AI and the Book Value Chain. Do We Need a New Concept of the Core of (Quality) Publishing?

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Abstract

AI systems can now be helpful in pretty much every stage of the publishing value chain, the application use cases range from writing blurbs, the use for predictive pricing all the way 'back' to the actual (co-)authoring of texts. This has analogies to the situation in the 1990s insofar, as early steps of digitization led to the irritating insight that elements that had been integral part of the essence of publishing (then e.g. printing on paper) were downgraded to contingencies. Thinking about this it becomes clear that the question what the constitutive elements of publishing are can already be asked concerning much earlier stages of book history, as will be shown with the help of a short introductory example. If algorithms can write texts, device marketing campaigns, etc., the current version of the question is: where, then, are humans ('in-the-loop') still indispensable, what is the new core of publishing, how can the system of publishing be described in the age of AI? This contribution will feed the discussion on what AI does to publishing and particularly to a convincing concept of publishing by discussing various thoughts on the essence of publishing and by postulating an irreducible core of publishing – irreducible not least in the sense that tasks in this core cannot be accomplished by algorithms in the general case or in a sufficient quality, respectively. Based on this, the contribution will propose a conceptualization of the 'human-in-the-loop' workflows around this core we have to expect and, in many cases, already see.

Keywords: AI; publishing; theory of publishing; postprint; cognitive assemblages; core of publishing.

I sistemi di intelligenza artificiale possono ora essere utili praticamente in ogni fase della catena del processo editoriale, con casi d'uso che vanno dalla scrittura di recensioni, all'uso per la determinazione predittiva dei prezzi, fino alla (co)autorialità dei testi stessi. Ciò presenta analogie con

la situazione degli anni ‘90, in quanto i primi passi della digitalizzazione hanno portato alla frustrante consapevolezza che elementi che erano stati parte integrante dell’essenza dell’editoria (allora, ad esempio, la stampa su carta) erano stati declassati a contingenze. Riflettendo su questo, diventa chiaro che la domanda su quali siano gli elementi costitutivi dell’editoria può essere posta già in relazione a fasi molto più remote della storia del libro, come verrà dimostrato con l’aiuto di un breve esempio introduttivo. Se gli algoritmi sono in grado di scrivere testi, ideare campagne di marketing, ecc., la versione attuale della domanda è: dove sono ancora indispensabili gli esseri umani (nel ciclo produttivo), qual è il nuovo nucleo dell’editoria, come si può descrivere il sistema editoriale nell’era dell’IA? Questo contributo alimenterà la discussione su ciò che l’IA fa all’editoria e in particolare a un concetto credibile di editoria, discutendo varie riflessioni sulla sua essenza e postulando un nucleo irriducibile dell’editoria, nel senso che i compiti di questo nucleo non possono essere svolti dagli algoritmi in generale o con una qualità sufficientemente elevata.
Sulla base di ciò, il contributo proporrà una concettualizzazione dei flussi di lavoro dell’uomo, all’interno del ciclo produttivo, che gravitano attorno a questo nucleo, che dobbiamo aspettarci e che, in molti casi, già vediamo.

Parole chiave: IA; editoria; teoria dell’editoria; postprint; assemblaggi cognitivi; nucleo dell’editoria.

Introduction

In the discourse about AI in publishing the focus is not rarely on authoring, i.e. text generation, recently typically in the context of large language models. This is understandable and from what I can see also productive for the discourse. It is, however, also astonishing, since authoring, the writing of actual ‘copy’, is something that in the general case does not happen within publishing. But admittingly, the abilities needed for algorithmic text production are closely connected to those e.g. needed for text evaluation (e.g. for the quintessential gatekeeping), text transformation (e.g. for translation) and text improvement (e.g. for copy-editing). All these – and many other, e.g. bibliographic ones – do fulfil tasks that undeniably form part of the publishing value chain.

Nonetheless, there is a complementary idea to the approach mentioned, the one looks at AI in publishing from a text generation angle. This complementary idea is to start with a holistic, theory-based view of what publishing is; this is helpful for an assessment of what the use of AI

means for our understanding of publishing. Corresponding theories typically break down publishing into component processes; these can then, more systematically, be examined with respect to the question in how far they can be replaced or supported by – and: what kind of – AI systems.

The remainder of this contribution will use theoretical approaches to publishing to address the problem, what – particularly after the arrival of generative AI – the use of AI in publishing means for our understanding of what is its core. Moreover, I will – using thoughts by Bhaskar, Latour and Hayles – suggest a comprehensive model of publishing that can be brought in line with the insights gained during the argumentation. This model of publishing will be an actor network with cognitive assemblages. As an excursus, I will ponder about the need for human-in-the-loop approaches in publishing also from a pragmatic standpoint, based on a recent actual incident in scholarly publishing. Finally, I will present a few considerations about what can be done in the publishing industry to create an environment that in times of generative AI is sustainably prosperous for publishing as a decisive force for healthy rational, democratic knowledge societies.

A selective journey through the mercurial history of publishing: what is a constitutive part of publishing and what is not?

It is true that the question if a certain execution connected to the emergence of books is (a constitutive) part of publishing (in a narrower sense of the word) or not can also sensibly be discussed for past epochs of publishing. To give evidence for that, I will focus on a few selected historical stages of publishing – with a conceptual and analytical mindset from current economics and management.

I will start with the question, if printing has been seen or can be seen, respectively, as a constitutive part of publishing in the early history of publishing and for the situation in Germany. The answer is: that depends. In the period of the Druckerverleger ('printer publishers' in the itinerant trade epoch, approx. 1450-1650), printing is (constitutive indeed, as the concept Druckerverleger suggests!) part of publishing – the main agents of the period are printers; it is the printers that look for material to be published and that organise the Europewide distribution. In the following period of the Verlegersortimenter ('publisher booksellers' in the barter trade epoch, approx. 1650-1850), printing in contrast is not part of publishing – the main agents are booksellers.

They exchange the books they have chosen for distribution and have had printed by printers as service providers at book fairs for books from other booksellers and then sell them at home.

In the period of conditional trading (from the late 18th century), printing is again not part of publishing; publishers have the books printed with (external) printing houses and sell them with the right to return and at discounts to booksellers. As the period of conditional trading goes on, however (from the late 19th century), at the time of what for Germany is also labelled the period of the second reading revolution (in which growing demand leads to a scarcity of reading material and of printing capacities) and also as a consequence of the professionalisation of publishing (including the control over the whole process from the manuscript to the tradeable book), printing gets (re-)integrated into publishing, is seen as a (if clearly distinguishable) part of it. From around the 1970s, still in the period of conditional trading, printing gets a commodity mainly selling on price, and is therefor, again, not part of publishing, but a task typically executed by external service providers, not rarely by way of offshoring to countries with e.g. lower wages, to order of publishers.

When finally, from around the mid-1990s, 'electronic' (as it was called at the time) or digital publishing developed as an exciting new part of the book industry (and was expected to become the dominating way of publishing within only a few years), print is not the output format without an alternative for book content any longer. The latter is true, even when in the 2020s digital publishing is, looked at across all segments, still by no means the dominating way books are produced and read. Since printing was still considered close to the concept of publishing up to this point, an early, informal version of deliberations that were triggered by the new situation was the witticism 'we are not in the tree killing business, our focus is on content', a whistling past the graveyard as it was frequently heard at 1990s book industry conferences and fairs. Printing after the appearance of digital publishing products obviously continued not to be seen as part of publishing – in fact, for a (slowly) growing part of the portfolio of publishers, it is not even an outsourced value contribution any longer.

We are now in a stage in which AI systems evaluate manuscripts, design and implement marketing campaigns, etc. and in which therefore the 'we are not in the tree killing business' witticism misses the point, it is neither enlightening nor even pithily funny anymore. For an

updated self-conception of publishing – if in the form of a catchy claim or not –, the question is, if we let us chase, as it were, by technological etc. developments and start considerations for every instance and for every new 'era', defensively defining withdrawal line after withdrawal line. What, following such lines, would be the next business publishers are allegedly not in? Or, if we rather, alternatively, can systematically outline what publishing is in its core and then specify in a theory-based manner which elements are irreducible (as far as can be seen at a given moment...). To have a handle, corresponding considerations would at least implicitly have to be based on the provision that what an algorithm can do really well and without considerable involvement of humans cannot be part of the irreducible core of publishing by 'definition', as it were. This provision has a normative component and is of course disputable – I will still stick to it for this contribution, nonetheless.

Systematic accounts of publishing, particularly current book publishing

To systematically capture what essentially happens in publishing, I take the work by Darnton and Janello as points of departure. Darnton postulates a communication circuit (of the book) in which publishing is situated between other top-level clusters of activities like printers (see above!) and shippers[1]. Darnton does that on the basis of detailed research he did for the special conditions in the time of enlightenment in the border region between France and Switzerland, but with a far wider regional and temporal aspiration when it comes to its basic claims around the communication circuit of the book. Janello – referring to a current value chain-oriented way (from business studies) of looking at it as opposed to Darnton's cultural history view that included also the flow of ideas – tries to identify in detail what publishers actually do[2]. Janello's corresponding account is based on an extensive Delphi study. According to this study what publishing houses do (at the time of the study: 2007) is the following:

- to discover content;

1 Robert Darnton, *What Is the History of Books?*, «Daedalus», 111 (Summer 1982), 3, pp. 65-83, cf. particularly p. 68.

2 Christoph Janello, *Wertschöpfung im digitalisierten Buchmarkt*, Wiesbaden: Springer Gabler, 2010.

- to evaluate and select content;
- to edit content;
- to bundle content;
- to finish content as a book in a database;
- to contribute (together with other printers [see above!] to the printing of books, to prepare and keep in store eBooks (together with other players);
- to provide up-front financing;
- to engage in marketing and branding.

As an additional activity, trading and marketing rights were also part of the result of the Delphi study; for reasons of simplicity, however, I will not follow this up here because it is not connected to make a book available in its original form on its market of origin. As an aside, it can be mentioned that the German word for 'publisher/publishing house' is etymologically connected to the up-front financing task ('Verleger/Verlag'), whereas the Italian term is connected to the editing of content ('editore/casa editrice').

Janello's result has been derived using empirical methods – and for the situation in the early 2000s. Michael Bhaskar's aspiration is higher: he wants to analyse what publishing is for all performances for which the English-language term 'publishing' is used; inspite of the completely different etymologies (as mentioned) what is referred to by ´publishing´ in the English language is very close to what is referred to by the German words 'verlegen / Verleger' and the (not mutually related) Italian words 'pubblicare / editore'; an example for the extension of published goods that works in all three languages would be 'Spieleverleger / editore di giochi / games publisher'. Moreover, Bhaskar wants to cover all stages of the publishing history with his analysis. And he uses a predominantly hermeneutical approach to achieve this, rather than an empirical one. According to him, publishing is:

- to select contents [Michael Bhaskar calls this *filtering*];
- to give these contents the appropriate form (in a wide sense of the word) for dissemination: *framing* [...];
- to make – not least, but not only by framing – sure that the contents get widely disseminated: *amplification*[3].

3 Michael Bhaskar, *The Content Machine. Towards a Theory of Publishing from the Printing Press to the Digital Network*, London: Anthem, 2013, cf. particularly pp. 103-136.

The context of publishing, including the motivations for wide(r) dissemination of content (e.g., but not necessarily commercial ones, they can also be pro bono) is formalised in Bhaskar's theory in the form of so-called *models*. An important insight is Bhaskar's statement that «[...] publishing is always economic, if not [necessarily, ndA] profit oriented»[4]. This is the reason for him to take the account of his models as the place to introduce the element of risk to publishing – economic risk is the most obvious instance, but there are also content-related risks. This wider notion of risk has its more hands-on or naïve equivalent in the constitutive up-font financing by publishers in other approaches. It is possible to juxtapose the accounts of Janello and Bhaskar on what is publishing without contradictions; this is how this would look like:

BHASKAR	**JANELLO**
filtering	
	to discover content
	to evaluate and select content
framing	
	systematically missing: decisions concerning the framing
	to edit content
	to bundle content
	to finish content as a book in a database *(very contemporary ...)*
	to contribute to the printing of books, to prepare and keep in store eBooks (together with other players) *(very contemporary ...)*
amplification	
	to engage in marketing and branding
	to trade and market rights
models	
	to provide upfront financing

With filtering, framing and amplification (all, as mentioned, according to models) as the postulated key activities of publishing, Bhaskar, with immense effort and an impressive selection of analysis examples, presents evidence that these key activities do not only capture current

4 Michael Bhaskar, *The Content Machine*, *Ivi*, p. 138.

book publishing, but also other forms of publishing (e.g. games publishing) as well as all stages along the publishing history (at least from the times of Gutenberg on).

Bhaskar wonders, how publishing realising those key activities could be described as an overall system. He assesses that this is not satisfyingly possible in forms like those proposed by Darnton and Janello previously, a (communication) circuit or a (value) chain. He draws on ideas by Latour[5], instead. Following Latour, publishing can be seen as a mediating actor-network with 'intermediaries' (with a wide scope of agency): «paper, presses, capital, accounting ledgers, associations, corporate bodies, wagons and steamships, buildings, colophons on book spines among many other possible actors all have efficacy in the network». Some of the intermediaries are mediators in the sense that they «transform, translate, distort, and modify the meaning of the elements they are supposed to carry»[6]. This is admittingly not maximally clearcut and not immediately operationalizable and it cross-classifies also with respect to the nature of the nodes of the postulated network, but certainly provides, among other aspects, for the fact that filtering, framing and amplification can in fact not sensibly be attributed to single steps in a circuit or a chain. It also provides (therewith?) for the fact that products of publishing are 'hybrids' in the sense that they touch different areas of knowledge and activity, symbolic, economic, technological, and object-based[7].

Which elements of the identified key activities constitute the irreducible core of publishing?

We know that not a few of these key activities, at least in some cases, are conducted by AI systems or a least with the help of AI systems already. With a normative twist, we had said that we do not want to see a step that can be fulfilled by an AI system or with decisive help of an AI system as part of the irreducible core of publishing. Considering what AI systems currently used in publishing can do in a satisfactory

5 Cf. Bruno Latour, *Reassembling the Social. An Introduction to Actor-Network-Theory*, Oxford: Oxford University Press, 2005, according to Michael Bhaskar, *The Content Machine*, cit., pp. 134-135.

6 Bruno Latour, *Reassembling the Social*, cit., p. 39, according to Michael Bhaskar, *The Content Machine*, cit., p. 135.

7 Cf. Bruno Latour, *Reassembling the Social*, cit., according to according to Michael Bhaskar, *The Content Machine*, cit., pp. 134-135.

quality on the one hand and the accounts of Janello and Bhaskar of what publishing is in its core on the other, it can be postulated that the irreducible core of publishing activities is the following[8]:

- to develop a recognisable publisher's identity, possibly in connection with a marked, comprehensibly, or at least perceptibly coherent set of already published content (this relates to the context / models);
- to (actively) discover and identify further corresponding content;
- to evaluate and select 'candidate' content (it is true that, for easy cases and preselection, there have been supporting tools for some time [e.g. LiSA by Qualifiction][9]);
- to take comprehensive decisions:
  - ◊ concerning its target group-oriented processing / 'framing' of the content;
  - ◊ concerning the target group-oriented marketing for the product (it is true that, for easy and not decisive cases, 'marketing automation' tools are already available [e.g. ShimmrAI][10]).

The first one of these bulleted aspects, the one that concerns a publisher's identity, is one that is not explicitly mentioned by Janello nor by Bhaskar – it is, however, indispensable, as an anchor point for selection decisions (for all sensible prompts in the case of general LLMs, if you wish); the determining of the target group of the products can be seen as a part of the necessary pre-determinations.

From a recent (August 2025) own experiment with the use of GPT-5, the insight arose, however, that the requirements for creatively targeted and marketed publishing products must be rather high to keep on claiming that AI cannot be of considerable help for taking decisions on target group-oriented framing. If for my prompt – without further context! – 'Put yourself in the position of a publisher. The project is about creating a photo book on Himalayan expeditions targeted at young post-materialist professionals in Germany. What would you recommend in terms of format, paper quality, layout, price, distribution channels, etc.?' the following excerpts:

8 Value steps/activities for which we do not see dedicated systems and applications of general systems yet, I obviously treat in the same way as steps with unsatisfactory results.

9 See the website <https://www.qualifiction.info/lisa/lisa-f%C3%BCr-verlage/> (last accessed: 13 October 2025).

10 See the website <https://shimmr.ai/> (last accessed: 13 October 2025).

- [...] Paper quality: Matte coated or high-quality uncoated paper (170-200 g/m²) – avoids glossy 'coffee-table cliché' look and feels more authentic, tactile, and contemporary; FSC-certified or recycled paper is essential to align with the values of post-materialist professionals who care about sustainability [...].
- Layout: [...].
- Typography: a clean sans-serif for body text paired with an elegant serif for titles, creating a modern yet timeless look [...].
- Distribution channels: [...] Outdoor & lifestyle brand partnerships (Patagonia, Globetrotter, Vaude) [...].

and my following refining prompt 'What about a digital version? And possible companion products?':

- Companion products / Print&Art: [...] Poster series (panoramic mountain shots): €29-49. [...].
- Companion products / Collaborations & Social Impact: [...] Partnerships with outdoor brands (Patagonia, Vaude, The North Face) for co-branding or limited Editions; Tie-ins with NGOs (e.g., part of proceeds going to Himalayan education, climate projects, or Sherpa communities) – crucial for a values-driven audience. [...].
- Strategic Positioning: [...] Experiences: foster community and cultural resonance; Partnerships/NGOs: build authenticity and purpose.

do make sense (on the basis of my knowledge of the industry and of marketing, acquired over decades, I can confirm they do ...), then AI seems to come closer to publishing proper by the version of the large language models ... Of course, one could say that the framing settings and product policy measures proposed by the system would possibly not be creative enough to make the product instantly successful on today´s marketplace – knowledge and competencies in book marketing departments are on high levels. Plus, sure, I have not followed up the prompting (yet) to really take away work from a publishing house employee. But certainly, we see first professional run-of-the-mill settings and measures for a run-of-the-mill product without major surprises ('photo book on Himalayan expeditions targeted at young post-materialist professionals in Germany'). And is the book market not consisting of a plethora of run-of-the-mill products, run-of-the-mill campaigns? For all those behind such products and campaigns, it looks as if the air could get thinner quickly.

AI-supported and not AI-supported steps hand in hand: the system of publishing as cognitive assemblages

Humans using AI systems entered the considerations in the previous in the form of the criterion, if publishing steps can or cannot sufficiently be fulfilled by AI systems or humans in a sort of a dialogue with AI systems (with AI systems in a decisive role), respectively. Moreover, in the context of quality control, the prevention of particularly malicious mishaps or the violation of legal constraints, as well as ensuring what is seen as creativity, human-in-the-loop architectures are frequently mentioned as a likely typical – and a comforting one, for the moment – solution in many industries and application cases. This is also true for the publishing industry. Supplementing Latour's line-up of nodes in his publishing-as-a-network proposal by AI as an additional node would not accommodate for the complexity of the situation because in many different subcontexts of publishing there could be AI systems or humans with supporting AI systems. Is there an alternative approach to model the various combinations of algorithms and humans in the system of publishing in the age of AI? With instances of what N. Katherine Hayles calls cognitive assemblages, there is.

Nancy Katherine Hayles[11] holds that machines show cognition, as – according to her – do basic forms of life. According to her, humans do have a special role, though, in taking over responsibility for other species and the planet. When a human works together with entities with cognitive abilities, in this case machines, Hayles calls this a cognitive assemblage. Books, their production and their reception – as parts of cognitive assemblages which she postulates already in cases that are not as obvious as making use of machines in publishing – form the eponymous world of what she calls 'postprint'. For Hayles, the impact of 'postprint' with all these cognitive assemblages is as fundamental as Gutenberg's invention. Hayles' thoughts allow for a generalisation from human-in-the-loop workflows/subsystems – that is the term used also in the publishing workshop language – to cognitive assemblages with 'human-in-the-loop' as well as 'algorithms-in-the-loop'; publishing can then be modelled as an actor-network with cognitive assemblages in the role of (some of the) mediators.

11 Nancy Katherine Hayles, *Postprint. Books and Becoming Computational*, New York: Columbia University Press, 2021.

Excursus: one important reason why human-in-the-loop approaches are needed – a recent incident

In the introduction, I have mentioned that the text generation examples frequently given and discussed as contributions to the use of large language models in publishing in some way miss the point – generating text is typically not the task of publishers. As a somewhat extreme instance of current AI's abilities to work with texts, it serves, however, as an instructive related use case. And that is why we collaborated with Springer Nature immediately after the publication of ChatGPT in late 2022. In spring 2023, we have started writing a scientific article with the help of ChatGPT in a French-German doctoral workshop.

On the basis of the experiences, we, in the winter semester 2023/24, authored a small book (in a series of books with around 40 pages to a predominantly non-scholarly audience), using Springer Nature's AI Book Designer pipeline (on the basis of the GPT version of the time) in a joined master seminar between Johannes Gutenberg University and Edinburgh Napier University. The book is titled *Young Professionals in Publishing. Expectations, Challenges, Chances – Nachwuchskräfte im Verlagswesen. Erwartungen, Herausforderungen, Chancen* and got published by Springer Nature in spring 2025! At the time, the text had to be edited heavily to convince the student authors as well as the Springer Nature editors, and ended up as something reasonably useful and readable in the marketplace. I have talked about our experiences in more detail in other places.[12]

Half a year after we had finished the editing work on the book and exactly at the time when it was published (in spring 2025), our concluding reflections on the question, if all this was any good, as it were, were framed in a broadened, somewhat disquieting way ... Two articles in one of Germany's leading newspapers pointed at problems in Springer Nature books that also had been written with the help of Springer Nature's AI Book Designer pipeline[13].

12 E.g. in *AI in publishing. Selected issues and a teaching project covering (a few of) them*, opening lecture of the guest professorship at Università Roma Tre (Rome, 23 April 2025).

13 *Woe AI Begins to Take Effect in Specialist Books*, «Frankfurter Allgemeine Zeitung», 2 April 2025; *The Bot in the Book*, «Frankfurter Allgemeine Zeitung», 22 April 2025.

The main subject of criticism in this discussion was the 2025 Springer Nature book *Advanced Nanovaccines for Cancer Immunotherapy* (150 €) and a core quote given from the book: «It is important to recognise that I can – as an *AI language model* [highlighting by the Author, ndR] – provide a general categorisation, that, however, you should turn to a medical specialist for an individual advice». Moreover, in the first «Frankfurter Allgemeine Zeitung» (FAZ) article, Debora Weber-Wulff, a plagiarism expert, was quoted to criticise questionable references in the book, e.g. modelling studies or historical accounts without scholarly ambition instead of sound scholarly sources. Particularly since, according to their current policy, Springer Nature's products have to have human authors only (precisely because only they can take responsibility), this is a striking example for the necessity to have humans in the loop – not only, but certainly not least in editing/quality control.

How did this rather embarrassing story continue? From the beginning of April 2025, the book was not accessible any longer on the website of the publisher; Springer Nature's press department issued the statement: «Together with the author, we are checking the sentence that refers to AI». And in mid-April, the book was withdrawn; according to Springer Nature's press department, it had violated the publishers' guidelines on the use of artificial intelligence and its transparent declaration and showed «inconsistencies in some references».

A quick look at consequences and needs for action

Bringing together phenomenological impressions from the current publishing world with theoretical insights by Janello, Bhaskar (with Latour ...) and Hayles, this is a likely scenario: what we will see in publishing, certainly in beyond run-of-the-mill publishing, in the next few years will be diverse networks of actors, some of which are mediators, some will be cognitive assemblages of humans and machines/AI systems, responsible for filtering, framing and amplification. In addition, there will be humans in determining the identity of the publishing house and the target group of the products as well as cognitive assemblages with relatively more responsibility for humans to make decisions on framing and marketing.

It has to be noted that – in this terminology – cognitive assemblages will of course not only shape publishing, but also other segments of the

book world, primarily authoring (writing with the help of AI), but also reading (with translations, abstracts, reformulations done on the fly by machines on demand). I will go into a bit more detail for the higher productivity of the publishing industry that will be the most immediate result of the diminishing share of human value creation in publishing tasks through cognitive assemblages. Assuming that there will be no immediate consequences on the employment in publishing with respect to headcount, this means, there will be more (and also more complex!) publishing output. I will capitalise on this particular consequence here.

Higher productivity: threats

The content 'overproduction' lamented about in the face of more than e.g. 80.000 new titles every year in Germany for a while already will, as one plausible effect of an increased productivity, most likely rise and hence the potential disorientation of prospective customers.

A systematic consequence that could be seen as a promise of the new circumstances following one of the mainstream AI discourses could be the publication of ever more targeted content for ever smaller target groups, also marketed in an (aggressively?) targeted manner. We could see books for intentional target groups down to size one, as individualised book content like in 'individualised medicine', as it were. This, however, means: 1) additional filter bubbles and echo chambers as possible undesired side effects because the probability that two people share reading material and possibly their take on it gets arbitrarily small; 2) it has as an effect in the form of an aggravated systematic disadvantage for books in the competition between media formats for the attention of audiences because the opportunity to share views on new media content with friends and family is considered an important reason to prefer streaming series rather than reading books with already today a comparatively small print runs and selling figures[14].

14 Cf. *Buchkäufer - quo vadis? (Study for Members of the Börsenverein des Deutschen Buchhandels Association)*, Frankfurt: Börsenverein des Deutschen Buchhandels, 2018, available online: https://www.boersenverein.de/markt-daten/marktforschung/studien-umfragen/studie-buchkaeufer-quo-vadis/ (last accessed: 13 October 2025).

Higher productivity: opportunities

An alternative consequence of increased productivity is the availability of more resources for an essentially unchanged number of products, at not considerably higher costs. In this scenario, the initial AI investment can be treated as a 'quantité négligeable'. Cognitive assemblages might make complex, interesting products finally feasible on a larger scale.

To give an example: to enrich, 'enhance' texts with time-based and interactive media like audios, videos, animations, interactivities/simulations, narrative passages in different versions under the control of the reader, etc. had technologically been made possible for the consumer market in the 1990s, with multimodal, multimedia CD-ROMs. Among them, there were simple products with witlessly added videos 'the size of a stamp and the speed of a postman in a coma', as one saying at the time went, but there were also beautifully crafted, but expensive and hardware-hungry products (particularly by Voyager and Dorling Kindersley). They were taken as the foretokens of the future of the book as a multimodal entity, text-based, but otherwise without media-oriented limits. This did not happen, at the end of the 1990s the product category disappeared, with a few remaining niches in education or marketing. With the advent of the iPhone (2007) and particularly the iPad (2010), it became possible to develop very similar multimodal products for digital handheld devices more easily.

Again, this was seen as the moment ('now really') in which the future of the book as a multimodal entity will take off. Again, it did not happen, again with a few niches remaining. An interesting fact here is that *grosso modo* the amount of interactive, multimodal content sold on CD-ROM in the 1990s for, say, 50 € was rather 5 € as an app in the 2010s – with no decisive sales effect (still too expensive?). As reasons for the fact that a doubtlessly innovative product category that theoretically ticked every box media theorists, entertainers, academics and educators had opened did not 'work' on the market place, two main ones can be proposed (both to my knowledge not empirically evidenced up to know): 1) people don't find these products really attractive although they tick a lot of boxes or 2) people are not ready to pay the prices that have to be set and/or the number of available products (accompanied by generic PR and marketing) is not large enough for this product category to be seen as one to be taken seriously. I will not discuss hypothesis 1 here; if there is truth in hypothesis 2 – multimodal products had and still must

be largely handcrafted with only slowly evolving standards and appearing tools and are therefore expensive –, then AI or, more precisely, cognitive assemblages in publishing houses will be a lever to change this. With the help of AI, we might finally see more products like these (figures 1-2).

Figure 1. Al Gore's 'multimodal' book Our Choice (2011)[15].

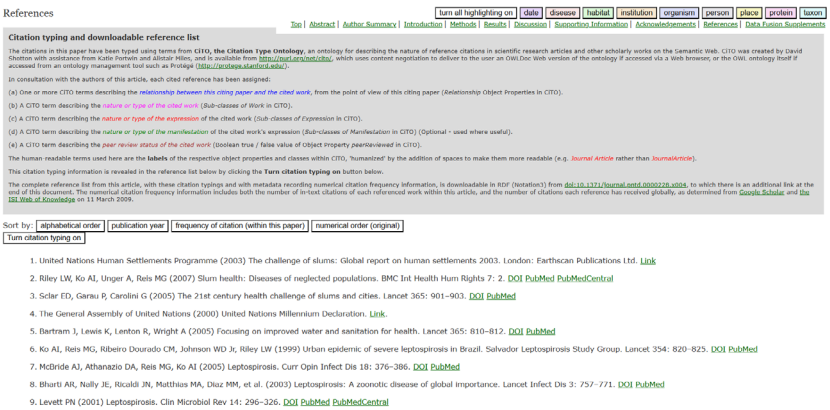

Figure 2. Shotton [et al.]'s (2009) proposal for typed citations as an element of multimodally enhanced science articles[16].

15 Source: excerpt from the contemporary marketing material for the product.

16 Source: Reis [et al.], *Impact of Environment and Social Gradient on Leptospira Infection in Urban Slums* (2008) according to the work of Shotton [et al.], described in *Adventures in Semantic Publishing: Exemplar Semantic Enhancements of a Research*

What the publishing industry can do

We see publishing as a decisive force for healthy, rational, democratic knowledge societies. With respect to directing consequences of an ever increasing use of AI in publishing into desired directions and to sustain the publishing industry and particularly to keep the qualified and motivated people working in it in the industry, these are some of the measures that could be taken by the publishing industry, beyond enabling a larger number of attractive multimodal publishing products (see above):

- proactively develop job profiles in the direction of (human) 'core-core' competences or attractive 'human-in-the-loop' systems/cognitive assemblages, respectively – to keep on attracting qualified and motivated young people;
- advocate copyright (however: with a sense of proportion) – to protect existing intellectual property assets, to incentivise strategic authoring and publishing efforts and to keep quality standards high;
- support European large language models – to reduce the dependency from AI offerings from abroad to gain geostrategic resilience and possibly see better quality and a better culture-fit;
- advocate sensible AI regulation – to fence off potentially dangerous competitors from less regulated areas and to cater for consumer as well as employee trust.

Let me add one more general remark concerning the level of employment in the book industry. We can't do anything about the fact that the majority of publishing professionals centrally deal with texts in one or the other form – and that this fact means that the danger that jobs will get replaced by AI is high in comparison not only to people dealing e.g. with videos, but particularly to people that directly deal with humans or animals. Following a recent Microsoft Research study[17] and having employment in publishing in the back of our minds, the sector should make sure that central tasks (among them some of the

Article (2009) [DOI: 10.1371/journal.pcbi.1000361]. Screenshot from Shotton [et al.], product prototype in the mentioned publication.

17 Kiran Tomlinson [et al.], *Measuring the Applicability of Generative AI to Occupations*, 2025, available on Microsoft website: <https://www.microsoft.com/en-us/research/publication/working-with-ai-measuring-the-occupational-implications-of-generative-ai/?msockid=1386b0b96e7265dc1675a5ea6f72206459> (last accessed: 13 October 2025).

ones mentioned previously, e.g. developing attractive and complex multimodal text-based products) move more and more to what a journalist has called the 'fairy dust corner', i.e. to for example 'Create artistic designs/performances', 'Interpret language/cultural/religious info' or to 'Write artistic/commercial material' (p. 8).

Conclusions

Also for periods in the publishing history, the question if certain performances are a constitutive part of publishing can be asked. The search for the irreducible core of (quality) publishing can be seen in this tradition. The argumentation in the previous was meant to give evidence that it is productive to base considerations on publishing and technology (in this case: AI), particularly the consequences of technological developments on the publishing sector, not only on the latest developments popping up at a certain time, but on a deeper understanding of publishing. Because of this deeper understanding, the following irreducible core of (quality) publishing can be identified:

- to develop a recognisable identity of a publisher;
- to (actively) discover and identify content and (decreasingly)...
- to take comprehensive decisions concerning its target group-oriented processing / 'framing' and product marketing.

We must expect cognitive assemblages – vulgo: publishing set-ups implementing human-in-the-loop (and of course algorithms-in-the-loop) workflows – as the norm; they bring several consequences and needs for action with them. Among the likely consequences is a higher productivity that finally might make (cognitive assemblages) resources available for the book-based multimodal products that had been promised to us for a long time. Among the needs for action is the development of attractive job profiles as parts of coming cognitive assemblages and the advice to move efforts to the 'fairy dust corner' – my interpretation of that is not least: away from dull logistics and more-of-the-same genre products – whenever possible. This is what was meant by quality publishing – everything that will be done by AI or in cognitive assemblages with a high machine share will at least start at dull logistics tasks and concerning more-of-the-same genre products.