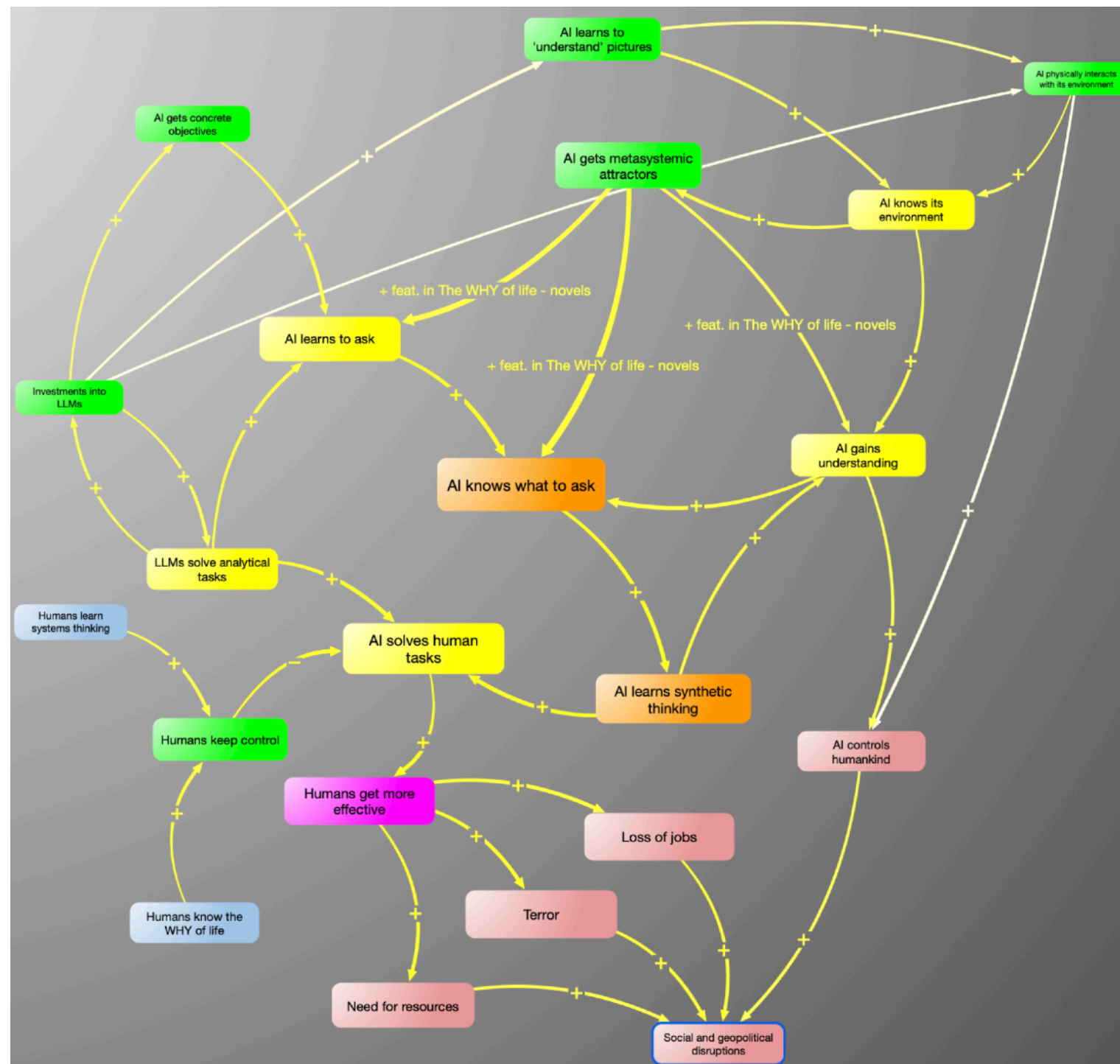




AI vs. Systems Thinking

SYSTEMS THINKING AND MODELLING IN THE AGE OF EMERGING AI

Consideo - Kai Neumann



Qualitative cause-and-effect model addressing the question of how AI will continue to develop through its own dynamics and what role systems thinking and systems modelling may play in this development.

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Summary

Basically, it would be quite simple:

Today's impressive AI based on LLMs clearly surpasses us humans in analytical thinking.

When it comes to synthetic thinking - as in this paper - AI lacks an understanding of meanings and, consequently, of goals that help it to ask the right questions itself.

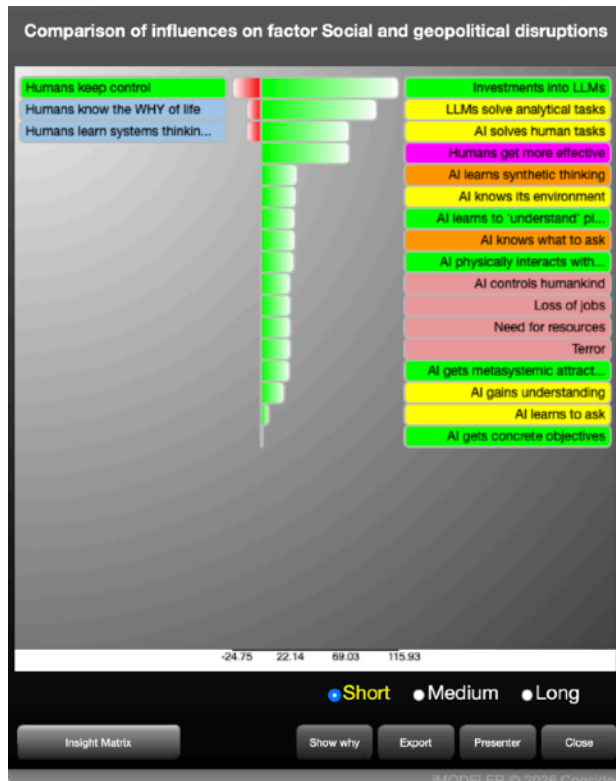
Systems models are crucial for us humans when it comes to thinking synthetically and finding superior solutions to our challenges.

Until AI can also think synthetically, the iMODELER for cause-and-effect modelling is the tool of choice - in combination with analytical AI.

But once "AI" has also learned synthetic thinking, we have a problem:

Our own models will then help us push back, uphold our personal goals and regain a degree of independence.

At the very least, our synthetic thinking requires a meta-systemic framework, such as the KNOW-WHY approach.



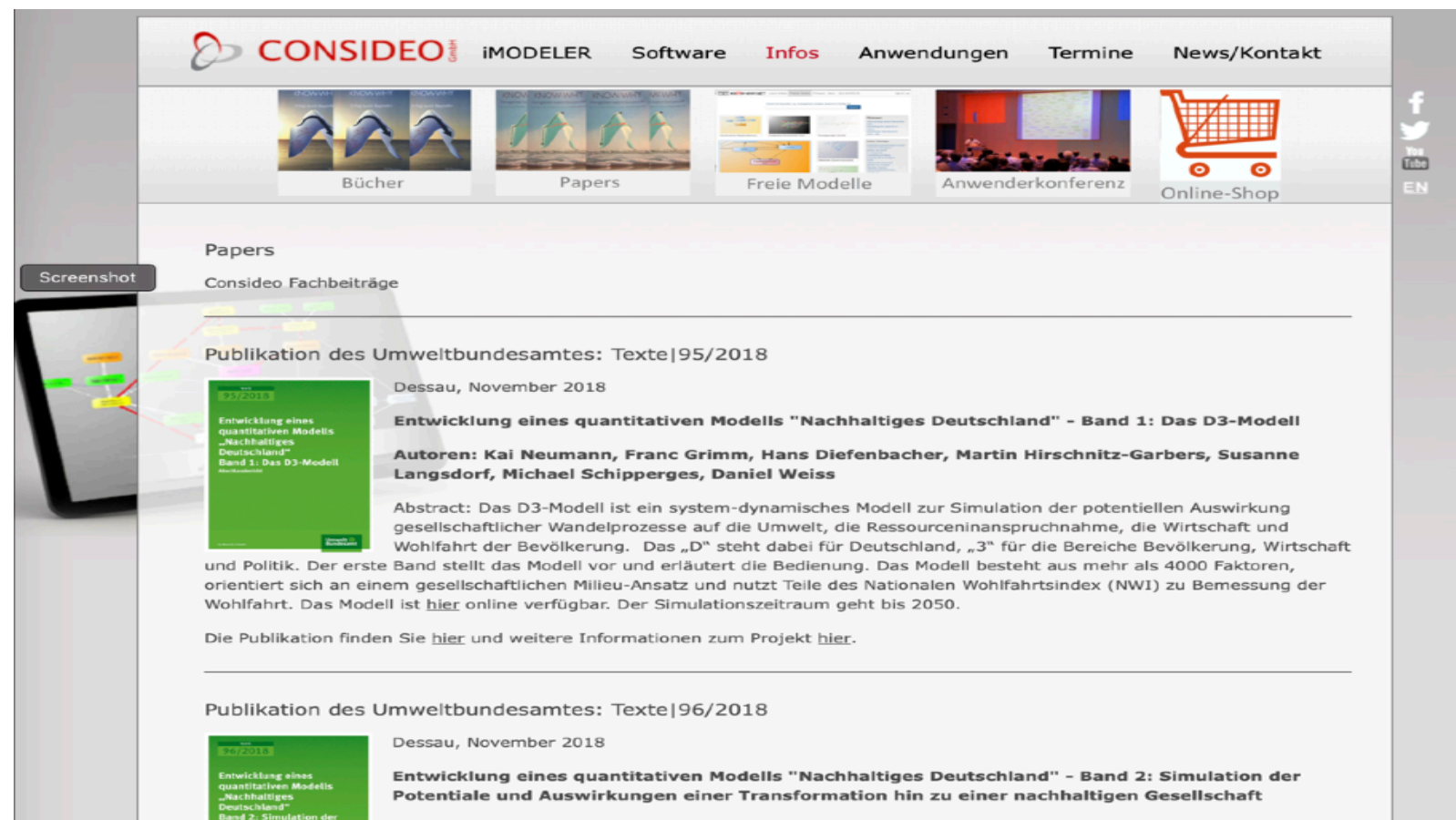
Systems Thinking and Modelling as a Counterbalance to the Unavoidable Developments of AI

The Grey Series

Studies seem not to reach policy-makers at all, are usually too specific for the general public, and are all too often perceived by other scientists as competition and therefore not taken up.

We can reach policymakers through the public, and for the scientific community we will continue to write official project reports and peer-reviewed articles. For the public, however, we want to offer an engaging format that gets insights and the resulting actions to the point - our "grey series", referring to the term "grey literature".

Large Language Models (LLMs) are currently (07/2026) producing remarkable results, seemingly answering many questions - including scientific ones - with ease and apparently citing their sources correctly. But



Screenshot of the Consideo website with links to the project reports and scientific publications available there (www.consideo.de/papers.html)

where are the limits, and how long will they remain?

And what role does the iMODELER play as perhaps still the leading tool for qualitative cause-and-effect modelling? Do we still need such a tool, or will the answer simply come directly from AI?

Or: How can AI's analytical thinking, with the help of the iMODELER, enable us to think synthetically, how long will this remain a human prerogative, and what comes next?



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This grey paper is more personal than the others and was therefore written by me alone: I call myself an AI “expert”, but only for marketing purposes ;-) Thirty years ago, I worked on automata, then on expert systems and neural networks. The topic at the time was “Managing Complexity - Humans vs. Machines”. One essential element was the KNOW-WHY approach, which leads to solutions by asking WHY (...). Today, through ilsa Consulting, I teach this way of thinking, including in workshops (www.ilsa.de).

The iMODELER integrates KNOW-WHY.NET to provide “intelligent” suggestions for influencing factors from existing models. Shortly before LLMs became prominent, I was still working on syntactic text recognition to convert texts automatically into cause-and-effect models. And in a project for the German Environment Agency, I once examined the dystopian potential of AI (<https://www.imodeler.de/a/ConsideoPaper-IKT-Dt.pdf>).

These potentials are well-founded and not simply assertions driven by some agenda. I am quite certain that AI lacks only a small step before it becomes extremely powerful. Presumably, what is missing is what I conceived for this purpose thirty years ago.

Today, two novels of mine (The WHY of Life) explore the idea and its potential without my actually revealing it. The novels ask whether it makes sense at all and whether it can still be prevented.

The AI Expert?



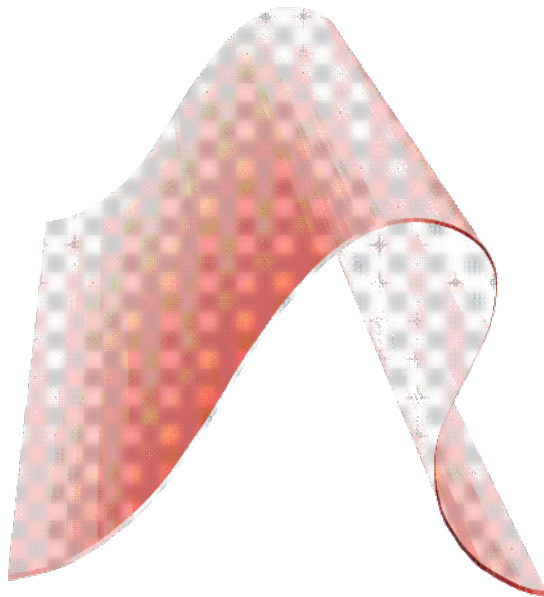
Kai Neumann, certainly less of an AI expert than many others who would never call themselves one.

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Development of AI



The KNOW-WHY wave as an iconographic representation of an event space. Something develops as it moves up the wave towards greater success. Without development, the wave moves on. And too much development without integration causes something to tumble down the wave. Where do we stand with AI today, and where is it heading? These are questions and approaches also addressed in ilsa Consulting workshops.

An old working definition of mine describes intelligence as the ability to adapt successfully to changing conditions (in relation to a goal). Accordingly, today's LLMs are of course intelligent, even with their energy-intensive brute-force statistics applied to vast quantities of text, because their enormous store of experience enables them to respond successfully to almost any question we ask.

However, AI is not yet able to combine things creatively. The algorithm for doing so is actually remarkably simple, but it requires a goal (in the sense of an attractor) and understanding. The first startups are taking new approaches to understanding, including LeCun's AMI Labs, Murati's Thinking Machines and Kausable AI from Germany. At present, I doubt that this already creates a mind in the machine. But sooner or later it will happen. We will be disillusioned to realise that we humans, like an LLM, also do a great deal of recombining; that our understanding, awareness and values are in fact limited; and that a machine optimised in this respect by us or by itself could be vastly superior to us. We will then have to find our new role. "The WHY of Life" describes this development.

At present (07/2026), an AI could develop the model on the first page of this paper only if someone had already published these arguments somewhere. Perhaps that is the case, and I should have asked AI to find everything available on the subject. AI could do that better than I, or probably any other scientist. But an AI cannot currently ask this question itself, pursue an overarching goal and understand what it truly means as a consequence. Also still absent is synthetic solution-finding, in which questions are asked systematically and in part creatively at various points, and the answers are combined with others to form a new insight that exists nowhere else but makes sense.

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The iMODELER and AI



Paper on integrating AI into the iMODELER: https://www.consideo.com/files/consideo/pdfs/papers/eng/iM-AI_Description_v2.pdf

The iMODELER visualises relationships of any scale. Using bionic shifts in perspective, it always examines what leads to a factor and what that factor leads to. This is a very powerful representation of knowledge.

AI can also represent known relationships. In fact, AI can even create iMODELER files: for example, we can simply ask ChatGPT to create an iMODELER model on any topic and write it to an .imm file (an open XML format). This also works with quantitative models and formulas if we first provide AI with a good file from which to learn the formulas.

In the paper linked on the left, we also describe how the exploratory KNOW-WHY questioning technique enables AI to create a set of causal relationships on a topic that goes beyond an AI-generated finished model. This is already a first step towards synthetic thinking, but understanding and the ability to search for it independently are, of course, still missing. A feature still unique to the iMODELER (!): the Insight Matrix calculates the logical conclusions arising from the relationships.

For us humans, all this currently means that the combination of iMODELER and AI can help us arrive at solutions through synthetic thinking - provided we ourselves have understood that this is what we are looking for ;-). Many scientists do not dare to conceive new solutions (abductively) without empirical evidence (inductively), and many managers do not dare anyway (...). Many modellers who create only descriptive models are also likely to be frustrated.

But even if AI soon thinks synthetically by itself, we should be able to do so as well. We should be able to trace knowledge and its effects ourselves, and we must continue to teach our children to ask their own questions so that they can find good solutions. Otherwise, we are finished.



SYSTEMS THINKING AND MODELLING IN THE AGE OF EMERGING AI

When marketing the iMODELER, we - like other providers of decision-support systems - have to recognise how few people are willing to make the effort to go beyond best practice from the past.

The effort of thinking for oneself seems even greater when AI supposedly does it for you.

References and Links

The Consideo paper is linked above. Here, only a reference to Parts 1 and 2 of the novels "The WHY of Life", available as paperback and e-book (German/English) from standard booksellers.

About Consideo

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Consideo's vision is a better world. Our mission is to help people understand interrelationships. We work with the award-winning iMODELER software for business, research, policymaking and private individuals.

With the KNOW-WHY.NET platform, we provide collective causal knowledge.

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