Book review
The Routledge International Handbook of
Research on Writing

Horowitz, R. (Eds) (2023). *The Routledge International Handbook of Research on Writing (2nd edition).* New York: Routledge | 630 pages. ISBN: 9780429437991

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A few years ago, I read an article in the *New Yorker* describing a new phenomenon that would revolutionize writing (Seabrook, 2019). The tool, *ChatGPT2*, was trained to predict linguistic patterns and could produce human-like prose. What struck me the most was the opening scene when another AI tool, that since is a standard implementation in word processors, suggested a way to complete a sentence in a letter the author was writing to his son. When typing "I am p—," the AI suggested "I am proud of you," instead of "pleased," which was the author's intended word. Proud was something that the author had not thought of. Predicted language altered the message, and perhaps the thinking of the author. The predicted language translated a thought the author did not initially think of but signed off on. Since this feature article in the *New Yorker*, *ChatGPT* no longer needs an introduction, and writing researchers across the globe struggle to explain how AI writing tools will impact the, as it were, nature of writing. This was evident at the 2023 conference Writing Research Across Boarders VI, where an impromptu AI session attracted a large volume of researchers who all had more questions than answers. Writing has been put forward as a tool for materializing thinking and knowledge and synthesizing information. But what happens when AI engines produce messages that read human-like and release persons of the burden of writing? Will writing become obsolete, replaced with editing skills? And will AI eventually mean that writing will no longer be a tool for figuring out what one thinks about a particular subject? Will writers (editors) be content with letting predicted language models suggest style of voice, tone, and contents?

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Against the backdrop of how technologies impact writing, it was with great interest that I read the second edition of the *Routledge International Handbook of Writing Research* (Horowitz, 2023). I hoped it would give me theoretical and empirical accounts of what writing enable humans to do, and accounts of ever more complex human-tools-interaction that characterizes writing. I was not disappointed. The volume consists of fourteen parts and 35 chapters, written by world leading writing scholars. Space does not allow me to review all 35 chapters in depth, so I will try to point to some highlights, even if *highlights* would be a misnomer considering the overall high quality of the volume.

Organization and content
The first part of the book is called "A History of World Writings and Literacies" and contains six fascinating chapters covering the origin of writing (Erard & Schmandt-Besserat), how children learn to represent language in graphic symbols (Machón), a history of typography (Jury), a history of the book (Finkelstein) and a history of "Schools and Writing" (Olson) as well as chapter called "History of Writing Technologies Redux" (Gabrial). Erard and Schmandt-Besserat tell the story of how writing was invented 3200 BC in Mesopotamia and originally was used for mundane, albeit important functions such as keeping tallies of goods. Prior to this – about 25,000 years prior – humans crafted graphical representations, for example sketches of animals, for purposes of art. Art and writing merged around 2700 BC when writing was used in the context of funerals. Some thousand years later, the alphabet was invented and eventually molded to present day alphabets such as the Latin alphabet and Greek alphabet. For Chinese the developmental path was different. Unaffected by development elsewhere, writing was parallelly invented in China around 1250 BC, and astoundingly, some 1,500 Chinese characters from that time are still in use. All chapters in the first part make these kinds of links between history and the present, and four of them also ponder about the future. Erard and Schmandt-Besserat note that a new alphabet, the emoji alphabet, is gaining territory with 3,600+ available emojis in the Unicode library. Gabrial asks if writing will become "passé" once speech-to-text technology is even more refined; Finkelstein makes the case that books will continue to be a conduit for cultural transmission; Olson speculates if young people's tendencies to choose social media rather than "serious" reading (and writing one might presume) will lead to a decline in thinking skills, provided that writing is a major tool for materializing thoughts and reasoning, as suggested in the introduction to this review. The chapter on children's drawings does not offer a reading of the crystal ball, but one cannot help wondering if technical tools such as tablets and smart phones may affect how children learn to draw.

Part two deals with speaking and writing connections in two chapters. Horowitz, who also edited the book, provides an interesting account of the creation of voice

in writing. She defines voice as "persona, personality, tone, expressed through vocabulary choices, syntax, and punctuation, paragraph design—through musical elements or intonation that are heard and strategically positioned though punctuation by the author" (p. 113). The exact nature of the transition from oral voice to the metaphorical writing voice may still be difficult to grasp, but Horowitz notes that recent developments in academia has led to an acceptance of more oral sounding prose and thus a less brutal (my word) transition from speaking to writing. Biber concludes the second part by providing an overview of the linguistic differences between spoken and written text.

The third part connects writing with reading in two chapters, with Nelson and colleagues starting off with a chapter on the writing-reading nexus that reviews four ways in which writing and reading are connected: cognitively by constructing meaning, intertextual as reading text influences text to be written, text knowledge and finally social and cultural connection including aspects of audience impact on writing. The tenth chapter of the book deals with text structure (Meyer et al.), and precisely that important shared knowledge between readers and writers, who in their different capacity must appreciate an author's purposely arranged text and to arrange a text that meets the expectation of a reader, respectively.

Part four concerns Writing Beginnings, Cognitive Processes and Self-Regulation in four chapters. Rowe reviews research on how and what children between birth and eight write. The review built on 214 reports, and Rowe concludes that research on writing in early childhood during the period 2010–2020 mainly drew on four theoretical underpinnings: cognitive and socio-cognitive perspectives, sociocultural research, social semiotics and posthuman/new materialist perspectives. Research studies conducted under any of these four theoretical umbrellas have contributed to a nuanced understanding of cognitive processes influencing writing, how learning to write is part of enculturation, how children use many modalities to compose messages and finally how writing in its broadest sense is the result of interaction between the human writer and non-human artifacts.

McCutchen, in the book's twelfth chapter, reviews research on cognitive aspects of developing writing. As the author herself notes, such accounts have surfaced earlier, but McCutchen adds to previous literature by systematically comparing findings from research studies with English speaking participants and studies with participants speaking another language than English and writing in their mother tongue. McCutchen notes that while cross-language studies are limited in number, there are findings across languages that suggest similar patterns of development of writing skills. This finding is of course interesting as it pertains to the validity of cognitive models. The chapter is preferably read in conjunction with the fourteenth chapter, in which Hacker reviews research on cognitive models of writing and metacognitive processes to provide an account of how to understand self-regulated writing.

Bereiter and colleagues make the case that writing proficiency can be developed without writing instruction. Specifically, they argue that "ideational" writing can be learnt by specific measures to develop content-related knowledge without explicit writing instruction. This intriguing argument is supported by research accounts that show how "knowledge building pedagogy" leads to better writing compared to writing of students who studied the same topic but using a different pedagogy. The knowledge building approach can be said to build on principles from self-regulated strategy development model with amendments that focuses on children making ideas "explicit and the objects of discussion and improvement" (p. 227). Bereiter and colleagues note that the evidence in favor of the knowledge building pedagogy are promising, albeit limited for the time being.

Part five is a single chapter part, concerning elements of digital writing. Asaf and colleagues review literature on the effects of using digital tools, especially keyboards, for writing. Studies have found that digitally produced texts may be of higher quality, longer, and composed with higher motivation than handwritten counterparts. There are studies indicating that using fine motor skills (i.e., writing by hand) have some benefits, because "cognitive representations are grounded in modality-specific sensory and motor systems" (p. 270). Studies from socio-cultural perspectives have shown that typing, on the other hand, may have a positive impact on motivation. In the last section of the chapter, the authors point to a relatively recent development, namely digital handwriting. With the advent of tools as Appel's Pen and Remarkable a writer can now create digital texts using fine motor skills. The authors mention the "return of the pencil" as an avenue for future research, and this reader agrees with that. It will be interesting to learn more about how human-digital tool-interaction impacts writing.

Part six is also a single chapter part providing an introduction to the concept of intercultural rhetoric research (McIntosh & Connor), which concerns the comparative study of texts composed in different contexts and different languages.

Part seven includes two chapters on everyday writing, with one on writing in the relatively small language Safaliba in Ghana (Sherris & Yakubu) and one that conceptualize everyday writing (Kalman et al.), that is writing that is neither professional nor educational but done to cope with everyday tasks.

The eighth part of the volume is titled Educational Communities of Writing, a title that signals a partly sociocultural approach to understanding writing in educational settings. I say partly because the first chapter presents the Writer(s)-within-community model of writing (Graham), which is a model that explicitly unites sociocultural and cognitive perspectives on what it means to write and to be a writer in terms of a member of a community and in terms of drawing on cognitive recourses for executing writing. The WWC model has been presented elsewhere, but the novel approach in this chapter is to situate it in the context of school writing in general and specifically with a focus on teachers' role in school

writing. Graham reminds the reader that theory and empirical evidence suggest that "no two writing community are exactly alike," which suggest that professional development and other interventions to some extent always must be tailored to the needs of the particular subjects in a writing community. Kostouli, in chapter 20, adds to this observation by presenting a "new dialogic sociociritical pedagogy" (p. 351), developed within the Greek Cypriotic educational system, which highlighted the need to teach genre as a means to fulfil communicative purposes in specific contexts. Part eight concludes with a chapter by Castelló and Sala-Bubaré on how to support writing development of doctoral students.

The ninth part of the volume is entitled "Individual Uses of Written Language" and contains two chapters: one on the "bilingual brain" (Eggelston & Kovelman) and one on writing as a tool for physical and emotional "healing" by Singer and colleagues. Eggelston and Kovelman present findings from studies using neuroimaging on how, as it were, the bilingual brains develop. However, these findings, as is also evident in a subsequent chapter by Zhang, Eggelston and Kovelman, mostly concern reading and the authors note that "we know almost nothing about the neurobiology of bilingual or second language writing!" (p. 391). It is known, though, that writing new words instead of speaking leads to stronger activities in parts of the brain that deal with writing and speech-to-print mapping. The chapter on writing as therapy (Singer et al.) is a review of meta-analyses. The results are mixed with some smaller studies indicating that expressive writing – 20-minute writing about a difficult subject – may have positive impacts on physical and mental wellbeing. For example, subjects suffering from PTSD have shown to have their wellbeing improved by participating in expressive writing therapy.

Part ten is entitled "Students who are deaf and with autism disorder." Mazique gives an introductory to teaching academic English to deaf and hard-of-hearing students. Specifically, Mazique provides her readership with outlines of what she calls "culturally relevant deaf pedagogy in a writing classroom," with concrete examples of how to set up a university writing course for students who are deaf or hard-of-hearing. Zajic, in the book's twenty-fifth chapter, reviews literature on writing for students with autism spectrum disorder, makes the case that future research should incorporate writing theory when designing and discussing studies.

Part eleven of the book concerns writing in the sciences and in engineering. Van Winkle and Nussbaum review literature on writing-to-learn studies in the context of science and conclude that writing can be an effective tool for developing conceptual learning, because writing materializes thoughts, synthesis and arguments as well as counter-arguments that other modalities might struggle to do equally well. Paretti and Ford describe writing practices among engineers. It may not come as a surprise that "informal short-form genres such as meeting notes, ongoing project documentation, and email are at least as central, and for new engineers perhaps more central, as the long-form project reports

traditionally produced in school" (p. 470), which perhaps should impact how writing is taught in engineering education.

Part twelve contains two chapters on motivation for writing. Hidi and colleagues review literature on the role of interest in writing. They start by noting a 21st century paradox: young people write more than ever before (in social media settings for example) but tend to be negative to the more formal writing associated with education. They go on to describe phases of interest for topics and for writing as an activity and provide guidelines on how to increase interest for writing. Such interest is, according to the authors, positively associated with writing outcomes. The authors also highlight the differences between interest in a topic and knowledge about the same topic, and provide empirical evidence to support the claim that interest in a topic alone is not a guarantee for writing quality; a writer must also possess knowledge about the topic to be able to produce high quality texts. Boscolo ends this part of the book with a chapter on motivational constructs related to writing, such as self-efficacy, interest in and attitude to writing. He concludes with what he believes should be the goal for motivational work in the context of writing instruction: to develop av "favorable disposition or 'attitude'" (p. 505) toward writing, and to instill a sense in students that they are able to use writing as a tool for communicating about a topic.

Part thirteen of the book is a single chapter on the relationship between creativity and writing. In one way the chapter serves as a continuation of part twelve. Specifically, the author (Alexander) presents an in-depth discussion of the construct creativity and how creativity can be linked to writing. Alexander asks if AI and other tools that makes writing "easy" (my word) may render coming generations of writers unmotivated to create original works.

The last, fourteenth part of the book concern assessment of writing. Five chapters, of which one has already been mentioned (Zhang et al.), deal with questions that more or less closely relate to writing assessment. Hudson presents measures of linguistic maturity in writing, de Jong reading assessments that may be relevant to writing, as do Naumann. The book's concluding chapter is penned by Galbraith and colleagues, who describe a novel instrument to measure writers' subjective knowledge before and after writing.

Concluding remarks

I said early on in this review that the overall quality of the *Handbook* is high. From the review snippets presented above it should be clear that the volume covers an array of relevant topics. Most chapters contain a review of research thus far and extended discussions about what writing research that is needed in the future. As such, the Handbook will be an invaluable companion to junior and more seasoned writing researchers for years to come. I can only extend my gratulations to Horowitz for putting the handbook together.

With that said, are there any critical remarks to relay? This reader would have enjoyed an introductory chapter answering two questions: 1) What is writing? And 2) Why these particular parts, and these particular chapters? Such a chapter would have made the volume a more coherent whole. Many of the book's authors call for greater cooperation across theoretical borders. Graham's WWC model is one successful attempt, but I would have enjoyed a chapter that linked writing research from many more of the theoretical constructs presented in the book. That is maybe something for the next edition.

Finally, I have three additional wishes after reading the book. One, I would have liked a chapter on the assessment of text quality; how we conclude that a person has made a successful or not successful attempt at writing taps into questions about how to define writing and how to deal with the situational nature of writing.

Two, I think that adding a chapter on research methods in writing research would have benefitted the volume greatly. A plethora of methods can be inferred from the chapters, but a more explicit take on which methods are suitable for different types of investigations would be of value for beginning writing researchers.

Finally, I would have liked a chapter on the future of writing. Several chapters touch upon the subject. One example is Asaf et al. who in a short paragraph state: "we repeatedly stated and implied that writing affects thinking. The question now raised is how these enhancing features [i.e., AI] will affect writing skills, language abilities and other cognitive capacities. These changes in writing raise the question how writing abilities could or should be assessed." I could not agree more. Even if *ChatGPT* just recently became available for a large audience, digital writing and publishing has been around for some time. As has the feature "suggested sentence completion" in Gmail. I started this review with questions about how AI may transform writing. The handbook provides many useful perspectives, and it is obvious throughout the book that there is a conviction that writing is a powerful tool for thinking and for building knowledge, that may not easily be outsourced to language machines predicting prose. Still, AI will presumably impact our notion about "the author" and presumably affect how we view originality and authenticity. And it may be detrimental if students are deprived of learning to write in favor of learning to prompt AI machines.

References

Seabrook, J. (2019). The next word. Where will predictive text take us? *The New Yorker*.