act of recognition). These developments show that digital communication does not only dismantle norms but also creates new ones.

6. Sociolinguistic Perspectives: Linguistic Inequality and Digital Participation

6.1 *The Digital Divide and Linguistic Exclusion*

Digitalization does not proceed evenly through all social strata. The term "digital divide" describes the gap between those who have access to digital technologies and can use them competently, and those who lack this access. This divide has a linguistic dimension: whoever does not master digital forms of communication is excluded from important social, economic, and political processes.

Digital language use — composing e-mails, formulating applications online, navigating digital bureaucracy — presupposes a specific linguistic and technical knowledge that is not evenly distributed across the population. Older people, people with low levels of education, or those with a migration background are affected above average by this form of digital language barrier (Warschauer, 2003).

6.2 *Linguistic Diversity and Multilingualism in the Digital Space*

On the one hand, the internet has contributed to the dominance of English as a global lingua franca — especially in scientific, technical, and commercial contexts. On the other hand, it also offers speakers of smaller and regional languages new possibilities for the visibility and cultivation of their languages. Wikipedia exists in over 300 languages, YouTube videos are produced in hundreds of languages, and social media enable the building of language communities across geographical boundaries.

For German this means an ambivalent development. On the one hand, the internet strengthens the German-speaking public sphere: there are German-language news sites, forums, podcasts, YouTube channels, and social-media communities of enormous reach. On the other hand, the flow of anglicisms and the dominance of English-language platforms push German back in certain domains — especially in science, technology, and global entertainment culture (Ammon, 2015).

6.3 *Youth Language and Digital Identity Construction*

Linguistic changes through digitalization show themselves particularly clearly in youth language. Young speakers use digital forms of communication more intensively than any other age group and are thus both recipients and producers of linguistic innovation. The youth researcher and linguist Michael Beißwenger has shown how digital communication is used for the construction of youth identities: linguistic signs such as certain emojis, abbreviations, anglicisms, or spellings signal belonging to the peer group and familiarity with current digital trends (Beißwenger, 2007).

Current examples from the German-speaking area are the adoption of internet slang from English (*cringe*, *sus*, *vibe*, *flex*, *slay*), the emergence of new words and expressions from video-game culture (*GG* for "good game," *AFK* for "away from keyboard"), and the integration of terms of Arabic or Turkish origin from migrant communities (*Habibi*, *Wallah*, *Lan*) into the language use of German-speaking young people — a phenomenon discussed as "Kiezdeutsch" or "ethnolect" (Wiese, 2012).

7. Artificial Intelligence and the Future of Language Use

7.1 *Automatic Language Processing and Its Repercussions*

The most recent phase of digitalization — the spread of artificial intelligence (AI) in everyday life — poses fundamentally new questions for linguistics. AI-supported spelling and grammar checkers (from simple autocorrect to AI services such as Grammarly or DeepL Write) influence the language

use of millions of users daily. They correct, suggest alternatives, and thereby standardize spelling and expression — sometimes in agreement with official norms, sometimes in contradiction to them.

Particularly interesting are the repercussions of automatic translation systems on language use. DeepL, Google Translate, and other machine-translation services are now so precise that they are sufficient for many practical purposes. This changes people's relationship to foreign languages and — through back-translation effects — to their native language as well. Texts that originate from AI translations or have been edited by AI have a characteristic style that linguists now discuss as "AI language" or "translationese."

7.2 Large Language Models and Societal Effects

The introduction of large language models (LLMs) such as ChatGPT (OpenAI), Claude (Anthropic), or Gemini (Google) from 2022/2023 onward has opened up a new dimension of human–machine language interaction. These models can produce texts in natural language that are barely distinguishable from human texts — which raises profound questions for schools, science, journalism, and the legal system.

For linguistics, LLMs pose a fascinating challenge: on the one hand, these models learn from human texts and thereby mirror existing language patterns and norms — including their biases. On the other hand, they produce language on a scale and in a diversity that can feed back into public language use. Initial studies suggest that LLM-generated texts already have a measurable influence on the writing practices of students and professionals (Guo et al., 2023).

The use of voice assistants (Alexa, Siri, Google Assistant) further changes the way people communicate with machines and thus implicitly their communication norms as well. The necessity of expressing oneself clearly, precisely, and comprehensibly for a machine does, on the one hand, train certain aspects of linguistic competence; on the other hand, habituation to simplified interaction patterns could in the long term have effects on interpersonal communication.

8. Standardization, Language Policy, and Linguistic Identity in the Digital Age

The developments outlined raise fundamental questions about linguistic standardization and language policy. Traditionally, institutions such as the Duden publishing house, the Society for the German Language (GfdS), and state educational authorities have defined and disseminated the norms of written German. In the digital age, this normative authority comes under pressure: when millions of people communicate daily in a linguistic form that deviates from the official norms, the question arises of who sets the norms.

The Duden itself has responded to this challenge by regularly expanding its dictionaries to include digital neologisms and colloquial expressions. Since the Duden was made available for online use and the possibility of looking up words digitally, the relationship of the speech community to the norm has changed: the Duden is less an immutable authority than a dynamic tool that responds to actual language use.

At the same time, new norm-setting authorities arise in the digital space. Influencers, YouTubers, and social-media personalities with millions of followers have a direct influence on language use and language norms — especially among young people. A word or a particular mode of expression used by a popular online personality can spread virally within hours and become a fixed component of a generation's active vocabulary.

From a language-policy perspective, it is also significant that German, as an official language of the European Union, the Federal Republic of Germany, Austria, Switzerland, and other states, is influenced by an increasingly globalized and English-dominated digital culture. Language-policy measures — from the promotion of German-language content on the internet to the introduction of instruction in media and language competence in schools — are attempts to meet this challenge (Ammon, 2015).

9. Discussion and Conclusion

The present analysis has shown that digitalization has profound and multilayered effects on German language use. These effects concern all linguistic levels: the vocabulary (neologisms, anglicisms, semantic shifts), grammar (conceptual orality, syntactic reduction, new constructions), pragmatics (new communication genres, emojis, changed politeness norms), and sociolinguistic conditions (digital divide, multilingualism, youth language).

It would be one-sided to evaluate these developments simply as "decay" or as a "threat" to the German language. Language change is a natural and inevitable process that takes place at all times. What makes digitalization unique is the speed at which this change occurs and the reach of the new forms of communication, which affect speakers of all strata and regions. At the same time, digitalization creates new spaces for linguistic creativity, for the cultivation of minority languages, and for global communication across language boundaries.

The task of linguistics is not to evaluate or stop these developments but to describe them, to explain them, and to analyze them in their societal significance. The task of language pedagogy and educational policy is to equip young people with the competencies they need in order to navigate a digitalized linguistic world competently and critically: digital language competence, critical media competence, and a conscious relationship to their own linguistic practice.

In conclusion, it remains to be noted that the relationship between digitalization and language is not a one-way street. Language changes digitalization just as digitalization changes language: the way we talk about technology, which metaphors we use for digital concepts, how AI systems learn and produce language — all this shows that language is not only a tool for describing the digital world but is actively involved in its construction. This dialectical relationship between language and technology will remain a central theme of the linguistics of the twenty-first century.

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