Cognition, Communication, Discourse, 2026, 32, 57-75
http://sites.google.com/site/cognitiondiscourse/home

https://doi.org/10.26565/2218-2926-2026-32-04
Received April 7, 2026; revised May 15, 2026;
accepted May 22, 2026; published online May 31, 2026

MULTIMODAL COMPOSITION OF INFOGRAPHICS EMBEDDED IN ONLINE NEWS DISCOURSE

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Article citation: Hetman, V. (2026). Multimodal composition of infographics embedded in online news discourse. *Cognition, Communication, Discourse, 32,*57-75. https://doi.org/10.26565/2218-2926-2026-32-04

Abstract
The article investigates the multimodal arrangement of infographics embedded in online news discourse as one of the most effective means of representing complex information in the contemporary digital communication environment. The study is based on the theoretical framework of multimodality and multimodal discourse analysis, which regard meaning as a product of interaction between multiple semiotic resources. Within the context of online news communication, infographic objects are treated as integral multimodal units combining verbal, visual, typographic, spatial, numerical, and chromatic semiotic resources into a coherent communicative whole. As to the degree of semantic autonomy of infographic objects in relation to the verbal news text, the online news infographics may be classified into fully autonomous, partially dependent, and fully dependent on the news text itself. The article also highlights the principle models of constructing infographic objects and establishes that the most frequent compositional models include cartographic-based constructions and spatial-organizational structures with vertical or horizontal classification of information. The verbal mode primarily performs explanatory, nominative, and anchoring functions; visual, diagrammatic, and spatial elements structure information and guide interpretation. Typographic and color resources contribute to emphasis, hierarchy, and salience. Results reveal that infographics function as highly cohesive multimodal units whose communicative efficiency is ensured through the synergistic interaction of heterogeneous semiotic resources. Their composition is strategically organized to optimize perception, compress information, and strengthen the pragmatic impact of news communication.

Keywords: *online news discourse, multimodality, infographic, multimodal composition, semiotic resource, meaning-making, cross-modal cohesion.*

1. Introduction

The rapid advancement of digital communication has significantly reshaped communicative practices, replacing predominantly language-centered forms with complex semiotic environments where meaning is constructed through the interaction of multiple modes. Multimodality has thus emerged as a central concept in linguistics, media studies, and discourse analysis, addressing how different semiotic resources interact in the production and interpretation of meaning. Scholars emphasize that communication has never been purely linguistic; rather, language has always functioned alongside visual, auditory, and spatial elements. These modes do not function independently, but form a unified communicative system in which meaning emerges through their interplay.

Multimodality is generally understood as the integration of various semiotic resources within a single communicative act, employed to produce a coherent meaning in the process of social semiosis (Bezemer & Jewitt, 2018; Krysanova, 2022; Serafini, 2015; Shevchenko, 2022).

From a broad perspective, multimodality refers to the co-presence of multiple modes in communication, the interaction of semiotic resources, and the construction of meaning across modes (Cheema et al., 2023; Stöckl, Caple & Pflaeging, 2020; Tseng et al., 2021; Wildfeuer et al., 2020; Yefymenko, 2021). According to G. Kress and T.van Leeuwen three key premises of multimodality can be identified. First, meaning is constructed through a variety of semiotic resources, each characterized by its own affordances and constraints. Second, the process of meaning-making entails the integration of these resources into coherent multimodal configurations. Third, a comprehensive analysis of meaning requires attention to the full range of semiotic resources that collectively contribute to the formation of a unified communicative whole (Kress & Leeuwen, 2001).

Theoretical foundations of multimodality have been significantly shaped by the works of Gunther Kress and Theo van Leeuwen, who approach multimodality from a social semiotic perspective. They argue that modes are socially and culturally shaped resources, each possessing specific affordances, particular potentials and limitations to express meaning. From this point of view, communication is not simply the transmission of information, but the design of semiotic resources within a given social context (Kress & Leeuwen, 2021).

C. Jewitt also emphasizes the importance of examining how different modes interact within specific contexts and practices, suggesting that meaning is always distributed across a multimodal ensemble rather than located in a single mode (Jewitt, 2009).

A complementary dimension is introduced by Ch.Forceville, who focuses on the role of multimodality in rhetoric and persuasion. In this sense, multimodality becomes a key mechanism for shaping interpretation, influencing perception, and constructing persuasive messages, especially in media and advertising discourse (Forceville, 2020).

A more structural perspective is offered by J.Bateman, who emphasizes that multimodal texts are not arbitrary combinations of elements, but carefully organized systems. He draws attention to the architecture of multimodal documents, where layout, typography, and visual design contribute to the coherence and functionality of communication. This approach is particularly important for analyzing complex digital texts, where structure plays a crucial role in guiding interpretation (Bateman, 2014; Bateman & Wildfeuer, 2014).

Therefore, it might be stated that multimodality fundamentally reshapes our understanding of communication. It shifts the analytical focus from language as an isolated system to communication as an integrated semiotic process.

This shift has greatly influenced all kinds of communication including the public one. News as one of the most influential form of public communication is no longer confined to verbal reporting alone, but increasingly incorporates visual, audiovisual, interactive, and hypertextual resources (Kenneth, 2024). The internet remains the dominant medium of news dissemination, and its technological affordances enable the presenting of news information in a multimodal form, which makes the transmission of information more efficient, continuous, and dynamic.

This study ***aims*** to identify and classify the principal models of multimodal composition of infographic objects embedded in online news discourse, as well as to determine how verbal and non-verbal semiotic resources interact to ensure effective, coherent, and cognitively accessible representation of news information.

The main ***objectives*** of this research are:

1) to outline the theoretical foundations of multimodality and multimodal discourse analysis as applied to contemporary media communication;

2) to examine the role of infographics as integral multimodal components of online news discourse;

3) to identify the main semiotic resources involved in the construction of infographic objects, including verbal, visual, typographic, spatial, numerical, and color ones;

4) to analyze the structural and compositional organization of infographic objects embedded in online news reports;

5) to classify infographic objects according to the degree of their semantic dependence on the verbal news text;

6) to determine the principal models and strategies of multimodal composition used in contemporary online news infographics;

7) to reveal the mechanisms of cross-modal cohesion that ensure the integrity and communicative effectiveness of infographic-based news representation.

The ***subject-matter*** of this study is the multimodal composition of infographic objects in online news discourse; the interaction of verbal and non-verbal semiotic resources involved in the construction, organization, and interpretation of infographic meaning; the combinability of different modes realized through cross-modal cohesive ties.

The ***material*** comprises online news texts published by the British corporation BBC and the American cable news network CNN between 2023 and 2026. The corpus includes the top news posted on the main pages of both platforms.

2. Methods

Here in this research the multimodal discourse analysis (MDA) is applied to explore the multimodal arrangement of news infographics.

Multimodal discourse analysis can be defined as an approach to discourse that investigates how meaning is created through the interaction of multiple semiotic modes within a communicative event or text. Unlike traditional linguistic approaches, which tend to privilege verbal language as the primary carrier of meaning, MDA assumes that meaning is distributed across a range of semiotic resources and cannot be fully understood if only one mode is analyzed in isolation (O'Halloran, 2011). The central premise of MDA is that these modes are not supplementary to language, but are integral to the communicative process. Each mode contributes to meaning-making in a distinct yet interrelated way, and the interpretation of discourse depends on the way these resources are orchestrated into a coherent communicative whole (Norris, 2004).

At its core, multimodal discourse analysis is concerned with how meaning is created through the interaction of different modes in discourse.

The relevance of multimodal discourse analysis is particularly evident in contemporary media discourse, especially in online news communication. Digital news texts are rarely monomodal. They typically combine headlines, subheadings, written reports, photographs, videos, infographics, hyperlinks, captions, interactive elements, and typographic hierarchies into a single communicative formation. In such contexts, meaning is not conveyed linearly, but distributed across different semiotic layers, each of which contributes to the overall interpretive and pragmatic effect of the text. A photograph may provide emotional immediacy or evidential value, typography may establish informational hierarchy, layout may guide reading paths, and embedded video may intensify narrative engagement or authenticity. Consequently, multimodal discourse analysis provides a particularly effective methodological framework for examining how such elements function together in the construction of contemporary media meanings.

3. Findings

A key prerequisite for the successful communication of intended information to potential readers is its effective presentation within the contemporary information and communication environment. The way a message is organized and represented largely determines the degree of its comprehensibility, its pragmatic impact on the audience, and, ultimately, the breadth of that audience.

The dominant mode of presenting news content on online news platforms remains the verbal text, as it is exactly the verbal framing that enables the core function of news discourse to be realized most fully, namely, the provision of timely and comprehensive information about events deemed relevant and newsworthy.

At the same time, even when a news item appears to consist exclusively of verbal material, such a text may still be regarded as multimodal – or, more precisely, conventionally multimodal – since it incorporates a wide range of non-verbal semiotic resources, including numerals, punctuation marks, diacritical signs, mathematical symbols, and typographic markers. In addition, the graphemic representation of lexical units in news discourse is shaped by variations in font size, typeface, style, and color, all of which further attest to the multimodal character of news texts.

More importantly, in present-day communicative conditions, the effective representation of news information almost invariably involves the incorporation of illustrative materials, such as photographs, infographics, and video content.

It should also be mentioned that all the structural components of a news article (text, video, images, infographics) share a common thematic focus; however, each of them foregrounds distinct aspects within that theme to ensure news coherence and smooth flow of information representation. Moreover, this enables users to engage with the material through the mode that best suits their information needs whether by watching a video or reading a map chart. At the same time, it is important to note that none of these components is monomodal; rather, each constitutes a combination of interrelated semiotic modes. It is precisely this synergy of verbal and non-verbal elements that gives rise to a diverse multimodal product capable of ensuring a comprehensive and effective representation of information.

Against this background, the present study seeks to examine the specific features of arrangement of infographic objects embedded in the main body of online news reports since infographics have become an integral component of contemporary news discourse.

All the infographic resources used in an online news discourse may be classified according to the type of information they represent and the communicative function they perform. The most commonly employed types of news infographics include map charts, diagrams, graphs, tables, and timelines which might be further categorized as explanatory, statistical, chronological, spatial, comparative, hierarchical, and interactive multimodal formations.

The main communicative functions of online news infographics are as follows: to facilitate and simplify the perception of large-scale information flows by potential users; to compress large amounts of data in a visual form; to increase the effectiveness of information presentation enabling potential users to obtain the maximum amount of information within a minimal period of time; to help materialize and conceptualize the information enhancing its perceptive dimension (Gurchiani, 2015; Lee & Kim, 2016; Smiciklas, 2012).

4. Discussion

According to the nature of relationship between an infographic object itself and the news text which includes this infographic resource, it was suggested to classify infographic objects into:

1. ***Fully autonomous***, i.e. infographics serves as a coherent and self-contained text whose semantics can be easily understood without reading the entire news article, provided the broader context of the event is known;
2. ***Partially dependent***, i.e. the sense of infographics can be perceived without reading the entire news article, but the comprehension would be much better if the reader is familiar with the main content of the news;
3. ***Fully dependent***, i.e. the essence of infographics can't be interpreted without prior knowledge of the information presented in the news article.

Following examples demonstrate the aforementioned statements.

The map chart in Figure 1 presents information about events of the russia–Ukraine war and includes such components as 1) a headline *Russia carried out deadly attacks across Ukraine on Thursday*, highlighted in a large bold font; 2) a verbal informational message giving the background to the visual resource; 3) a map of Ukraine with marked locations of russian attacks and occupied territories; 4) key Ukrainian city names displayed in a bold font reflecting their real geographical location; 5) short verbal messages of an explanatory character that are overlaid on the map and contain key lexical units *attacks*, *strikes*, *shelling, casualties*, and *injured people*; 6) factual data (date, sources, graphic author), presented in a smaller, lighter font indicating its supplementary nature.

The presence of multiple heterogeneous components makes this multimodal text self-sufficient and capable of functioning independently as a complete informational unit. According to the classification of multimodal text construction strategies proposed by Larysa Makaruk, this example demonstrates a strategy of full interaction between verbal and visual components implemented through the tactic of interdependence (Makaruk, 2019).

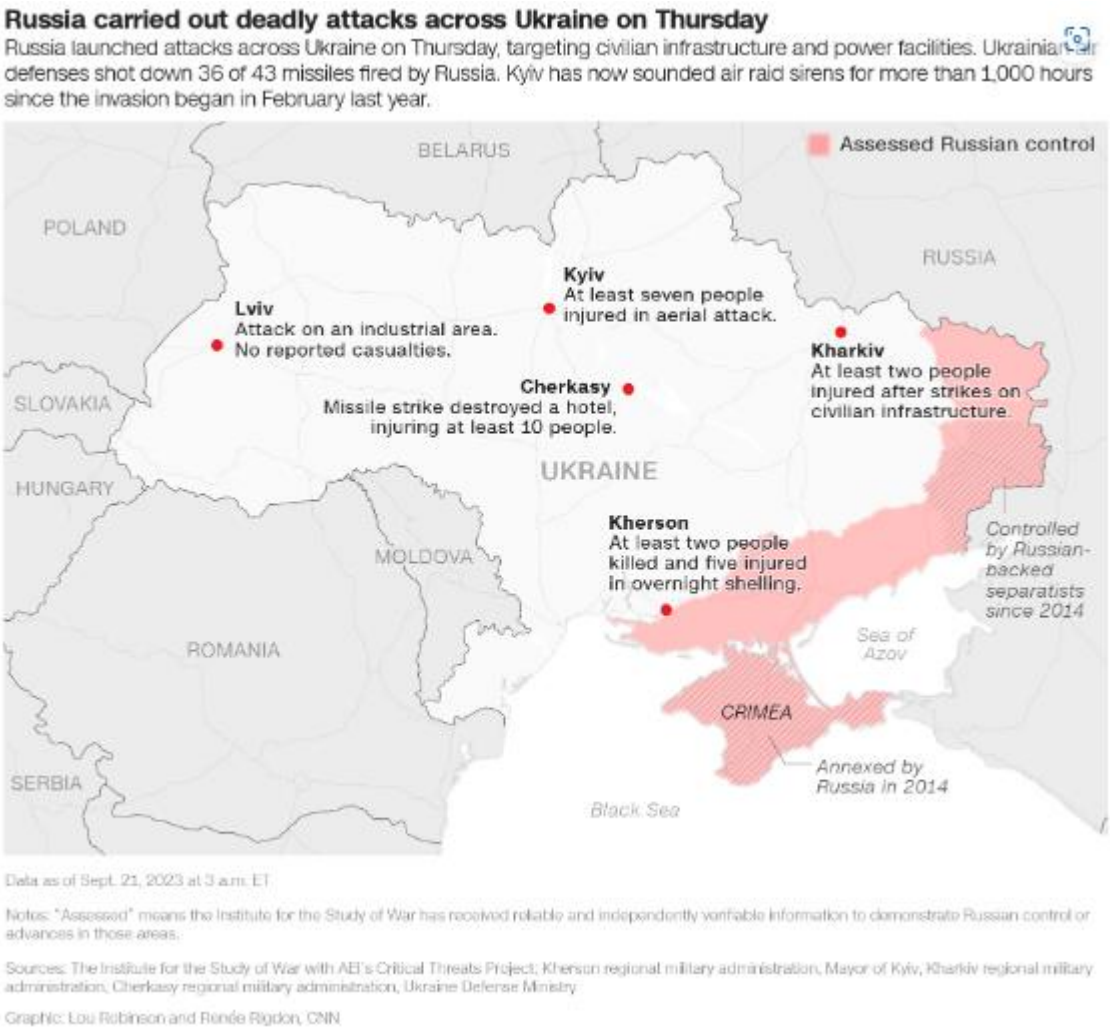

Figure 1. Russia carried out deadly attacks across Ukraine on Thursday.
https://edition.cnn.com/europe/live-news/russia-ukraine-war-news-09-21-23/index.html

The map chart in Figure 2 can also be considered fully independent. Its main structural components include a title, a concise explanatory sentence, containing all the necessary factual details (magnitude, location, time and date of occurrence), four adjectives indicating earthquake intensity, and place

names which provide the geographical reference that help orient the reader and connect the seismic event to familiar urban centers.

A particularly significant multimodal feature is the use of color-coded intensity zones, which visually represent the varying levels of seismic impact. The color here carries the dominant semantic load, classifying shake intensity and allowing the viewer to immediately identify the areas affected.

This map chart also incorporates an inset locator map in the upper-left corner, which situates Morocco within a broader regional and continental context. This smaller map performs an important orientation function, especially for international audiences who may not immediately recognize Morocco's position. It adds an additional cartographic layer to the infographic and contributes to its overall multimodal coherence by linking local and global scales of interpretation.

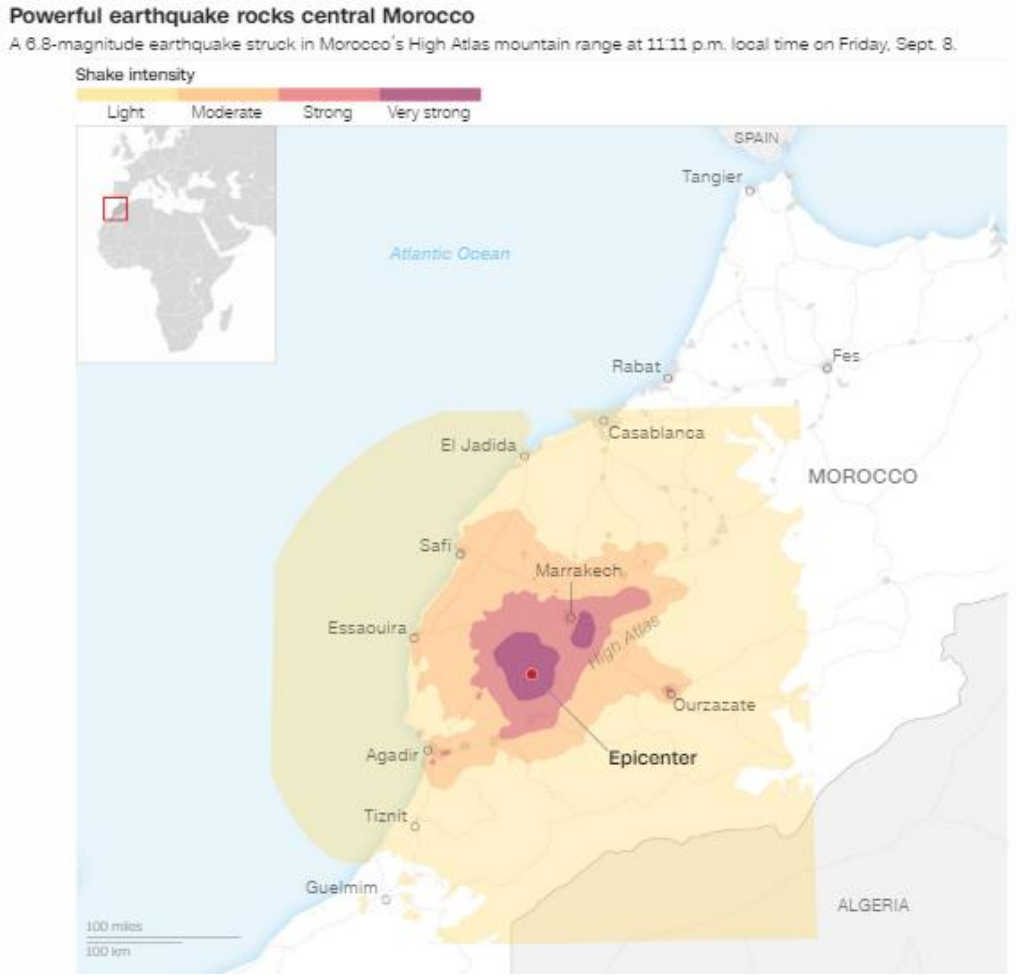

Figure 2. Powerful earthquake rocks central Morocco.
https://edition.cnn.com/2023/09/10/africa/morocco-earthquake-day-two-intl-hnk/index.html

Figure 3 depicts a complete informational message composed of a concise verbal narrative, anchored by the headline, a short paragraph beneath the headline which provides contextual background, introduces key actors (The USA, russia, Venezuela) and explains the circumstances surrounding the tanker's interception. Additional verbal elements appear in annotation boxes (brief explanatory sentences) distributed across the map, each containing dates and brief descriptions of specific events. These textual components construct a chronological narrative (timeline), guiding the viewer through the sequence of events.

At the visual level, the dominant element is a world map depicted in the form of a simplified and stylized map, emphasizing major regions, thereby foregrounding the geopolitical scope of the

event. The use of a map situates the narrative in a global spatial framework, allowing the viewer to understand what happened and where it occurred. Orange trajectory line and arrows indicate the movement of an oil tanker from point to point across the Atlantic Ocean. In this context, it was essential to visually delineate the route in order to ensure its precise interpretation. The line transforms abstract information about movement into a concrete, traceable path and visually encodes direction, distance, and progression, effectively replacing lengthy textual explanations.

The typographic mode contributes to the hierarchy and clarity of information. The headline is prominently displayed in larger, bold font, signaling its importance. Core lexical items within the annotation boxes *Bella 1* and *Marinera* are highlighted with different shades of a red drawing attention to significant details. Smaller font sizes are used for explanatory texts, maintaining readability while preventing visual overload.

Color here also plays a meaningful semiotic role. The contrast between the neutral tones of the map (light blue and grey) and the bright orange route line creates visual salience, ensuring that the trajectory of the tanker is the focal point of the infographic. This chromatic contrast guides attention and supports the viewer in quickly identifying the most important informational elements.

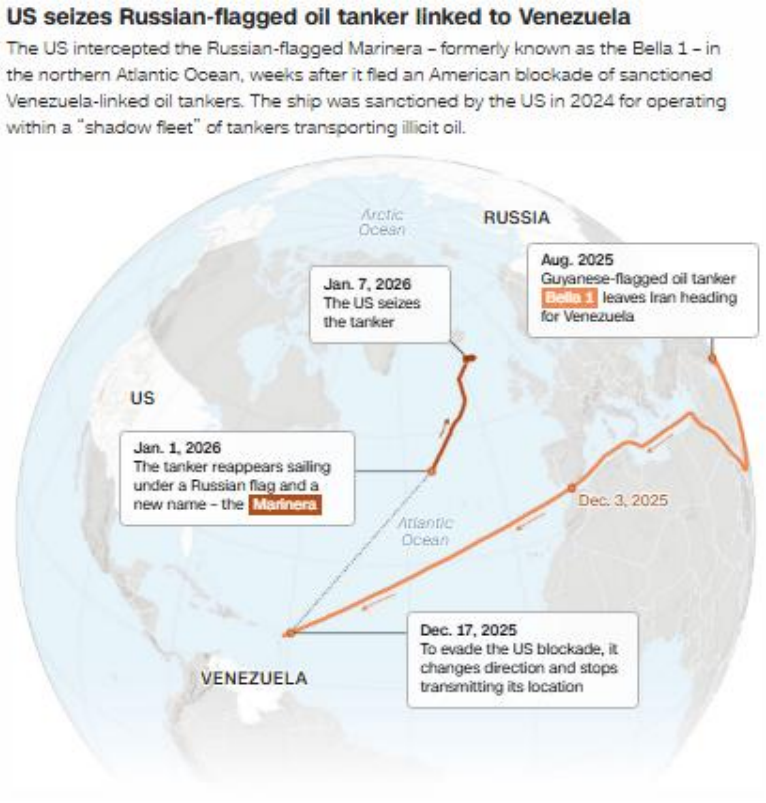

Figure 3. US seizes Russian-flagged oil tanker linked to Venezuela.
https://edition.cnn.com/2026/01/10/politics/a-painted-flag-a-russian-bluff-and-an-18-day-chase-across-the-atlantic

Figure 4 illustrates the classification of crude oil according to its physical and chemical properties, as well as the relationship between different oil types and the petroleum products derived from them.

At the verbal level, the infographic contains a clear headline, which immediately establishes the thematic frame of the visual scheme. A short explanatory text beneath the title introduces the key informational focus. Additional verbal labels throughout the image identify the main categories and outputs, such as *light, heavy, gasoline, kerosene, diesel fuel, jet fuel, butane, paraffin wax, lubricating oil, asphalt and tar.* These lexical units anchor the meaning of the visual elements and prevent ambiguity in interpretation.

At the visual level, the infographic relies heavily on illustrative representation. The central image depicts crude oil as a flowing substance that changes in color, viscosity, and texture from light golden tones to dark brown and nearly black. This gradual visual transformation helps the viewer intuitively grasp the distinction between lighter and heavier crude oil. The materiality of oil is conveyed iconically: light crude is shown as more transparent and fluid, while heavy crude appears thicker, denser, and more tar-like. This visual contrast makes the scientific classification immediately accessible even without extensive textual explanation.

The image also incorporates symbolic visual elements in the form of small icons representing petroleum products (a car, airplane, fuel container, gas cylinder, and road construction vehicle). These icons perform an explanatory and referential function by linking crude oil types to their common end uses. Therefore, this infographic does not merely classify oil, but also contextualizes its practical significance in everyday and industrial life.

From a spatial and compositional perspective, this infographic is organized in a left-to-right and top-to-bottom informational trajectory. This directional layout creates a strong sense of process and transformation, even though the image is static. The positioning of labels and icons reinforces this reading path and contributes to the overall coherence of the composition.

Also this multimodal infographic contains the embedded diagram in the upper-left section. This smaller chart classifies crude oil according to two intersecting parameters: heavy/light and sweet/sour. Here, meaning is created through a combination of verbal terminology, geometric structure, orientation, and color-coded axes.

The typographic mode is instantiated via large, bold letters of the headline and key categories *Light* and *Heavy*, establishing hierarchy and drawing attention to the most important conceptual oppositions. Smaller explanatory captions provide supporting details without overloading the viewer.

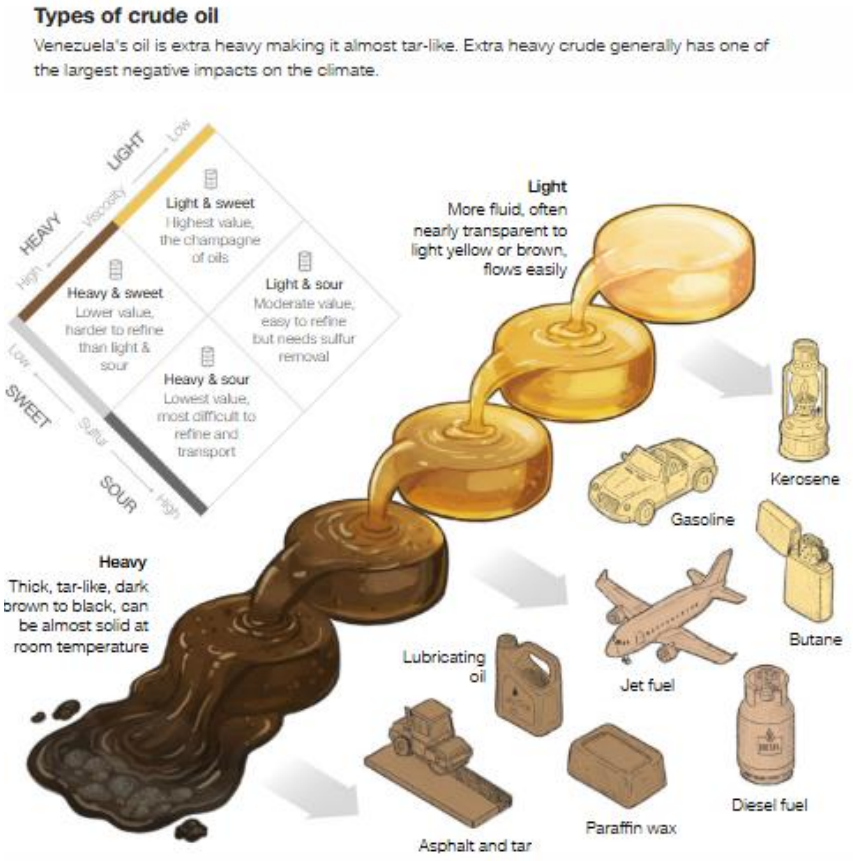

Figure 4. Types of crude oil.
https://edition.cnn.com/2026/01/07/climate/venezuela-oil-dirty-emissions-methane

Thus, the infographic objects of the first group can be perceived as distinct and self-contained units within news discourse capable of conveying detailed information without reliance on an extended textual canvas. Due to integration of verbal and non-verbal components a multimodal coherent whole is created possessing both cognitive efficiency and interpretive depth.

The second group – partially dependent infographic multimodal texts – is considered to be the most numerous in news discourse. The main difference from the first group lies in the usage of explanatory texts beneath the title – the infographic of the second group has less textual support thus making this type of infographic objects more dependent on the whole text of the news article.

In Figure 5 the core element is a cartographic image. Maps frequently appear in news infographics due to their effectiveness in representing current top news information. The map in figure 5 functions as the central cartographic mode. It outlines the territory of Ukraine and its neighboring states, allowing the viewer to perceive the war spatially rather than only narratively. Through cartographic simplification, the infographic reduces a highly complex military situation into a legible territorial scheme. In doing so, it transforms military and political situation into a visual representation of space, borders, and territorial occupation.

The verbiage of this multimodal infographic includes the headline which signals the geopolitical focus of the visual; verbal identification of countries and cities, and verbal explanations to the color-coded contour lines delineating territorial control in the context of the war in Ukraine.

The color coding operates as the primary resource for distinguishing categories of territorial control: red indicates areas under russian military control, purple marks areas held or regained by Ukraine, black line encircles the annexed Crimea. These chromatic distinctions enable the viewer to quickly decode the military situation without needing extensive textual explanation. In this sense, color functions as a crucial semiotic and classificatory device.

Figure 5. Areas of Russian military control in Ukraine.
https://www.bbc.com/news/world-europe-67095103

The infographic also incorporates the small locator globe in the upper-right corner, which situates Ukraine within a broader world context and is especially useful for international audiences.

From the point of view of typography, large, bolded letters are used for the title and country names, while smaller font size identify cities and verbal explanations to the color codes which helps the viewer distinguish between macro-level geopolitical entities and more localized reference points.

Figure 6 portraits a multimodal cartographic data infographic that communicates information about the distribution, type, and scale of major power plants in Iran.

Verbally the infographic is framed by the headline; additional explanatory text beneath the title specifies the categories of energy production represented in the map (hydro, gas, oil, nuclear). These verbal elements perform a crucial anchoring function: they define the scope of the infographic and guide the viewer's interpretation of the symbols and colors that appear on the map.

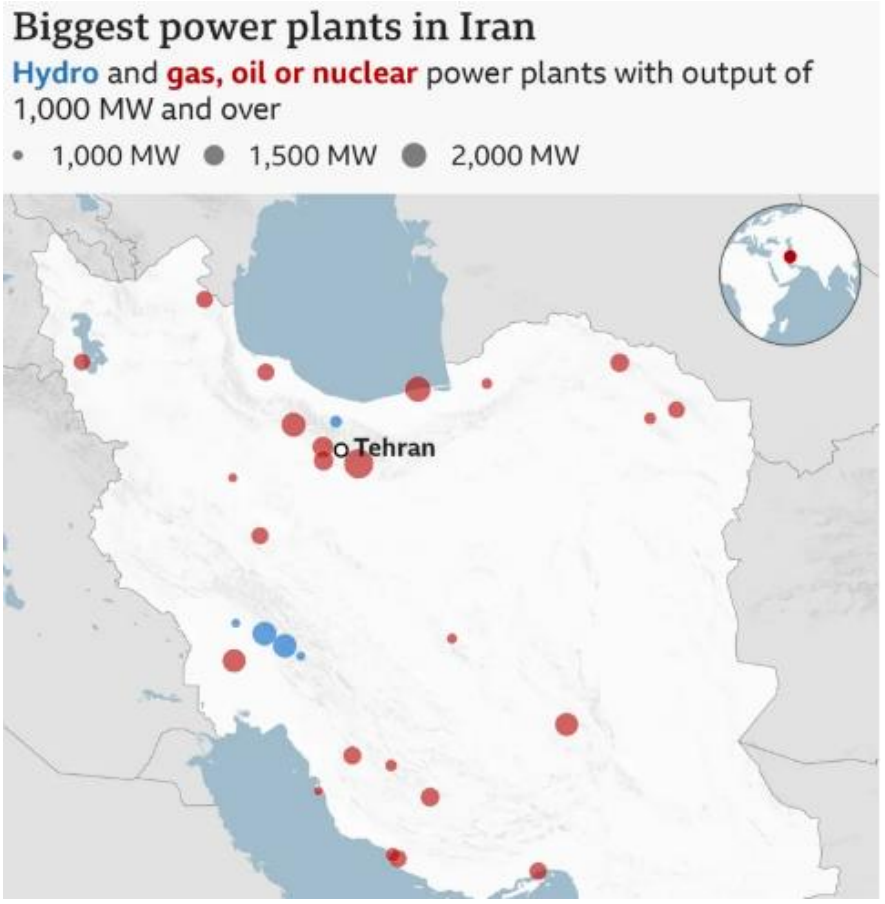

Figure 6. Biggest power plants in Iran.
https://www.bbc.com/news/articles/c4g0pnnj8xyo

The central semiotic resource is the map of Iran which situates the energy infrastructure spatially. This spatial dimension is particularly essential because it transforms abstract statistical information into a territorial and geopolitical pattern.

A key multimodal feature of the image is the use of colored circular markers, which simultaneously encode type and capacity of the power plants. Color functions as a classificatory device: blue markers indicate hydroelectric plants, while red markers represent gas, oil, or nuclear power plants. Marker size, in turn, signifies the output capacity of each facility, with progressively larger circles corresponding to 1000 MW, 1500 MW, and 2000 MW. In this way, the infographic combines chromatic coding and scalar symbolism to communicate two layers of information at once.

This dual coding allows the viewer to identify where major power plants are located, what type they are and how large they are in terms of output.

The image also includes a small locator globe in the upper-right corner, which situates Iran within a broader global context.

The typographic mode plays an important role in organizing informational hierarchy. The title is presented in a large, bold font, establishing its prominence, the explanatory text is displayed in a smaller font size with different colors that mirror the color coding used in the map. This is a particularly effective multimodal strategy, as it creates immediate cohesion between the verbal text and the visual symbols.

Figure 7 demonstrates the spatial distribution of deforestation in Pará State, Brazil. It is a satellite-based cartographic infographic which provides a realistic representation of the territory, creates a sense of immediacy and authenticity, visually evokes the actual physical landscape rather than a purely abstract map.

Color here functions as a highly salient semiotic device. Bright orange overlays mark the areas affected by deforestation. The contrast between the dark green and black tones of the forested landscape and the vivid orange patches allows the viewer to immediately distinguish between preserved and deforested areas.

Verbal labels include the headline, the explanatory wording for the orange color used throughout the map and names of geographical locations that orient the viewer within the represented space.

Figure 7. Deforestation in Para 2019 to 2022.
https://www.bbc.com/news/world-latin-america-66435166

It should also be underscored that this infographic transforms deforestation from an abstract ecological issue into a palpable and measurable phenomenon. It therefore performs not only an informative function, but also a potentially persuasive one, as the striking visual contrast between forested and affected areas may intensify the viewer's awareness of environmental loss. This infographic as well as the ones depicted in figures 5 and 6 illustrate the use of the localization strategy for representing information.

The infographic in figure 8 exemplifies a strategy of immersion into a real-life context, aiming to maximally "transport" the reader into real-world circumstances.

The dominant semiotic resource here is the photograph, which functions as an evidential and documentary mode. The image depicts the consequences of the Al-Ahli hospital strike in Gaza: a damaged outdoor area containing debris, destroyed vehicles, and scattered objects, all of which visually communicate the aftermath of a violent event. As a photographic representation, the image carries a strong sense of realism and immediacy, reinforcing the authoritative value of the report. In news discourse, such imagery often serves as a form of visual witnessing, providing viewers with the "direct access" to the material consequences of the event.

A particularly important multimodal feature of this image is the use of graphic annotation, namely the red circles and red caption boxes. These elements perform a strong interpretive function. Rather than leaving the viewer to independently scan the image for relevant evidence, the annotation explicitly marks and isolates the features that are considered semantically salient. The color places a significant role in this process. The bright red used for the circles and text boxes sharply contrasts with the muted grey, brown, and green colors of the photograph, immediately drawing the viewer's attention to the highlighted areas. Red also carries strong connotative associations with urgency, danger, violence, and alertness, which amplifies the dramatic and evidential force of the image. Thus, color here functions both pragmatically and semiotically, intensifying viewer engagement and structuring the reading path.

Figure 8. Aftermath of Al Ahli hospital blast.
https://www.bbc.com/news/world-middle-east-67144061

The typographic mode also contributes to meaning-making. The verbal labels are presented in bold white font against red rectangular backgrounds, ensuring high visibility and readability. This typographic choice reinforces informational hierarchy and also aligns the image with the familiar mode of explanatory news graphics, where text is embedded directly into the image to facilitate rapid comprehension.

The multimodal visual in figure 9 features a compressive strategy of information representation, where large amounts of information are conveyed through a reduced number of verbal and visual means.

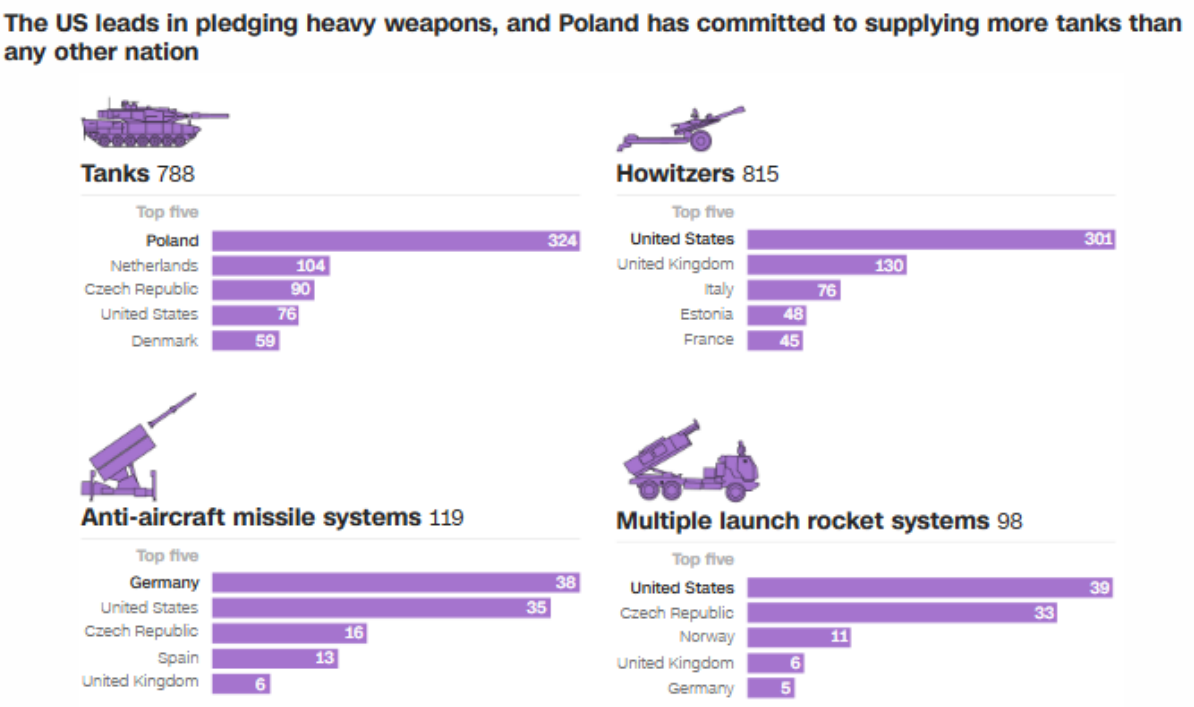

Figure 9. Aid to Ukraine.
https://edition.cnn.com/2023/10/05/world/ukraine-money-military-aid-intl-dg/index.html

The verbal headline to this statistical infographic, which tells about military aid, gives the background information guiding the reader toward a particular understanding of the data provided. Other verbal elements include category titles (Tanks, Howitzers, Anti-aircraft missile systems, Multiple launch rocket systems) and country names listed within each category. These verbal nominations provide categorization and referential clarity, ensuring that the numerical data is properly contextualized. The visual representation of the abovementioned verbal labels is provided by the iconographic elements – simplified illustrations of those tanks, howitzers, missile systems, and rocket launchers. These icons serve as visual signifiers of each weapons category and aid immediate recognition of the stated objects.

The numerical mode plays a central role in meaning-making. Exact figures and country-specific quantities are displayed alongside the visual elements. These numbers convey the scale of military contributions and enable comparison between countries. The integration of numerical data with visual representation enhances both accuracy and readability.

The use of bar charts also adds significant sense to the meaning-making process of the described infographic. Horizontal bars of varying lengths visually encode the quantities associated with each country. This allows the viewer to quickly compare contributions without relying solely on numerical interpretation. The bars transform abstract numbers into visually measurable differences, supporting rapid cognitive processing and comparative perspective.

The color here is relatively uniform – purple for both bars and icons – and functions primarily to enhance visual salience and consistency, rather than to differentiate categories.

From the perspective of spatial organization, this infographic is structured into four distinct sections, each corresponding to a category of weapons. This modular layout allows the viewer to process each category independently while still perceiving the infographic as a unified whole. Within each section, the hierarchical arrangement – from headline figure to top five contributors – guides the reading path from general to specific information.

The typographic mode further supports this hierarchy. Larger, bold text is used for category titles and total figures, while smaller fonts present country names and concrete numbers. This

differentiation helps organize information into layers of importance and facilitates efficient navigation of the infographic.

The infographic in Figure 10 demonstrates the strategy of schematic information representation.

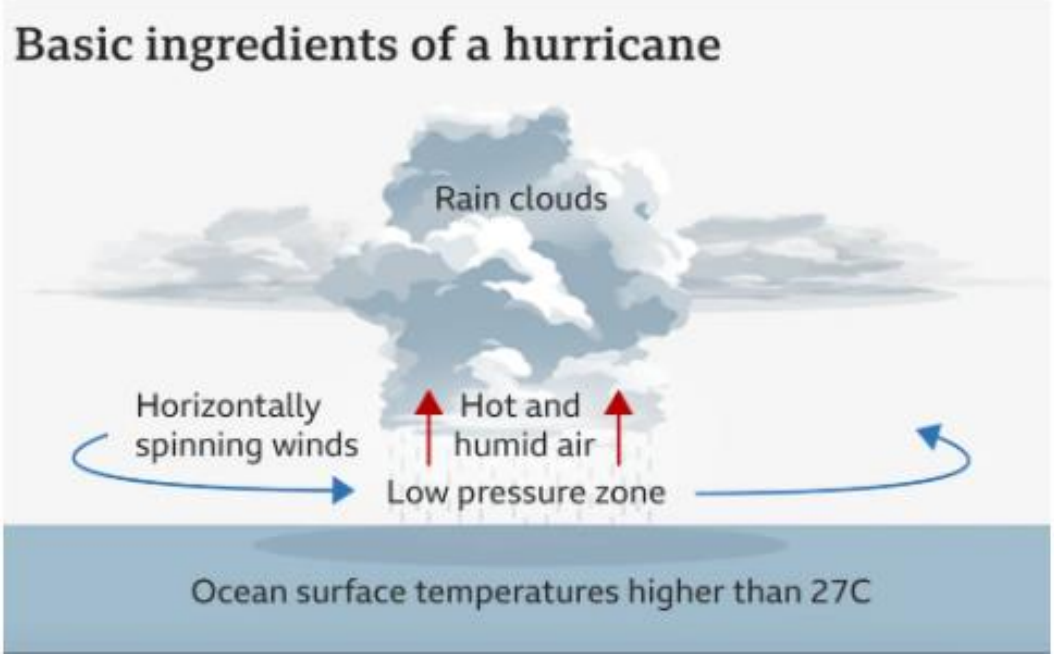

Figure 10. Basic ingredients of a hurricane.
https://www.bbc.com/news/articles/cx2lyzw7xwxo

The verbal headline frames the infographic and signals that the image is intended to explain the essential conditions required for hurricane formation. Other verbal labels (nominal phrases) identify the key atmospheric and environmental components represented in the image. These textual elements function as conceptual anchors, ensuring that the viewer can accurately interpret the corresponding visual and diagrammatic components.

The central image of a large cloud formation serves as the dominant representational element. This cloud visually symbolizes the storm system and provides an intuitive focal point around which the explanatory structure of the infographic is organized. The cloud operates as a schematic visual representation, making the process easier to generalize and comprehend.

A particularly important multimodal feature is the use of diagrammatic arrows, which play a crucial explanatory role. The red upward arrows beneath the cloud indicate the movement of hot and humid air rising from the ocean surface, while the blue curved arrows represent horizontally spinning winds. These arrows visualize movement and direction, thereby introducing a dynamic dimension into an otherwise static image. Through these graphic devices, the infographic is able to represent process, circulation, and cause-and-effect relationships without relying on lengthy verbal explanation.

The color of the arrows also contributes significantly to meaning-making. The use of blue for the ocean and rotating wind arrows reinforces associations with water and atmosphere, while the red arrows visually signal heat and upward energy movement. These color choices encode conceptual distinctions and enhance interpretive clarity by differentiating between the various meteorological forces.

The spatial organization of the infographic is also highly meaningful. The image is vertically structured to reflect the atmospheric layering involved in hurricane formation. At the bottom, the ocean surface is shown as the foundational environmental condition. Above this, the low-pressure zone and rising warm air are positioned centrally, while the cloud mass occupies the upper section of

the image. This vertical arrangement mirrors the natural meteorological process being described and helps the viewer understand the relationship between oceanic heat, air movement, and storm cloud development.

The third group of multimodal infographic objects consists of visuals whose meaning cannot be fully understood without reading the news article.

For instance, Figure 11 presents projected parliamentary seats for Serbian political parties; however, the interpretation of parties' names listed along the vertical axis requires reference to the article, as only abbreviations are provided.

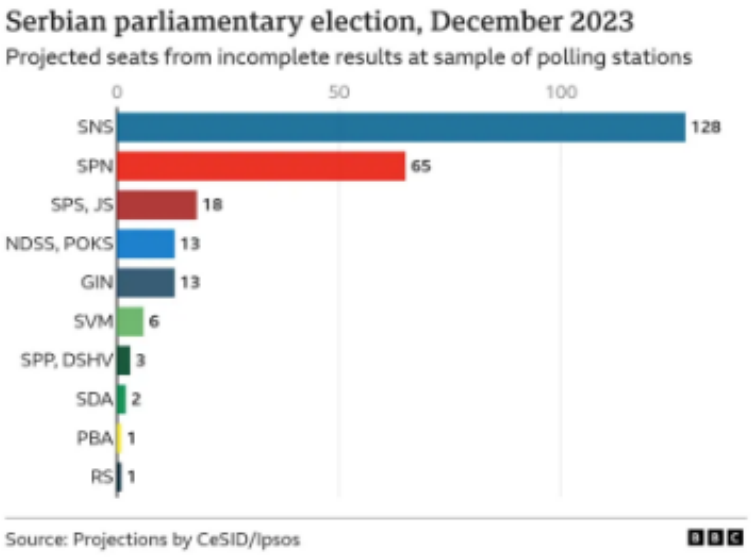

Figure 11. Serbian parliamentary election.
https://www.bbc.com/news/world-europe-67742032

Similarly, in order to accurately decode Figure 12, it is necessary to read the accompanying news article, although the multimodal visual itself contains numerous interpretive "clues". The image concerns Donald Trump's potential criminal cases, specifically the issue of classified documents and represents the process of legal accountability. Verbal labels structure the infographic around the set of top navigation categories (Hush Money, Classified Documents, Election Interference, and Fulton County). Below, individual stages of the legal process are labeled as *Investigation, Indictment, Arraignment, Trial, Verdict, and Appeals*. These lexical units function as conceptual anchors, naming each phase of the judicial procedure and providing a clear sequential framework for interpretation.

Figure 12. Donald Trump's criminal cases.
https://edition.cnn.com/interactive/2023/07/politics/trump-indictments-criminal-cases/

Each stage is represented by a corresponding symbolic icon (e.g. a magnifying glass for investigation, documents for indictment, a courthouse for arraignment, scales of justice for trial, a gavel for verdict).

These icons serve as visual shorthand, reinforcing the meaning of each stage and enabling rapid recognition even in the absence of a detailed text. The combination of icons with labels enhances both clarity and accessibility.

The use of color plays a crucial role in distinguishing between completed and pending stages. Earlier stages *(Investigation, Indictment, and Arraignment*) are rendered in a darker tone, indicating that they have already taken place, while later stages (*Trial, Verdict and possible Appeals*) are yet to occur and are thus represented in lighter tones. This contrast visually encodes temporal status – completed versus forthcoming events.

The central organizing principle of the image is the diagrammatic timeline, which represents the legal process as a linear progression from left to right. The top row provides categorical navigation, while the central horizontal axis presents the procedural sequence. This clean layout reflects a compressive strategy of information representation, in which complex legal processes are reduced to their essential stages and displayed in a streamlined visual format. The left-to-right progression mirrors conventional reading patterns, facilitating intuitive comprehension.

Thus, on the basis of examples considered, the principal models of constructing infographic objects embedded in news texts can be distinguished.

The first group comprises infographics whose underlying basis is a cartographic image – cartographic-based models. These infographics include the following elements:

1) verbal framing + map + short verbal annotations;
2) verbal framing + map + color + location markers;
3) city names verbal labels + map + color + arrows/lines;
4) city names verbal labels + map + geometric shapes.

The second group is formed by a spatial principle of infographic structuring based on the vertical and horizontal type of ideas classification – spatial-organizational models with vertical/horizontal structuring. The following semiotic resources are employed to construct this type of infographics:

1) lexical units/attributive word combinations + numbers + schematic/iconic images;
2) lexical units/attributive word combinations + numbers + geometric shapes;
3) lexical units + numbers + color;
4) lexical units/attributive word combinations + highlighting (color, underlining) + arrows/lines.

From a multimodal perspective all the infographic objects within the news discourse demonstrates a high degree of cross-modal cohesion**.** The verbal mode provides narrative, contextual details, terminology, factual framing, place identification, defines categories and explanatory anchorage. The dominant verbal elements in multimodal infographics are nouns and nominal groups. Traditional syntactic organization is replaced by a visual syntax, based on spatial structuring and hierarchical relations that encode significance and priority. The visual mode establishes spatial orientation, organizes the spatial dimension, represents territorial relations, illustrates material properties of objects, and structures the reading path. Within the scopes of the visual mode diagrams introduce analytical classifications, illustrate motion, movement, process and sequence; enable comparison. Typographic semiotic resources and color supply emphasis and informational hierarchy. These modes do not function independently; they are tightly integrated into a single communicative system**.** The meaning emerges not from any single mode in isolation, but from the synergistic interaction of all these resources. As a result, a comprehensive, highly informative and self-contained multimodal unit is produced the aim of which is to ensure qualified and effective representation of information.

5. Conclusions

The conducted research has demonstrated that infographics embedded in online news discourse constitute complex multimodal units whose communicative effectiveness is determined by the systematic interaction of heterogeneous semiotic resources. Within the contemporary digital media

environment, infographics have become an integral means of structuring, compressing, and visualizing information, enabling news platforms to present large volumes of data in a concise, accessible, and efficient form.

The internal arrangement of infographics is based on the interaction of verbal, visual, typographic, spatial, numerical, and chromatic resources, each of which performs a specific functional role in the process of meaning-making. The verbal mode primarily provides nomination, explanation, categorization, and contextual anchoring; the visual mode ensures representational clarity and spatial orientation; diagrammatic and numerical elements facilitate comparison, classification, and data compression; typography and color contribute to informational hierarchy, salience, and interpretive guidance.

Overall, the findings confirm that meaning in infographic-based news communication emerges through cross-modal cohesion rather than through any isolated semiotic mode. Cross-modal cohesion serves as one of key mechanisms of contemporary online news meaning-making. It is precisely the synergy of verbal and non-verbal resources that ensures the coherence, interpretive depth, and pragmatic force of infographic objects, allowing them to function as highly informative and communicatively powerful components of contemporary online news discourse.

Declaration of the conflict of interest
The author has no competing interests or funding support to declare.
The author declares no use of generative AI.

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МУЛЬТИМОДАЛЬНА АРХІТЕКТОНІКА ІНФОГРАФІКИ В ОНЛАЙН-НОВИННОМУ ДИСКУРСІ

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Рукопис надійшов 7.04.2026; отримано після доопрацювання 15.05.2026;
прийнято до друку 22.05.2026; опубліковано онлайн 31.05.2026

Анотація
Статтю присвячено дослідженню мультимодальної композиції інфографіки, що входить до основного складу новинних повідомлень, як одного з найбільш ефективних засобів репрезентації складної інформації у сучасному цифровому комунікативному середовищі. Теоретичним підґрунтям дослідження слугують положення мультимодальності та мультимодального дискурс-аналізу, відповідно до яких смисл розглядається як результат взаємодії кількох семіотичних ресурсів. У межах онлайн-новинної комунікації інфографіка трактується як цілісне мультимодальне утворення, у якому поєднуються вербальні, візуальні, типографічні, просторові, числові та колірні елементи. Відповідно до рівня семантичної автономності інфографічних об'єктів відносно тексту новин, інфографіку можна класифікувати як цілком автономну, частково залежну та повністю залежну від основного тексту новин. У статті також подано основні моделі конструювання мультимодальних інфографічних утворень та встановлено, що найбільш продуктивними є картографічно-орієнтовані моделі та просторово-організаційні моделі з вертикально-горизонтальною класифікацією ідей та ієрархічними зв'язком між її елементами, що втілює відносини значущості та пріоритетності. Вербальний модус виконує переважно номінативну, експлікативну та орієнтувальну функції. Основними вербальними одиницями мультимодальних інфографічних об'єктів є іменники та номінативні групи. Візуальні елементи, діаграми, типографіка та колір забезпечують структурну цілісність, ієрархію, інтерпретаційну єдність і прагматичну виразність інфографіки. Високий рівень крос-модальної когезивної взаємодії, а також синергія гетерогенних семіотичних ресурсів забезпечують комунікативну ефективність інфографічних об'єктів. Композиційна структура інфографіки сприяє оптимізації сприйняття, компресії інформації та посиленню прагматичного впливу новинної комунікації.

Ключові слова: *онлайн-новинний дискурс, мультимодальність, інфографіка, мультимодальна композиція, семіотичний ресурс, смислотворення, крос-модальна когезія.*

Декларація про конфлікт інтересів
Автор не має конфлікту інтересів щодо цієї статті.
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