



Article

Semantic Shifts in the 21st Century: English, Polish, and Ukrainian Perspectives

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Abstract

The article is devoted to analyzing semantic changes in the languages of the twenty-first century on the material of English, Ukrainian and Polish, in particular their types, cultural causes and the impact of globalization processes. The study's relevance is stipulated by the need to understand the mechanisms of language evolution in the modern world and their adaptation to new cultural and social challenges. Focusing on comparing English, Ukrainian and Polish allows us to identify common trends and unique features of semantic changes. The purpose of the article is to investigate the nature and causes of semantic changes in the languages of the twenty-first century, to systematize neologisms by semantic categories and to analyze cultural factors that influence the development of languages. The study used descriptive analysis, comparative and contrastive approaches, classification of neologisms, and cultural analysis. The study results show that semantic changes, such as expansion, narrowing and transfer of meaning, reflect modern socio-cultural processes. In English, technological metaphors dominate; in Ukrainian, terms are driven by socio-political realities; and in Polish, anglicisms are adapted to local norms. The analysis also shows the influence of media, social networks and information technology on the emergence of new meanings of words.

Keywords: semantic changes, neologisms, English, Ukrainian, Polish, cultural factors, globalization.

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Introduction

Language as a complex system never stands still; it, like its speakers, develops and lives. Over time, any language undergoes changes that can be subtle or profound, positive or negative. Lexical and semantic changes in any language cannot be spontaneous; they are always predetermined and arise in response to the needs of nomination. The lexical system of a language is known to be the most mobile and flexible, as it changes dynamically and constantly along with the development of a particular language group, reflecting events in society, changes and modern trends (Galang-Pereña, 2024). The era of the Internet and modern technologies has had an extraordinary impact on languages and their evolution. New lexical items have appeared (and continue to appear), and familiar words are acquiring new meanings and senses.

It should be noted that the field of neology is developing as rapidly as the object of its study - new words. Moreover, researchers at the end of the twentieth century estimated the number of new English words to be 12,000 per year (Barnhart, 1985); in 2002, this figure increased to 10,000 new words and word forms per day (Metcalf, 2004). The number of neologisms that appear in the language daily in our time is incalculable. Of course, these words are not fully included in the broad sphere of use, but they are included in dictionaries. Nevertheless, lexicographers try to record all new lexical items that appear, allowing us to draw a more complete picture of current trends in the development of language and speakers in society. All of the above emphasises the relevance of our work.

This article aims to investigate the semantic changes taking place in the languages of the twenty-first century and to find out their cultural causes based on the English, Ukrainian, and Polish languages. To achieve this goal, the following tasks are required: to identify the main types of semantic changes characteristic of the languages of the twenty-first century; to classify neologisms in English, Ukrainian and Polish according to the semantic principle; to identify cultural factors influencing changes in word meanings in each of the languages under study; to compare the nature of semantic changes between English, Ukrainian and Polish; to assess the impact of globalization processes, media and technologies on semantic changes in the languages of the twenty-first century.

Literature review

The review of theoretical sources on language change has shown that works concern a broad scope of aspects of the issue under discussion, touching upon

language transformations, their causes, and consequences. Thus, Aitchison (2001) considers the development of language from the position of semiotics; the interaction of cultures and social factors that influence the structure of languages is discussed. Campbell (2001) provides a historical overview of the development of linguistics, highlighting the key theories and approaches that have shaped the discipline. Anderson (2014) analyses morphological change, exploring the causes and mechanisms of transformations in word structure. Fortson (2003) examines semantic change through historical and social context, offering a deep understanding of meaning transformation.

According to Androutsopoulos (2011), digital technologies significantly affect language standardisation and its adaptation to digital media. Barnhart (1985) investigates the role of computer technology in finding new words for dictionaries, which points out the importance of modern methods in lexicography. Brown (2015) explores the creation and use of terms for sexual orientation and gender identity, paying much attention to their influence on social and cultural narratives. Similarly, Carlson and van der Zee (2004) also discuss the functional features of language in perception, categorisation, and development.

Akidah (2013) discusses the issue of borrowing and change in languages, analysing some Arabic words borrowed into Kiswahili and considering changes in form and meaning. Chen (2024) addresses semantic change from a lexical perspective, focusing on the mechanisms of word meaning change. Asri et al. (2024) investigate the semantic change in English and German by analysing their historical and social contexts.

Algeo (1991) offers a retrospective survey of English neologisms over fifty years, while Cook (2010) focuses on linguistic methods for analysing neologisms' properties. Clayton (2016) investigates attitudes towards language change and variation, suggesting the integration of this knowledge into educational programmes.

Chambers and Wilkie (2014) cover the history of the German language, analysing its Indo-European roots and stages of development. The second theme discussed is the impact of history and the spatial on linguistic categories by Carlson and van der Zee (2004). Traugott (2006) considers semantic changes of narrowing, broadening, strengthening, and "whitening" of meaning indicative of practically all lexical changes. Koch (2016) addresses semantic changes from the point of view of lexical typology in describing changes in meaning across diverse languages. In contrast, Winter and Srinivasan (2022) evaluate asymmetric semantic change regarding the contribution of specificity, word frequency, metaphors, and metonymies.

In fact, in recent works, Tahmasebi et al. (2021) and Perrone et al. (2021) have advanced computational approaches to studying semantic change using significant corpora of texts, which becomes particularly appropriate in the case of historical languages, such as Ancient Greek and Latin. Lehtinen (2009) analyses language change as an evolutionary process and underlines the role of social and cognitive factors. In the same vein, Lehmann (2013) provides an overview of historical linguistics processes, focusing on the basic principles of change. Whereas Morrison (2012) examines lexical innovation in late medieval English, Metcalf (2004) examines the conditions for the success of a new word in a modern language. Kay et al. (2004) focus on the syntax and morphology of English from a historical perspective, adding new perspectives to develop these aspects.

Guest et al. (2012) apply thematic analysis to the study of language change, allowing for exploring hidden trends in extensive textual collections. Stockinger (2015) draws attention to the semiotic approach in digital archives, which contributes to a better understanding of change in the context of digital media. Moreno et al. (2015) analyse the impact of social media on communication practices, focusing on how digital tools affect the development of languages.

Hao and Chi (2013) investigate semantic changes in English, focusing on these transformations' social and cultural aspects. Zlatev (2009) analyses the levels of meaning, embodiment, and communication, emphasising the importance of integrating a cognitive approach to studying language change.

In general, modern linguistics analyses types of change, the impact of digital technologies, borrowing, and lexical innovation, and uses computational approaches to study large text corpora. Language is a dynamic phenomenon that develops under the influence of historical and contemporary processes (Demyanchuk, 2024).

Methodology

The study is based on a comprehensive methodology, which includes the following methods. *The descriptive method* was used to identify the main types of semantic changes characteristic of the languages of the twenty-first century and to analyse specific examples of semantic transformations. *The comparative and contrastive method* was used to analyse and compare semantic changes in English, Ukrainian and Polish. *The classification method* allowed us to systematise and classify neologisms according to the semantic principle in each studied language. The *cultural approach* was used to identify cultural factors that influence changes in word meanings in languages, including the influence of traditions, social changes and globalization. *Contextual analysis* helped to study changes in word meanings in their socio-cultural context, including the role of media and technology. The study's material was 300 neologisms

selected by continuous sampling from specialised dictionaries (100 English, 100 Ukrainian, and 100 Polish lexical items).

Results

Education plays a decisive role in language dynamics, contributing to the adaptation of language to changes in society while preserving traditions. Educational processes shape key knowledge and skills that are important for effective communication and play an important role in preserving linguistic identity. The main areas of influence of education on language change include: the creation and maintenance of language norms, the formation of language culture, the adaptation of language to change, the improvement of the language level of the population, the actualization of the role of language for unity and integration, the promotion of national identity, and the change of language skills.

The English language demonstrates high dynamics of semantic change, mainly due to the influence of technology, the Internet, and pop culture. The lexical unit *cloud*, which used to mean only a "cloud" in nature, has acquired a new meaning in the IT sector – "cloud data storage". The word *tweet*, which historically meant "birds chirping", is now primarily associated with messages on the social network Twitter. The metaphor in the word *virus* has shifted the meaning from "biological virus" to "computer virus".

Sociopolitical processes, technological development, and cultural globalization primarily cause semantic changes in the Ukrainian language. The nomination "активіст" has denoted not only a participant in social movements but also any person who is active in various spheres of public life. Borrowings such as "зум" (from Zoom) are now used to refer to video conferencing, regardless of the specific application. The lexical unit "волонтер" has acquired an exclusively positive meaning associated with supporting socially significant initiatives, especially in times of war.

In Polish, semantic changes are related to globalization, the growing popularity of anglicisms and the influence of new technologies. The word *smart* has become part of compound terms such as *smartphone* and *smartwatch*, reflecting modern technological advances. The nominalisation *sieć* (net) is now actively used in the sense of "internet", in addition to the traditional meaning of "fishing net". The nominal unit *aplikacja* (app) is more associated with mobile or computer applications than any other form of information presentation in modern language.

All three languages are experiencing similar trends related to globalization, technological developments, and socio-cultural changes. The main types of semantic

changes are expansion, contraction, and transfer of meaning, as well as new connotations for existing words. Quantitative data is presented in Table 1.

Table 1. Semantic changes in English, Ukrainian and Polish neologisms

Language	Semantic change	Example	Explanation	Quantity
English language	Value extension	cloud, app, mouse, tablet, drive, platform	The meanings of 'cloud' and 'app' are now related to IT technologies.	30
	Narrowing the value	tweet, stream, friend, like, tag	General concepts that are now primarily associated with social media.	25
	Transfer of meaning (metaphor)	virus, bug, worm, firewall, cookie	These terms have moved from biology and other fields to computer science.	45
Ukrainian language	Value extension	activist, volunteer, mediator, coordinator	It refers to people who are active in various spheres of public life	35
	Borrowings	Zoom, chatbot, flashmob, stories, podcast, influencer, feedback	New terms for modern technological and social phenomena.	40
	Change of connotation	Eurobanker, visa-free, green tariff, reform, cotton wool	The terms have acquired a new meaning due to social events.	25
Polish language	Borrowing a value	smart, startup, blog, app, coach, selfie	Terms that reflect innovation and entrepreneurship	40
	Value transfer	sieć, platforma, chmura, strona, okno, konto	It means 'network' and 'platform' but is often associated with the Internet.	30
	Modifying a value	aplikacja, influencer, profil, kamera, stream	Words that point to mobile apps and influence in social media.	30

As can be seen from the data in the table, English is dominated by transfers of meaning, which is due to the widespread use of metaphors in technological and media contexts (45%). In Ukrainian, borrowing is the most prevalent (40%) due to the adaptation of terms related to technology and globalization. In Polish, borrowings of meaning are the key (40%), emphasising anglicisms' strong influence.

The classification method allowed us to identify the main semantic categories of neologisms typical for the English, Ukrainian and Polish languages in the twenty-first century. In English, a significant proportion of neologisms are terms related to technology and the Internet. For example, the lexical items *selfie* and *finfluencer* illustrate the influence of social media and digital culture. Hybrid words such as *cybercrime* are also common.

The main categories of neologisms in the Ukrainian language are formed through socio-political changes and borrowings. For example, words such as "євробляхар" (owner of a car with foreign registration) and "безвіз" (visa-free entry) appeared in connection with political reforms. Technology-related words, such as "chatbot," are also widely used.

This concerns the process of borrowing from foreign languages. It usually refers to neologisms made on local linguistic grounds but modelled after their English versions, such as *lajkować* *streamować*, and new words for innovations concerning social development: *śmieciarka*.

The principal semantic categories include technological terms, socio-political vocabulary, and words related to globalization and lifestyle changes. Figure 1 illustrates the results of the quantitative distribution.

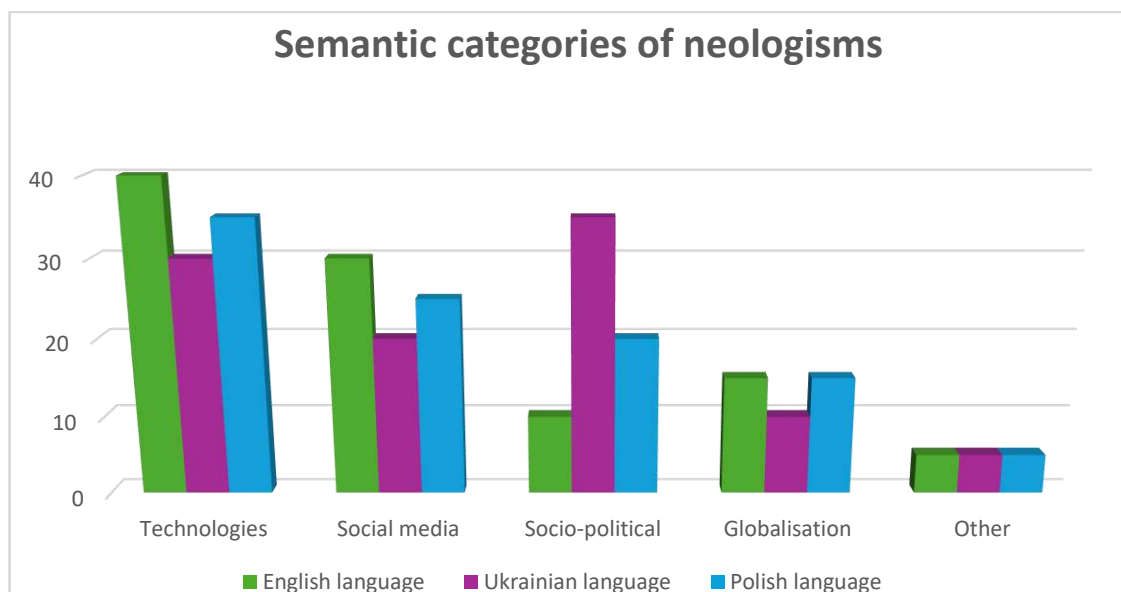


Figure 1. Semantic classification of neologisms in English, Ukrainian, and Polish

The distribution analysis of neologisms by semantic categories in English, Ukrainian, and Polish has highlighted some important trends. In all three languages, the leading position belongs to technological terms, which underlines the significant influence of scientific and technological progress on modern vocabulary. The largest

share of such neologisms is found in English (40%) because it is a language of technology and global communication. Polish borrows 35%, while Ukrainian borrows and adapts 30% of their terms for recent technologies.

Neologisms of social media have the most significant share in both English-30% and Polish-25%, which explains their extreme usage of the Facebook, Twitter, and TikTok networks. A minority of 20% represents the above category in Ukrainian and could testify to a more conservative way of word-creating. Sociopolitical terminology is best represented in Ukrainian 35%, reflecting the current political process, including military events and reform.

In Polish, this share is 20%, and in English, it is only 10%, which may be due to differences in the socio-political conditions of each country.

Globalization terms have almost the same distribution in all three languages (10-15%), indicating the overall impact of integration processes. English has a slight advantage in this category, as it is the source of many global concepts. Other neologisms that do not fall into these categories have the same share in all three languages (5%).

The prevalence of technological terms in English is explained by its role as a source for many new concepts. Due to the large number of socio-political terms, Ukrainian reflects the local context to the greatest extent, a consequence of active societal changes. Polish balances between globalization influences and preserving national identity by adapting both Anglicisms and local terms. All three languages show common developmental trends, but the cultural, social and political context determines their unique characteristics.

In English, cultural change is often driven by technology and social phenomena. For example, as mentioned above, the word *cloud*, traditionally meant "cloud", is now associated with "cloud computing". The nomination *blockchain*, which initially had a narrow technical meaning, is now used in a broader context to describe any transparent and decentralised system. In popular culture, the word *stan* (meaning "fanatic admirer") has gained popularity due to the influence of music subcultures.

In the Ukrainian language, socio-cultural changes are reflected in the transformation of word meanings, especially in the context of political and social events. For example, the word "гідність" has acquired a new, stronger connotation after the Euromaidan events, which is associated with the struggle for freedom and rights. The English loanword "діджиталізація" has become a sign of modern reforms, both in public administration and in business. Also, the word "vibe" started to be used to describe an atmosphere or mood.

Cultural factors contribute to changes in word meanings in the Polish language due to the influence of the growth of the globalization process. For example, the word *ekologia*, which has a narrow scientific meaning, is used nowadays to refer to an ecological way of life and conscious consumption. In this cultural context, associated with an active urban lifestyle and environmental awareness, the word *rowerzysta* is acquiring a new meaning. The word *platforma* is actively used now in the meaning of "online platform", which already shows the effects of digitalisation.

The example represents how cultural changes, such as globalization, social processes, and technology, impact language semantic development. Such processes are language-specific because they reflect peculiar cultural and social realities.

In Polish, there is a tendency to create new words or change the meaning of existing ones to describe new technologies and phenomena such as the Internet, social networks, and artificial intelligence. The key aspects of semantic changes in Polish include: the significant influence of English (internet, smartphone, software); changes in the meaning of individual words (internet can mean not only a network, but also a specific website or service); the formation of new words by combining elements of several languages (cyberbullying); borrowing words from German, French, and Russian; and the dynamics of lexical-semantic groups (the word *zmienić się* can mean not only physical change, but also a change in thoughts or views).

Contextual analysis represents how the socio-cultural environment, media's role, and technology's development influence the meaning of words in English, Ukrainian, and Polish. The dynamics of the linguistic picture of the world is positioned as a kind of marker of the current stage of socio-political development. Some lexical innovations function in the linguistic field for a short time, then disappear completely or become integrated into the passive vocabulary. At the same time, the use of traditional lexemes in new contexts also causes dynamics in the linguistic picture of the world, which is often characterized by expressions of expressive and evaluative connotations.

During the war in Ukraine, the influence of sociolinguistic factors on language is characterized by emotional intensity and expressive marking. New words formed by word formation means dominate among the neologisms of socio-political topics. Somewhat less common are new borrowings. In general, changes in the linguistic picture of the world are differentiated according to the directions of official political discourse and mass media discourse. Such lexemes are stylistically and semantically heterogeneous.

At the same time, among the newest linguistic formations of discourse in the Ukrainian language, stylistically neutral neosemantisms are distinguished, which

were created to identify new definitions (e.g., network society, in which social networks play a key role; information hygiene, the minimization of the destructive impact of information on human health, etc.).

The most adaptable and dynamic group of lexemes in the current Ukrainian language is the one that determines socio-economic changes (e.g., money laundering, dirty money, window of opportunity, cold call, perfect storm, investment climate, etc.). Borrowing of this kind contributes to the intensification of derivational processes in the linguistic picture of the world.

Neologisms in the English lexicon that sociolinguistic factors have formed are represented by words and expressions that have become established in recent years: "To tweet" – to post on the social network Twitter; "Peoplekind" – a gender-neutral alternative to the word "humanity," etc. Examples of semantic changes in English vocabulary include bedroom tax – a reduction in housing benefits if a home has more bedrooms than necessary for the number of people in the household; squeezed middle – a section of society considered to be particularly affected by inflation, wage freezes, and cuts in government spending, etc.

The meaning of words in English is constantly changing with the new contexts provided by social media and digital technologies. For example, the word stream meant "a stream of water"; nowadays, it refers to streaming video or music online. The word like has taken on a new sense: as an action to be done on social media. While the traditional meaning of the word "post" implies "mail" or "publication," nowadays, it is mainly used to refer to publishing something on social media.

In Ukrainian, the role of media and social change is embodied in word meanings that acquire the function of markers of social phenomena. Thus, for example, a meme is a type of graphic or textual joke that quickly spreads across the Internet. The word 'post' has acquired a new meaning in the context of social media. The word "trend," from its traditional meaning of "tendency," has been used very frequently to describe popular topics or styles in the digital environment.

Contextual influence due to technology and media can also be observed in word changes within Polish. For example, the word *kamera* initially referred exclusively to a device for taking photos or videos; nowadays, it is often used to mean a webcam integrated into computers or smartphones. The word profile, traditionally associated with a side view of a face or personality characteristics, nowadays refers to social media accounts. The word *live*, which refers to live performances or broadcasts, has come to mean live broadcasts on digital platforms such as Facebook or Instagram.

The gender component can manifest itself in neologisms in the form of gender-colored neologisms (words that contain a gender component in their semantic

structure: dadpreneur, omega male, alpha earner in English) and gender-neutral neologisms (activist investor, bankster, funt, sugar daddy, office plankton, knowledge angel, glow boy). Changes in the social order determine gender marking in the lexicon, the peculiarities of the formation of social roles of men and women in society, the dynamics of the sociocultural, economic, and political spheres of society, which are reflected in the existence of gender stereotypes. The semantics of these neologisms reflects changes in the socio-cultural sphere.

In Polish, there is an age-old superiority of the masculine over the feminine, and some feminine forms formed according to the logic and rules of word formation are disqualified due to overlapping meanings (*polityczka*, *muzyczka*, etc.). Another argument is phonetic: the addition of a "feminine" suffix can make a word awkward to pronounce: *adiunktka*, *chirurgka*. At the same time, supporters of expanding feminities in Polish emphasize differentiation: the words *kelnerka* and *fryzjerka* are completely neutral, but *adwokatk*a is unnatural and condescending, which is associated with greater social prestige. Language conservatives, on the other hand, recommend hybrid forms: *pani poseł*, *pani minister*, *pani profesor*.

In Ukrainian, gender semantics influences the perception of gender in society and can reinforce or reduce gender inequality. Gender-neutral language can help break down stereotypes and promote gender equality ("employee" vs. "female employee"; "person" vs. "man" / "woman"; "they" instead of "he" / "she").

The above examples demonstrate that the socio-cultural context and the development of digital technologies contribute to the change in word meanings and the emergence of new connotations. The media environment creates conditions for the intensive use of new meanings, while technology ensures their rapid spread in all three languages.

Discussions

Dan Clayton, analysing the perception of language change, quotes several media representatives who describe new words born in youth slang or coming from the American version of English as "decline", "degeneration", "destruction" of the English language, comparing them to a species of Carolina grey squirrels that drive out native species, thus destroying the linguistic ecosystem: "like the grey squirrel destined to drive out native species and ravage the linguistic ecosystem" (Clayton, 2016, pp. 86–87). In contrast, well-known lexicographer John Algeo notes, "We use some new words because it gives us a particular pleasure. They reflect changes in both the material world and the cultural world. They allow us to demonstrate how a person solves the problems they face (Algeo, 1991, p. 15).

The study's results confirm the last thesis that language, as a living system, reflects dynamic changes in society and responds to new cultural, technological, and social challenges. Semantic transformations in English, Ukrainian, and Polish have common features but also differ significantly due to each language's unique cultural and social context.

English, due to its global role, is extremely flexible and adaptable. Semantic changes in English are mostly related to the development of technology, Internet culture and pop culture. This thesis is confirmed in other studies, including Androutsopoulos (2011), Hamilton et al. (2016), and Leonardo (2022). For example, words with physical meanings (*cloud*, *stream*) have acquired new meanings related to digital technologies. English plays an important role in these changes as a source of innovative vocabulary rapidly spreading to other languages.

The Ukrainian language, in turn, reflects not only the influence of globalization trends but also local socio-political processes. Borrowings such as *вебінар* or *фриланс* demonstrate the influence of digital technologies and new work formats, but many neologisms are a reaction to unique Ukrainian realities. For example, the words *діджиталізація* or *кавуни* have acquired a special meaning: the former has become a symbol of modern reforms related to digital changes, and the latter is a symbol of the liberation of the Kherson region, associated with social and political events.

Like English, the Polish language is experiencing a significant impact of globalization, which is confirmed, in particular, by Milkowski (2012). However, its semantic transformations are aimed at adapting Anglicisms to local norms, which indicates the preservation of national identity in the context of integration into the global information space.

Contextual analysis has shown the importance of socio-cultural conditions that create unique prerequisites for semantic changes in each language. For example, the role of media and digital platforms is evident in the emergence of new meanings for words related to social media and the Internet. Words like *post* or *donuc* point to the emergence of new semantics answering the needs of the modern information environment.

In other words, semantic changes in the languages of the twenty-first century reflect the complex interaction of global and local factors. Such changes manifest the ability of languages to adapt to the modern world and to reflect technological progress, cultural peculiarities, and social needs.

Conclusions

The research concluded that semantic changes in the languages of the twenty-first century are complex and multidirectional, influenced by technologies, globalization, and cultural and socio-political changes. English shows the most dynamic changes because of its global status and active participation in information and technological processes. Ukrainian reflects specific socio-political realities, while Polish combines the integration of global trends with the preservation of national identity.

The main types of change are expansion, contraction, transfer of meaning, and change of connotation. All three languages demonstrate these processes, but with different accents. In English, the transfer of meaning through technological metaphors dominates; in Ukrainian, the borrowing and adaptation of new terms, and in Polish, the integration of anglicisms with the localisation of their meaning.

Cultural analysis has shown that semantic changes reflect the socio-cultural context of a language group. The influence of traditions, social transformations, media and technology often drives changes in word meanings. For example, terms related to social media are acquiring new meanings in all three languages.

Technological innovation is one of the most potent drivers of semantic change. All three languages are actively developing vocabulary related to information technology, as evidenced by the widespread use of terms such as *cloud*, *зум*, and *aplikacja*.

The Ukrainian language is unique in the formation of new meanings driven by social and political events, such as "*євробляхар*" or "*бєзвіз*". Polish reflects both globalization and the preservation of national traditions; it receives borrowings and adapts them to their language system.

Neologisms are among the most important features that characterise the development of languages within modern society. They reflect the influence of new technologies, media, and globalization and the ability of languages to adapt themselves to new realities. Semantic changes form part of languages' evolution during the twenty-first century. They reflect the complicated interaction of global and local factors and are, at the same time, an important tool for languages' adaptation to the modern information and cultural space.

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Conflicts of Interests

The authors declare no conflict of interest.

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