LANGUAGE IN THE HUMAN-TECHNOLOGY ERA. NEW TERMINOLOGY ON THE SEX (ROBOT) MARKET – "DIGISEXUALITY", "TECHNOSEXUALITY" AND "ROBOSEXUALITY" – A MULTILINGUAL ANALYSIS AND SURVEY AMONG STUDENTS

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Purpose: The purpose of this article is to explore and analyze neologisms in English, German, French, Spanish and Polish that arise in the context of technological advancements, especially in the field of emerging sexual technologies; and to check their codification in dictionaries. Moroever, the research aims to verify whether students know the terms "digisexuality", "technosexuality" and "robosexuality"and understand the differences between them.

Design/methodology/approach: This article comprises two main sections: the first section conducts a linguistic analysis of three neologisms related to sex robotics in multiple languages to explore their structure, spelling variations, and codification. The second section presents the results of a survey conducted among 134 students aged 20-24, aiming to assess their awareness and opinions on emerging sexual technologies and their ability to distinguish between similar terms.

Findings: The article examines three blend neologisms, digisexuality, technosexuality, and robosexuality, in five languages, formed by combining prefixes with "sexuality". While these terms lack codification in dictionaries, their adjective forms are defined in English due to frequent usage. The survey of 134 students aged 20-24 revealed their unfamiliarity with these concepts and difficulty in distinguishing them, along with gender-related disparities in comfort levels when discussing sex robots.

Practical implications: These findings emphasize the need for educational initiatives and awareness campaigns to familiarize individuals, particularly young adults, with these evolving concepts.

Social implications: The evolving nature of these neologisms and their potential impact on human experiences and relationships highlight the need for continued research in the fields of communication, technology, and human sexuality.

Originality/value: The terms "digisexuality", "technosexuality" and "robosexuality" were not analysed and compared in five languages including their codification. Moreover, the study depicts the students' awareness and understanding of those concepts and differences between them.

Keywords: neologisms; digisexuality; technosexuality; robosexuality, sex (robot) market.

Category of the paper: Research Paper.

1. Introduction

Communication plays a vital role in human interactions, facilitating the exchange of information, emotions, and ideas. Effective communication involves mastering various levels, including phonetics, grammar, lexis, and pragmatics in every language. Specialized languages and the language of technology play a critical role in the development of knowledge and expertise within a field. For instance, in scientific research, the use of specialized language enables researchers to communicate and share their findings accurately and effectively (Brownell, 2014; Nagy, 2014).

The use of technical terminology also enables experts to identify areas of knowledge gaps and develop new research questions. Neologisms are a fundamental aspect of language, allowing speakers to express new concepts and experiences that do not have pre-existing words or phrases. They are an essential part of language evolution, as language adapts to new technologies, social norms, and cultural practices.

Neologisms, characterized as lexical units not previously documented in a particular language, derive their importance from their inherent novelty. The key factor in recognising novelty is connected to the individual interpretation of the speaker (Rey in Llopart-Saumell, Cañete-González, 2023).

In recent decades, neologisms have become increasingly prevalent in technology-related fields, as new products, services, and innovations require new terminology to describe them. They are created to refer to new concepts, objects, or phenomena that emerge in society, and they can have a variety of functions, ranging from filling lexical gaps to expressing new social and cultural norms. Thus, the new terminology is created to construct the social world.

According to Searle (2006) there exist two distinct types of realities: (1) a physical reality, which is unquestionably genuine and accepted as given, and (2) a social reality that depends on human agreement and is constructed by us. The social-human realm can be seen as an additional layer, possibly virtual, superimposed upon the physical world. Consequently, language serves as a tool for layering, embellishing, and adorning. Its purpose is to confer social significance upon objects, including technological artifacts. The act of assigning meaning to things is exclusive to humans. The entirety of the social world is a product of our own creation, and the language is an integral part of this social world, forged by our own hands.

A new era of intelligent systems has begun as a result of technological developments in robotics and communication. As researchers push the boundaries of innovation, novel terminologies are emerging to describe the complex interactions between robots, humans, and the surrounding environment. This article explores the evolving lexicon in the field of robotics and communication, shedding light on key terms that encapsulate the transformative nature of these domains.

This comparative analysis aims to examine and compare the definitions and linguistic aspects of three terms: *digisexuality, technosexuality, and robosexuality.* These terms represent emerging concepts in terms of human sexuality and technology. By analyzing their definitions and linguistic characteristics, we can gain insights into the concepts they represent and their linguistic representations in English, German, French, Spanish, and Polish.

Among these languages, English and German are Germanic languages, sharing historical roots and common linguistic features. French and Spanish, on the other hand, are Romance languages, both evolving from Latin. Polish belongs to the Slavic branch of the Indo-European family, sharing linguistic ties with other Slavic languages such as Russian, Czech, and Slovak. The complexity of the Polish language stands out prominently when compared to English, German, French, and Spanish (Wołk et al., 2022). English, German, French and Spanish, however, belong to the group of pluricentric languages (Skubis, 2016; 2017).

Moreover, it is worth checking, whether tho   se concepts are codified in dictionaries in the above-mentioned languages. The research aims to contribute to communication research by exploring the nuances and similarities between these terms and their significance in addressing important problems and issues facing humankind within close relationships, groups, organizations, and cultures.

2. (Sex) Robots' Market

Currently, we are witnessing and personally experiencing a significant shift in attitudes towards sexuality known as the sexual revolution. This transformation is being facilitated by advancements in technology and artificial intelligence, allowing us to develop machines that closely resemble and behave like humans, including intelligent sex robots. As technology continues to evolve, more sophisticated mechanisms are being introduced to the market. These mechanisms can imitate, stimulate, and even establish direct physical contact with individuals.

Researchers such as Arnold (2020), Aleksandrovich and Gomes (2020), Arnold and Scheutz (2017), Gomes and Wu (2020), Kolivand et al. (2017), and Li et al. (2017) have explored various technologies including virtual reality, soft robotics, bio-inspired robotics, haptic wearable interfaces, and more (Rothstein et al., 2021). Sex robots belong to the category of social robots, encompassing various terms in English such as sex robots, AI-powered sex dolls, (hyper)realistic erotic dolls, and animated sex dolls. These technological advancements originated in Japan, a hub for innovation. The driving factors behind their development are the hectic pace of modern life, emphasis on career pursuits, and the scarcity of time for genuine human connections.

A general term *service robot,* as outlined in ISO 8373:2021, is a robot used for personal or professional tasks that are beneficial to humans or equipment. Personal use involves tasks like handling items, transportation, physical support, guidance, information, grooming, cooking, and cleaning, contributing to individuals' daily lives.

The term *social robot* is identified as a subtype of service robots. Social robots represent a burgeoning frontier in personal robotics, designed to interact independently with people across various applications. These robots employ natural and intuitive interactions, using human-like social signals. In essence, a social robot is a physical robot with the ability to engage in social interactions with individuals. In terms of *sex robots*, the term *humanoid robot* should also be introduced and is defined as follows: "robot (…) with body, head and limbs, looking and moving like a human" (Skubis, Wodarski, 2024).

Skubis (2021) underlines, that in light of the potential hazards present in the domains of robotics and electronics, the European Parliament introduced a resolution on 16th February 2017, containing recommendations to the EU Commission concerning civil law provisions pertaining to robotics. The stipulations outlined in this resolution bring attention to the imperative of updating European Union legislation with ethical principles. These ethical principles encompass the following considerations:

1. Benefit: robots ought to prioritize the best interests of humans.
2. Non-harm: robots must adhere to the principle of "first do no harm", ensuring they do not cause harm to humans.
3. Autonomy: robots should possess the capability to make informed decisions regarding the rules governing their interactions, free from coercion.
4. Fairness: the benefits arising from robotics, particularly the affordability of robots for home care and healthcare, should be distributed equitably.

Additionally, the document elucidates fundamental rights, precautionary measures, integration, liability, safety protocols, reversibility, privacy concerns, and the optimization of benefits while minimizing harm.

The European Commission has put forth three key legal initiatives concerning artificial intelligence (AI): the AI Act, which aims to establish a European regulatory framework for AI; rules addressing liability aspects of new technologies, including AI; and a revision of sectorial safety legislation such as the Machinery regulation. Despite these efforts, there exists a challenge in maintaining clear communication between researchers, policymakers, and the general public, as research and policy documents frequently employ divergent vocabularies, leading to potential misunderstandings. Bridging this gap in terminology is crucial for fostering effective collaboration and ensuring a shared understanding of AI-related initiatives and their implications (Estevez et al., 2022).

Robotics is an ever-evolving field that continues to expand as technology advances. The market of robotics and especially sex robot market evoke a lot of emotions and give rise to many concerns. As a result, new terminology has emerged to describe the latest innovations in

the field. In this article, we will discuss some of the new terminology in sex robotics and its significance.

3. Specialised Language and Language of Technology

The language is used to convey information in a concise and precise manner among professionals. The use of specialized languages ensures effective communication among experts in the field (Skubis, 2020).

As Arntz et al. (in Messina, 2015) state, the field of specialization denotes the specific domain to which a term belongs. This criterion holds significant importance when choosing relevant portions from databases, ensuring that only the terminology pertaining to a particular field is retrieved and displayed. According to Hoffmann (1985) a specialised language called also Language for Special Purposes (LSP) is a collection of language tools employed within a specific, restricted domain of communication to facilitate effective interaction among individuals involved in that particular field. Cabré (1999) states that a specialised language is a subcode of a general language. The scientist considers important aspects of the communicative context, such as the individuals engaged in communication, the surrounding circumstances, the objectives, and the intentions underlying the act of communication. These elements are crucial to consider when discussing the communicative situation:

We speak of special or specialized languages to refer to a set of subcodes (that partially overlap with the subcodes of the general language), each of which can be 'specifically' characterized by certain particulars such as subject field, type of in- terlocutors, situation, speakers' intentions, the context in which a communicative exchange occurs, the type of exchange etc. Situations in which special languages are used can be considered as 'marked' [...]. Special languages must take account of the elements that play a role in an act of communication: the participants, the communicative circumstances, and the purposes or intentions associated with the communication (Cabré, 1999).

Coeckelbergh (2015) presents different perspectives on the relationship between humans, language, technology, and the world. These viewpoints reflect varying descriptive and normative approaches, highlighting the mediating role of language as a form of "in-between" and environmental influence. The scientist distinguishes 3 types of relations:

1. The first one is language as a medium between humans and the world:
    a) Humans-language-world: language mediates our connection to the world, shaping our perception, interactions with others, and actions. It plays a hermeneutic role, influencing our understanding of reality. According to Heidegger, language precedes perception.

b) (Humans-language)-world: language is used but remains in the background. It is an implicit part of our conventional experience of the world, affecting our thinking and behavior without conscious notice.

c) Humans-(Language-world): shifting from a hermeneutic to an alterity relation: Language becomes an object within the world. In this perspective, opposed by Heidegger, language is seen as an agent or even an entity separate from humans. This experience can arise in postmodernist thinking, writing, or reading, where the text is perceived as having agency or an authorial presence.

In summary, these different perspectives highlight the diverse ways in which language, as a mediating factor, interacts with human perception, the world, and even technology.

2. The second relation is language as medium between humans and technology (and world):

a) Language as an unnoticed medium: language actively shapes our discourse about technology without our conscious awareness. Our understanding of technology is influenced by the language we use, although this influence remains hidden.

b) Awareness of language as milieu: recognizing language as a medium or environment allows for a more explicit, hermeneutic, and critical engagement with technology. Philosophy of technology should acknowledge this role of language to critically analyze its impact.

c) Language as an intermediary: understanding how language shapes our linguistic and material relationship with technology enables the study and influence of language as a medium between humans and technology. Philosophy of technology needs to include a philosophy of language, and ethical and political considerations regarding technology must also address language.

d) Language in relation to technology and the world: this viewpoint suggests that technology can have its own language or script, which should be studied. Alternatively, language itself can be seen as a technology that mediates our connection to the world. This perspective raises questions about whether language is merely a tool or also a medium that shapes the message.

The second type of relations emphasizes the significance of language as a mediating force between humans, technology, and the world. Awareness of language's role allows for critical analysis, ethical considerations, and the understanding of its influence on our interactions with technology.

3. The third type is called as "language and technology mediate our relation to the world":

a) (Humans-language-technology)-world: language and technology exert influence on our thoughts and expressions regarding the world, yet their embodied mediation often goes unnoticed. This mediation becomes evident when we delve into the

relationship between language and technology or encounter technologies that possess a communicative aspect.

b) Humans-(Language-technology-world): language and technology are regarded as integral components of the world, sometimes even assuming the role of alterity. Technologies can "speak" in a literal sense, such as robots engaging in communication, or metaphorically, where technology communicates through a distinct language. This perception encourages us to perceive the world through a different lens when exploring or experimenting with technology.

c) (Humans-language)-technology-world: language molds our association with the world as we engage with and encounter technology, yet its mediating role is often embodied and overlooked. Language shapes our instrumental perspective of technology, but employing alternative language allows for novel ways of relating to both technology and the world, leading to a transformed understanding of ourselves.

d) Humans-(Language-technology)-world: the language employed in the realm of technology mediates our connection to the world, and we can develop an awareness of this phenomenon. Technological language surpasses the boundaries of instrumental-technological communication, inviting diverse responses and interpretations. Additionally, language itself can be perceived as a technology and is frequently influenced by other technologies. Both language and technology extend beyond mere tools or media, shaping our actions and perceptions.

Summarising the third type of relations, it accentuates the intertwined roles of language and technology as mediators in our relationship with the world. They have a profound impact on our comprehension, actions, and self-perception, challenging conventional perspectives and fostering alternative approaches to technology and language.

4. Neologisms

Neologisms have been defined by various linguists and scholars in different ways. Newmark (1988) states that "neologisms can be defined as newly coined lexical units or existing lexical units that acquire a new sense". At the time of Newmark's appearance of the book "A Textbook of Translation" in 1988, the scientist cited a figure of 3000 new words emerging annually in each language. Currently, according to the statistics of the Global Language Monitor (GLM), only the English language noted the appearance of about 5366 words a year, however as the GLM indicates, not all of those words are worth to be codified in dictionaries.

The explanation of a neologism provided by the Cambridge Dictionary is as follows "a new word or phrase, or a new meaning for a word that already exists".

Crystal (in Nabila, Abdulrahman, 2021) claims that a neologism or coinage refers to the process of inventing new words that arise from evolving conditions in the world and find their way into everyday conversations with people. Bauer (2001) defines a neologism as "as a word which 'becomes part of the norm of the language'".

As Fang (2021) indicates, they can be described as simply "new" words, terms or phrases which have been recently created to refer to new terms or to reshape older notions in a new linguistic form. According to the scientist (ibid.), the following general criteria can be enumerated in reference to the concept of neologisms:

1) Neologisms are the words, which didn't occur before and are newly built and currently enter the common lexicons.

2) Neologisms are the words, which within a certain period of time, have been widely, accepted by people and still find their applications nowadays.

3) Neologisms are those old words, which carry the new meanings (Fang, 2021).

Comparing these definitions, it can be observed that they share the idea that neologisms are newly created words or expressions that are not yet fully established in a language's lexicon.

Yasin et al. (2010) claim that there are some fields where neologisms prevail and they distinguish six types of them: scientific, technological, political, pop-culture, imported, trademarks, nonce words, and inverted words.

Neologisms can be created in several ways, including borrowing from other languages, compounding existing words, or creating new words through derivation or conversion. Newmark (1988) proposes 12 types of neologisms: old words, old words with new senses, new coinages, derived words, abbreviations, collocations, eponyms, phrasal words, transferred words, acronyms, pseudo neologisms, internationalisms, while Algeo (2014) differentiates six types of creating new words: creating, borrowing, combining, shortening, blending and shifting which can be divided into subtypes. Below the proposed types by Newmark (1988) of creating new words are depicted:

1. New words: Old words with new senses are typically unrelated to new objects or processes, making them less likely to be technological terms. Translating neologisms is complex, and there is rarely a single correct translation. The expertise and cultural knowledge of the readership play a role in determining the most appropriate translation. The translation of a neologism depends on its future permanence and importance in the target language's culture.

2. New coinages: Most words are not completely new; they derive from morphemes or have phonaesthetic or synesthetic qualities. However, exceptions like 'quark' and 'byte' exist, which are coined words with phonaesthetic qualities. Nowadays, new coinages are often brand or trade names.

3. Derived words: Many neologisms are derived from ancient Greek and Latin morphemes, particularly for scientific and technological terms. Differentiating between serious derived neologisms and media-created neologisms is important.

4. Abbreviations: Abbreviations are common pseudo-neologisms, and unless they coincide with their equivalents in the target language, they should be written out in the translation.

5. Collocations: New collocations are common in social sciences and computer language. Computer terms usually have recognized translations, and if not, an added functional-descriptive term is used. The importance and cultural significance of the referent should be considered in translation.

6. Eponyms: Eponyms derived from proper names can be translated directly when they refer to a person. However, when they refer to ideas or qualities, additional information may be needed. Eponyms derived from objects are usually brand names and can only be transferred if equally well-known and accepted.

7. Phrasal words: Phrasal words in English are often converted verbs turned into nouns. Translating them requires using semantic equivalents, which are more economical but may fall between informal and colloquial register.

8. Transferred words: Newly transferred words retain only one sense of their foreign origin and are often media or product-related terms. They may be common to multiple languages due to cultural overlaps or media influence. Generic terms accompanied by specific details are used for translation.

9. Acronyms: Acronyms are used for brevity and prestige in non-literary texts. In scientific texts, they may become internationalisms. Acronyms can be standard equivalents or descriptive terms in translation, and they may differ between source and target languages.

10. Pseudo-neologisms: Pseudo-neologisms occur when a generic word represents a specific word. Translators should exercise caution when encountering such cases and provide accurate translations, such as translating "rapports (d'engrenage)" as "gear ratios" or "humerale" as "humeral artery".

When it comes to translation of neologisms into another language, the borrowings are often used. According to Daulton (2011) lexical borrowing involves the adoption of words or linguistic elements, such as "roots, affixes, sounds, collocations, and grammatical processes", from one language or dialect to another. The act of borrowing words from another language is motivated by the necessity to express a concept or describe an object that lacks an equivalent term in the borrower's native language (Holmes, 2013). The borrowed word is also known as a loanword. Many languages seamlessly integrate English terms, often adapting them to align with their own phonetic and spelling rules. This linguistic borrowing is not merely a pragmatic response to the need for new concepts or technologies but is also perceived as a symbol of sophistication and education (Skubis, 2015).

Fang (2021) explores various word formation processes used in English to create neologisms and the scientist distinguishes:

1. Compounding: Compounding is the process of combining multiple word elements to form new words. In English, compounds can be written with hyphens, as a single word, or with spaces. Examples of compounds include easy-listening, superhighway, and emotional quotient.

2. Shortening: Shortening involves creating new words by omitting part of an existing word. It encompasses various processes like acronym formation, clipping, blending, and backformation.

   a) Acronym: Acronyms are words formed by combining the initial letters of different words. They can be pronounced as individual letters (initialisms) or as complete words. For instance, BBS, CALL, and SARS are examples of acronyms.

   b) Clipping: Clipping entails removing a part of a word and using the remaining portion. This can occur at the beginning, end, or both ends of the word. Examples of clipped words include app (from application program) and bot (from robot).

   c) Blending: Blending combines clipping and combining simultaneously. It involves merging two or more-word forms while excluding part of one. Notable examples of blends are cobot (cooperative robot) and smist (smoke + mist).

3. Affixation: Affixation involves adding derivational affixes to base words to create new words. This process includes both prefixation (adding prefixes at the beginning) and suffixation (adding suffixes at the end). Common affixes in English include -er, -able, and -ism.

4. Conversion: Conversion is the process of transforming words from one grammatical class to another without altering their morphological structure. It is also referred to as functional shift. Noun-to-verb conversions are particularly common, as seen in examples like sample (n–v) and archive (n–v).

In the case of neologisms in technology, borrowing from other languages is a common method of creation (Crystal, 2006). New terms are being introduced into the vocabulary to explain emerging ideas and technologies, as well as their significance in our lives, while older words gradually fade away as their cultural importance diminishes. The lexicographers observe, due to the profound impact of digital technology on society, that science and technology serve as the primary generators of new words in recent years (McDonald, 2005).

In conclusion, neologisms in technology are an important aspect of the ever-evolving field of technology. They provide a way to communicate new developments and ideas, shape cultural attitudes towards new technologies, and often involve borrowing and repurposing existing words. As technology continues to evolve, we can expect to see the creation of many more neologisms in this field.

5. Methodology

The analytical part of this article is divided into two parts. The first one is meant to provide a linguistic analysis of three neologisms which appear on the sex (robot) market. The words that are going to be analysis are: *digisexuality, technosexuality and robosexuality* in terms of their structure, forms of spelling, adjective forms, their codification in dictionaries and definitions in five languages: English, German, French, Spanish and Polish. The primary source to check their codification are going to be dictionaries adequate for each language: Cambridge Dictionary for English, Duden for German; Larousse for French; Diccionario de la Real Academia Española for Spanish; Słownik Języka Polskiego PWN for Polish. If a definition cannot be found in the above-mentioned dictionaries, the research in other online dictionaries to find their definition is going to take place or the definitions proposed by scientists are going to be depicted. The linguistic formations, definitions, and potential implications of these concepts are examined to uncover their significance within the field of communication research.

The second part of the research aims to present the outcomes of the survey that was administered to a total of 134 students aged 20-24, consisting of 90 females and 44 males. The participants were asked a series of questions related to their knowledge and opinions on emerging sexual technologies, followed by multiple-choice and open-ended questions to gather their views in more depth. The questionnaire was meant to check whether the new generation, generation Z, is conscious of the new terminology on the sex robot market and whether they can provide the differences between three terms that sound quite similar.

6. Analysis of the term "digisexuality" in English, German, French, Spanish and Polish

The term *digisexuality* can be classified as a blend neologism. It is formed by combining the shortened form derived from the adjective *digital* functioning as a prefix *digi* in all five languages with the root *sexuality (EN), Sexualität (DE), sexualité (FR), sexualidad (ES), seksualność/seksualizm (PL).* It is worth noting that in Polish, there are two equivalents for *sexuality*: *seksualność* as a feminine noun and *seksualizm* as a masculine noun. In all other languages the root is a feminine noun (in English there is no division between genders).

This combination creates a new word that represents the concept of sexual attraction, orientation, or identity related to digital technologies, virtual experiences, or interactions with artificial intelligence and robotic devices.

Forms of spelling:

- English: Digisexuality.
- German: Digisexualität.
- French: Digisexualité.
- Spanish: Digisexualidad.
- Polish: Digiseksualność/Digiseksualizm.

Its adjective form is more often used than the noun. In English the adjective is *digisexual,* however in German, French, Spanish and Polish their form agrees with the gender as listed below:

- English: Digisexual (no gender agreement).
- German: Digisexuell (masculine/feminine).
- French: Digisexuel (masculine), digisexuelle (feminine).
- Spanish: Digisexual (masculine/feminine).
- Polish: Digiseksualny (masculine), digiseksualna (feminine).

The neologism *digisexuality* is a new term which is still not codified in German, French, Spanish and Polish. In English, its definition appears in Word Sense Dictionary: *digisexuality – (neologism) sexual attraction to sexbots or other technologically-enhanced sexual situations.* In Collins Dictionary there is the information that it is a new word suggestion, and its approval status is marked as pending, and it gives the following definition: *digisexual - someone who expresses their sexuality through technological devices.*

The concept of digisexuality is a recent development and lacks formal definition. The widely accepted description, proposed by Neil McArthur (2017, p. 335), characterizes digisexuality as the use of technology for engaging in sexual activities or relationships, including platforms like Skype, Tinder, Snapchat, Facebook, and others. According to McArthur, this implies that we are all digisexual to some degree, as these technologies provide intense and immersive sexual experiences without the need for a human partner.

Additionally, McArthur (ibid.) distinguishes between two waves of digisexuality. The first wave encompasses the sexual technologies mentioned earlier, which enable connections with current or potential partners. This wave has a broader interpretation. On the other hand, the second wave of digisexuality, as proposed by McArthur, refers specifically to individuals whose sexual identity is shaped by second-wave sexual technologies, carrying a narrower connotation.

From a linguistic perspective, we disagree with McArthur's definition that includes all internet applications, such as Skype, Twitter, Snapchat, Facebook, as part of digisexuality. It is evident that these applications can be used in various ways depending on the user's intentions, but their primary purpose is not solely for finding partners or engaging in romantic affairs, unlike dedicated dating apps.

The term digisexuality implies a digital aspect to our sexuality, indicating the pursuit of online sexual experiences through the internet. This may involve activities like watching videos, participating in webcam interactions, engaging in chats or phone calls (with or without video), visiting escort agency sites, exploring sex doll sites, or using dating portals. Tweeting on Twitter may revolve around politics, while Skype calls are often meant for maintaining contact with friends or family, similarly to Facebook and Messenger. A person who utilizes these communication forms may be digital in their interactions, but it does not automatically classify them as digisexual.

7. Analysis of the term "technosexuality" in English, German, French, Spanish and Polish

The term *technoexuality* can be classified as a blend neologism. Like the term *digisexuality*, it is formed by combining the shortened form of the adjective *digital – digi* in all five languages with the root *sexuality (EN), Sexualität (DE), sexualité (FR), sexualidad (ES), seksualność/seksualizm (PL).* Once again, it needs to be remembered that in Polish, there are two equivalents for *sexuality*: *seksualność* as a feminine noun and *seksualizm* as a masculine noun, however the second version is much less popular. In all other languages the root is a feminine noun (in English there is no division between genders).

In every one of the five languages, there exists a shortened version of the term *technology*. However, the abbreviated form in Spanish differs from the others, as it is spelled without the letter "h" - *tecno*. In the remaining four languages, the abbreviated form retains the "h" and is written as *techno*.

Technosexuality refers to the incorporation of technology into sexual experiences, relationships, and identities. It encompasses a wide range of practices, including virtual reality, sex toys, teledildonics, remote intimacy, and more. Individuals who identify as technosexuals embrace and explore the ways in which technology enhances their sexual and intimate encounters.

Forms of spelling:

- English: Technosexuality.
- German: Technosexualität.
- French: Technosexualité.
- Spanish: Tecnosexualidad.
- Polish: Technoseksualność/technoseksualizm.

Like in the case of the term *digisexuality*, the dominance of the adjective form of the noun *technosexuality,* i.e. *technosexual* is evident in online sources.

- English: Technosexual (no gender agreement).
- German: Technosexuell (masculine/feminine).
- French: Technosexuel (masculine), technosexuelle (feminine).
- Spanish: Tecnosexual (masculine/feminine).
- Polish: Technoseksualny (masculine), technoseksualna (feminine).

In all five languages, there exist adjectives derived from the noun *technosexuality*. In English *technosexual (EN),* in German, it is *technosexuell (DE).* In French, the corresponding terms are *technosexuel* for masculine nouns and *technosexuelle* for feminine nouns *(FR).* In Spanish, it is referred to as *technosexual (ES).* Polish employs two forms: *technoseksualny* for masculine nouns and *technoseksualna* for feminine nouns *(PL).* It is worth noting that Polish and French have distinctive forms of adjectives to account for masculine and feminine nouns. Furthermore, within this word family, there is a noun that describes a particular form of sexual intercourse: *technosex (EN), Technosex (DE), technosexe (FR), tecnosex (ES), technoseks (PL).*

The neologism *technosexuality* is a new term which is still not codified in English, German, French, Spanish and Polish. In English, a definition cannot be found in Cambridge Dictionary or other dictionaries, however its definition exists on Wikipedia. Wikipedia is not a scientific source but sometimes it is the only one that provides a desired definition:

Technosexuality is a word used to mean two things:

1. *Having a strong love of gadgets. This is a joining of the two words "technophile" and "metrosexuality". It was first used by Ricky Montalvo to describe someone who was in love with himself and his urbanlifestyle, as well as gadgets such as mobile phones, PDAs, computers, software, and the web.*
2. *A different word for robosexuality. This meaning of technosexuality is a join of "technophile" and "sexual".*

There is no definition of a noun *technosexuality* in dictionaries, whereas the definition of its adjective form *technosexual* can be found.

To those unfamiliar with the subject, the terms *digisexuality* and *technosexuality* may sound alike. Upon analyzing the names, one might assume they pertain to new technologies, yet distinguishing between them proves challenging due to their similar components – *digi* and *techno* – both relate to the digital and technological domains, giving them an analogous ring.

However, delving into online articles reveals that the noun *technosexuality* and the adjective *technosexual* actually refer to individuals who possess a fascination with gadgets, erotic toys, electronic devices, or robots. Some interpretations even classify it as a form of fetishism. As Montalvo states, a technosexual person is characterized as a "narcissistic being fascinated by computers". Interestingly, the term itself is not recent, originating in the 1970s to describe the sexual attraction some individuals feel towards machines, robots, and gadgets.

8. Analysis of the term "robosexuality" in English, German, French, Spanish and Polish

The expression appears to be a blend neologism formed by combining the shortened form of the adjective *robotic* or *robot* with the root *sexuality* in various languages. In the case of a compound *robosexuality,* there are two equivalents for *sexuality* in Polish language: *seksualność* as a feminine noun and *seksualizm* as a masculine noun, however the second version, a compound *roboseksualizm* is not so popular.

Robosexuality can be defined as a sexual attraction or orientation towards robots or artificial intelligence.

Forms of spelling:

- English: Robosexuality.
- German: Robosexualität.
- French: Robosexualité.
- Spanish: Robosexualidad.
- Polish: Roboseksualność.

In all five languages, there are adjectives derived from the noun *robosexuality*. The English term is *robosexual (EN),* German uses *robosexuell (DE),* French has *robosexuel* for masculine nouns and *robosexuelle* for feminine nouns *(FR),* Spanish uses *robosexual (ES),* and in Polish there are two options depending on the gender: *roboseksualny* for masculine nouns and *roboseksualna* for feminine nouns *(PL).*

- English: Robosexual (no gender agreement).
- German: Robosexuell (masculine/feminine).
- French: Robosexuel (masculine), robosexuelle (feminine).
- Spanish: Robosexual (masculine/feminine).
- Polish: Roboseksualny (masculine), roboseksualna (feminine).

Additionally, within this word family, there is a noun that describes a particular form of sexual intercourse: *robosex (EN), Robosex (DE), robosexe (FR), robosex (ES), roboseks (PL).*

Overall, *robosexuality* refers to the incorporation of robotic technology into sexual experiences, relationships, and identities. It suggests a concept where individuals explore and embrace the ways in which technology enhances their sexual encounters with robots or robotic devices.

There is no definition of a noun *robosexuality* in dictionaries in all five mentioned languages. If there exist any definition, it concerns its adjective form *robosexual* and it appears in the dictionaries created by society like Urban Dictionary or Wikipedia. The second one gives the explanation of *robosexual* as follows "a person who is sexually attracted to robots".

9. Outcomes of the survey

The purpose of the survey questions among students aged 20-24 is to gather information on their awareness, knowledge, and attitudes regarding emerging sexual technologies, such as "digisexuality", "technosexuality", and "robosexuality". These questions are designed to achieve several specific objectives:

1. Gender Distribution (Question 1):

   to capture the gender distribution of the surveyed population, which can help identify potential gender-related variations in responses to the subsequent questions.

2. Awareness of Emerging Sexual Technology Terms (Questions 2-4):

   to assess the extent to which students in this age group are familiar with terms like "digisexuality", "technosexuality", and "robosexuality".

3. Understanding of Terminology (Questions 2-4):

   to collect short definitions from participants who have heard of these terms, aiding in understanding their interpretations and the depth of their knowledge.

4. Differentiation Between Terms (Question 5):

   to determine if respondents can differentiate between the terms "digisexuality", "technosexuality", and "robosexuality", which helps gauge their comprehension of these concepts.

5. Comfort Discussing Sex Robots (Question 6):

   to evaluate the participants' comfort level in openly discussing the topic of sex robots, which provides a better understanding of the social acceptability and willingness to engage in conversations about this emerging technology.

134 students aged 20-24, consisting of 90 females and 44 males participated in the survey. The purpose of the questionnaire was to assess the awareness of the new generation, Generation Z, regarding the terminology used in the sex robot market and to determine if they could distinguish between three closely related terms.

The survey consisted of the following questions:

1. Indicate your gender: A) Female B) Male
2. Have you ever heard the term "digisexuality" or "digisexual" – Yes / No

   If yes, provide a short definition: …………………………………………………………….
3. Have you ever heard the term "technosexuality" or "technosexual" – Yes / No

   If yes, provide a short definition: …………………………………………………………
4. Have you ever heard the term "robosexuality" or "robosexual" – Yes / No

   If yes, provide a short definition: …………………………………………………………
5. Do you know the difference between those three above mentioned terms? Yes / No

   If yes, indicate the difference: …………………………………………………………
6. Are you comfortable discussing the topic of sex robots openly? Yes / No

The results can be summarized as follows:

Age: The participants' age range was 20-24 years.

Gender Distribution:

- Female: 90 (67%).
- Male: 44 (33%).

Awareness of Terms:

- Digisexuality: None of the participants had heard of this term.
- Technosexuality: None of the participants had heard of this term.
- Robosexuality: 18 participants were able to provide a correct definition with their own words.

Understanding of Terms:

Most participants (both female and male) stated they did not know the differences between the mentioned terms.

Comfort Discussing Sex Robots Openly:

- Female: 56 (62%) were comfortable, 34 (38%) were not comfortable.
- Male: 32 (73%) were comfortable, 12 (27%) were not comfortable.

In our study, we collected the following results from our participants: the age range of the participants fell between 20 and 24 years. Regarding the gender distribution of our participants, 90 were female, constituting 67% of the total, and 44 were male, making up 33% of the sample.

When it came to the awareness of specific terms related to sexual technologies, it was found that none of the participants had heard of the term "digisexuality" or "technosexuality". However, for the term "Robosexuality", 18 participants were able to provide their own accurate definitions – they were not familiar with the concept but they were able to divide the term into two words and guess the meaning. Guessing the meaning of two other terms "digisexuality" and "technosexuality" was not so easy because their meaning cannot be deciphered based on the words they are composed of.

Concerning the understanding of these terms, the majority of participants, both female and male, indicated that they did not possess a clear understanding of the differences between the terms. It was no surprise that students could not provide the differences between those three terms as they did not know the definitions of each of them.

Furthermore, we explored the participants' comfort levels when discussing sex robots openly. Among the female participants, 56 (62%) reported feeling comfortable engaging in such discussions, while 34 (38%) expressed discomfort. For the male participants, 32 (73%) reported being comfortable discussing sex robots openly, whereas 12 (27%) reported discomfort in doing so. These findings demonstrate the varying degrees of openness and familiarity with emerging sexual technologies within our sample group.

10. Conclusions

The terms *digisexuality, technosexuality* and *robosexuality* can be classified as blend neologisms in English, German, French, Spanish, and Polish, formed by combining the prefix *digi, techno* or *robo* with the root *sexuality* in each language. All those terms are still not codified in dictionaries, however the definitions of their adjective forms appear in English in dictionaries created by the society, because the adjectives are more commonly used than the nouns. The adjective forms demonstrate gender agreement in French and Polish.

All those three concepts seem similar and it might be difficult for a non-professionalist to show the differences between those expressions. In terms of definitions, *digisexuality* focuses on the use of technology for sexual experiences, *technosexuality* encompasses the incorporation of technology into sexual encounters, and *robosexuality* specifically refers to attraction or activities involving robots.

Linguistically, all three terms follow consistent patterns in their formation across English, German, French, Spanish, and Polish. It is worth noting that while *digisexuality* has been recognized and discussed to some extent, *technosexuality* and *robosexuality* may be less widely codified in dictionaries.

These comparative analyses demonstrate the nuances and similarities between these emerging concepts, providing their definitions and linguistic representations across five languages. Their definitions focus on the incorporation of technology into sexual experiences and relationships, encompassing diverse aspects of human-technology interactions.

When it comes to our survey, it aimed to assess the awareness, knowledge, and attitudes of students aged 20-24 toward emerging concepts connected with sexual technologies, namely "digisexuality", "technosexuality", and "robosexuality". The survey encompassed 134 participants, with 67% being females and 33% males.

The findings showed that none of the participants had prior knowledge of "digisexuality" or "technosexuality", but 18 participants could provide their own explanations for "robosexuality." Most participants, regardless of their gender, acknowledged a lack of comprehension regarding the distinctions between these terms, which was unsurprising considering their unfamiliarity with the definitions.

Additionally, there were gender-related variations in participants' comfort levels when discussing sex robots openly. 62% of females and 73% of male participants expressed comfort in such discussions. In contrast, 38% of females and 27% of males reported discomfort in engaging in such conversations. It should be underlined that this discrepancy can change with a bigger sample of participants and the equal number of both genders as in this survey took part 90 women and 44 men.

In conclusion, this survey offers valuable information about the awareness and comfort levels of Generation Z students concerning emerging sexual technologies. It emphasizes the significance of education and open dialogue on these topics, particularly in view of the evident disparities in familiarity and comfort within our sample group.

Understanding the new terminology is crucial for researchers and practitioners working in the fields of communication, technology, and human sexuality in the 21st century. As these concepts continue to evolve, further research is encouraged to deepen our understanding of their impact on human experiences and relationships.

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