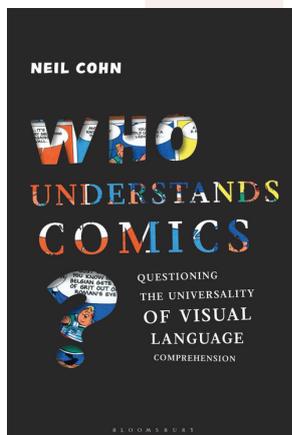


Reading visual narratives across cultures

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Neil Cohn

Who Understands Comics? Questioning the Universality of Visual Language Comprehension.

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Neil Cohn's latest book can be seen as a sequel to his previous volume, *The visual language of comics* (Cohn 2013), which offered a long-needed analysis of visual narratives from a cognitive perspective. In this new work, Cohn starts by questioning the widespread assumption that the meaning of sequential images is transparent and universally comprehended. He calls this idea Sequential Image Transparency Assumption (SITA) and suggests that it is probably derived from the intuitions of adults who are familiar with visual narratives. In contrast, it is generally agreed that verbal languages need to be learned for understanding and communication to occur. Cohn argues that the cognitive processes involved in "creating and understanding graphic images, particularly those in sequence" (p. 4) are analogous to verbal cognitive processes and sets out to test the extent to which the theory is upheld or contradicted by experimental and data-driven research. Finally, Cohn considers extensive literature involving sequential visual reading tasks that show that sequential reading fluency is also acquired through practice and the interpretation of visual narratives varies depending on cognitive and cultural factors.

The book, which is a "substantially expanded and supplemented account of ideas" (pp. xiii-xiv) that first appeared

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in a previous article (Cohn 2020) is organized into nine chapters. In the first chapter, Cohn sketches out the book's rationale and outline, while the remaining chapters offer evidence that the SITA is not supported and that we can explain the cognitive processes involved in understanding sequential narratives in terms similar to those used in language processing. Findings include cases in which sequences of images could not be construed by participants in a test, for instance, by individuals unfamiliar with Western-style visual narratives and children under the age of 4. These findings demonstrate that comprehension varies depending on fluency, defined as "a proficiency acquired through exposure to and practice with a system of visual narrative" (p. 34).

In the first chapter, the author provides a summary of his own Visual Language Theory (VLT), which is based on a detailed analysis of the componential units of visual narration, and which considers the comprehension of the components of the visual lexicon of individual images as well as the comprehension of images in sequence. Cohn defines language, whether spoken, signed, or visual, as "a set of patterns in a person's mind/brain" (p. 4) developed through exposure and practice. These patterns constitute a person's idiolect, and people share a common language only "[t]o the extent that a person's idiolect aligns with those of other people" (ibid.). Thus visual languages vary across the world like spoken and signed languages. For example, Japanese manga and American comics use different visual languages, defined as "the systems" behind the production and comprehension of sequences of drawings. Cohn contends that we can analyze these systems according to categories and units similar to those used to analyze verbal languages. For example, visual language's 'visual vocabularies' are created by patterned graphics, i.e., "configurations of lines and shapes with regular and repeatable forms" (p. 36). These include morphemes such as balloons, motion lines, etc., whose symbolic meaning is opaque when unfamiliar with conventions. Different drawing styles reflect different cultures and functional purposes (e.g., superhero comics vs. instruction manuals) and testify to the systematic nature of patterned visual lexicons. A grammar organizes these in a combinatorial system with a culture-specific morphology. Finally, different visual languages have a culture-specific compositional structure, i.e., an expected arrangement of panels on the canvas, sequential reading order, and specific narrative, conceptual and event structures.

Chapters 2 and 3 are based on experimental process data and corpus data. Chapter 2 investigates the cognitive mechanisms involved in processes related to comprehending the layout, semantics, and narrative structure of visual narrative sequences. It reviews neurocognitive experiments that examine brain activity, as measured by brainwaves and eye movements, during cognitive processes involved in reading sequential images. The results of the studies surveyed, several of which, here and in other chapters, were carried out by Cohn and his associates, support the author's

VLT proposal of a similarity between the mechanisms involved in processing visual narrative sequences of verbal language. Similar to what happens to spoken language, individuals go through cyclic stages of knowledge access, prediction, confirmation, and updating. Comic readers negotiate bottom-up information and top-down stored knowledge as visual information flows are processed across layouts, semantic and narrative structures. These experimental studies show, for instance, that participants tend to order panels interpreted as sequences according to regular patterns and that more experienced readers have smoother eye movements through page layouts. Thus, we may hypothesize that, like for spoken languages, the acquisition of fluency in a visual language depends on “exposure to cultural systems across a developmental trajectory” (p. 56).

Chapter 3 examines sequencing structures in a corpus of 290 annotated comics from different countries, genres, and publication dates to investigate whether methods of sequencing visual narratives vary or are uniform across cultures. The roughly 36,000 panels in the over 6,000 pages of the Visual Language Research Corpus (VLRC) used as data in this chapter were coded according to page layout, attentional framing, and the relation between panels. Quantitative analyses of the corpus point to variant patterns across European, American, and Japanese comics. These differ in the proportion of “macros” (panels with a group of “active entities”), “monos” (panels focusing on one “active entity”), “micros” (panels focusing on detail), and “amorphic” frames (panels without “active entities”), as well as in the type of transition between panels, which may represent a change between characters, between spatial locations or between states of time. Compared to Japanese manga, comics from Europe and the United States have a greater proportion of mono than macro panels and “more changes in time than those between characters or spatial locations” (p. 76).

Quantitative results also testify that conventions change not only across cultural spaces but also over time. For instance, while the number of panels per page in US mainstream superhero comics has decreased over time, European comics have remained essentially unchanged. On the other hand, American Visual Language (AVL) has increasingly been influenced by Japanese Visual Language (JVL): visual patterns of recent American comics have moved closer to those of manga. In contrast, Original English Language (OEL) manga from the United States have framing types halfway between American and Asian comics. Different framing conventions may demand different inferential paths that challenge readers not used to a specific visual language. For instance, a panel sequence on a manga page depicting only single characters (monos), close-ups (micros), or environmental information (amorphic panels), requiring us to infer the broader scene, may be disorienting for readers of more traditional American or European comics, who will probably perceive this as poor storytelling because of their lack of fluency in Japanese visual language.

These results suggest that visual languages used in comics across the world “have distinct structures that differ from each other in measurable ways” (p. 78), though they influence each other and are not uniform. On account of their iconic character, visual narratives may often be more easily understandable across cultures than verbal languages. However, variation between different comic languages appears to be systematic. Moreover, other visual languages (e.g., the sand drawings of Australian Aboriginals or the medieval European imagery on the Bayeux Tapestry) differ even further. Cohn concludes that the diversity of visual languages “calls into question the utility of referring to a monolithic notion of a ‘comics medium’ at all” (p. 88).

The following four chapters review groups of studies that put to the test, each from a different perspective, the idea that visual narratives are universally comprehensible. Chapter 4 reviews cross-cultural findings, according to which people from specific cultural backgrounds may not spontaneously interpret images as sequential and may not understand spatially sequential visual narratives. The studies surveyed consider experimental tasks with wordless visual narratives and tasks in which sequential images are used to study aspects of cognition such as IQ, temporal cognition, and Theory of Mind. Results show that participants often did not construe sequences of images as sequential but rather interpreted them as isolated scenes. Isolated images were generally arranged in a layout paralleling the participant’s writing system. The research survey in this chapter suggests that the ability to understand a sequence of images as a narrative, or indeed as a sequence, is not innate nor universal; instead, it has to be learned.

This topic is taken up in Chapter 5, which surveys findings from developmental research, mainly looking at other aspects of cognition. It shows that sequences of images are understood and produced over time with age and experience. Children first learn to recognize referential information within individual images; subsequently, the events those entities undertake, and eventually, a continuity constraint takes hold as children learn to make inferences across images. These studies show that a significant shift in the comprehension of visual narratives occurs between 4 and 6 years of age when children learn to understand individual images as part of a sequence. Moreover, studies that consider the ability to produce rather than read a sequence of images suggest “a strong role of exposure in creating conditions for proficiency at younger ages” (p. 113).

Chapter 6 focuses on reading fluency and proficiency and examines how the comprehension of sequential images varies depending on reading frequency. It examines the level of comprehension among people who receive exposure to visual narratives like comics and whether fluency is stable once a certain threshold of exposure has been reached. Cohn reports on two procedures for examining visual narrative proficiency: the Chiba University Comic Comprehension Test (CCCT), a series

of tasks that consistently showed that comprehension of sequential images increases with age, and the Visual Language Fluency Index (VLFI), a proficiency score devised by the author himself and based on self-rated assessments. Participants answer a questionnaire asking about their frequency of reading and drawing comics both currently and while growing up. By looking at both conscious decisions (ratings, segmentation) and unconscious actions (accuracy, response times, reading times), the VLFI allows for correlations between experience/exposure to comics reading/drawing and fluency in visual narrative processing.

Chapter 7 reviews research involving sequential images carried out on neurodiverse populations of individuals diagnosed with a cognitive disorder such as Autism Spectrum Disorder (ASD), Schizophrenia Spectrum Disorders (SSD), and Developmental Language Disorder (DLD), as well as on individuals with brain damage (e.g., aphasia). Research in this area has been motivated by the Visual Ease Assumption (VEA), according to which wordless visual narratives are supposed to circumvent a language deficit. Overall, the results of research with neurodiverse populations suggest that proficiency in visual narratives is impaired in individuals with neurological damage and that mechanisms of verbal and visual narrative systems overlap. Cohn argues that, while these studies may be helpful in diagnoses of clinical conditions, they are not testing uniform aspects of neurocognition. Instead, he suggests the need for dedicated research on visual narratives rather than using visual narratives as a proxy for investigating other aspects of cognition.

Chapter 8 compares drawn visual narratives and film visual narratives, investigating whether comprehension mechanisms in the latter may be transferable to the former. Cohn discusses the similarities between films and visual narratives like comics, which are divided into sequencing patterns instead of the experience of events in real life. While comics are structured by panels, film narratives are structured by shots edited together in a temporal sequence. However, films use natural percepts rather than the visual vocabulary and conventionalized morphological elements of comics and motion across a temporal dimension rather than spatially juxtaposed units. Extensive empirical literature implies that the understanding of film narratives is acquired as part of a developmental trajectory, like fluency in reading drawn visual sequences. On the other hand, referential continuity seems essential for the comprehension of sequential images, whereas in film sequences, visual incongruities seem to go easily unnoticed. Finally, Chapter 9 summarizes the findings emerging from the ample literature surveyed and sketches out their implications for the use of comics and visual narratives in education, communication, and psychology.

This important book sums up research undertaken by Cohn and his associates since the publication of his previous monograph and further contributes to an understanding of the cognitive mechanisms involved in the processing of comics and,

more generally, visual narratives. Cohn shows how we can apply psycholinguistic principles and concepts such as developmental trajectory, acquisition, fluency, and proficiency to analyzing sequential narratives and describe the cognitive processing of visual images and verbal language in similar terms. The studies surveyed indeed offer support for his concept of visual language as a rule-governed system that, like verbal and signed languages, is subject to cultural and cognitive variation.

The work has a limit, of which the author is aware. It focuses on sequential reading at the expense of reading individual images and the multimodal experience of understanding comics, where visual language mixes and combines with verbal language. However, the limit of the work is also its strength. The focus on sequential images allows the author to isolate and dissect this aspect of visual narratives throughout a vast range of experimental and empirical studies. Cohn seems to share with psycholinguistic research a penchant for acronyms and quantification. At times, the richness of detail and some repetitions and close reformulations may prove taxing for a reader interested in comics studies more than in neurocognitive research. However, the author's scholarly and disciplined approach makes for systematic and solid research, and indeed, this work proves the robustness of Cohn's theory of visual language(s).

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