



Smart creativity: Can machines be creative?

Artificial intelligence (AI) is changing the way we work and live, but **can machines truly be creative?**

This presentation explores the role of AI in creativity and its impact on the advertising industry.



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Before starting... a disclaimer

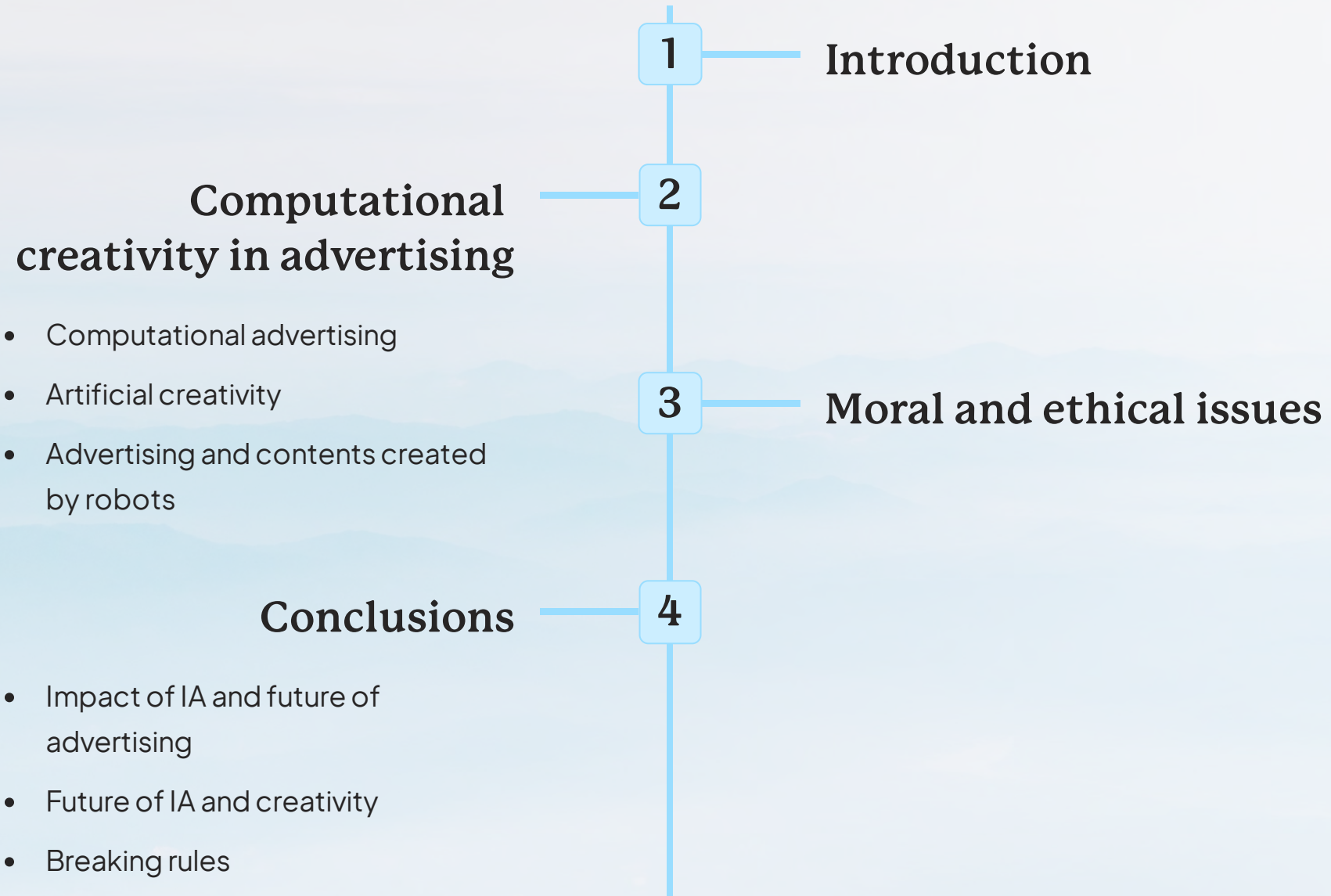
This presentation is based in a book chapter:

Smart Creativity: ¿Pueden las máquinas ser creativas? Martínez-Sáez, J., Piqueras, R., Millán-Jiménez, M. (March 2023, accepted for publication)

Although this book chapter was finished two months ago, everything is moving so fast that some of the examples and tools may sound outdated.

I hope that the reflections I am going to put forward today will be useful and sound inspiring.

Structure





1. Introduction

This is a revolution

Can we compare human way of thinking with machine way?

Turing, A. (1950). *Computing Machinery and Intelligence*

Ross, A. (1984). ***Controversies** on Minds and Machines*


Cyberspace as an extension of human capabilities vs. risks

1. Introduction

But can we compare them in creation or coming up with ideas?

In the industry, despite the initial enthusiasm, there is a vindication of the power of ideas and creativity, the human ones...





2. Computational creativity in advertising

2.1. Computer advertising

Programmatic Advertising

Automation and commercialisation of online **ad placement**.

Uses machine learning tools to exploit user data and, with a real-time bidding system, automates ad buying operations between brands (or their agencies) and online media
(Malthouse et al., 2018)

Market Analysis

Prediction of **insights** and **new consumer habits** through the interpretation of market research **data**.

It is fast, accurate, dynamically identifies consumer behaviours and minimises risks.

Used for launching new products, predicting reactions to controversial actions, adapt messages based on the study of users' personalities or improve brand awareness.

Language Recognition Tools

Tools for speech and image recognition for improving **UX**.

Capable of extracting very **valuable data**.

Chatbots and voice recognition systems.



2.2. Artificial Creativity

Wagensberg's (2017) three human processes of **creative thinking**:

- Intuition by **analogy**: take inspiration from an existing idea
- Intuition by **combination**: associate two or more existing idea.
- Intuition by **extension**: evolve on something known.

Since *Ex nihilo nihil fit*, or nothing comes out from nothing (Steiner, 2001), a greater mind with more knowledge and experience should **create better**.

2.2. Artificial Creativity

Boden (1998) proposes that AI can develop any type of creation process (combinatorial, exploratory or transformational) but points out that **exploratory is better for machines.**

Jennings (2010) argues that **creativity requires self-motivation** and evaluative autonomy, a **capacity for judgement** that a machine alone is unlikely to have.





2.2. Artificial Creativity

Colton & Wiggins (2012) accept that machines could have auto-motivation and self-judgement, and accuse humans of **not embracing computational creativity because they are jealous.**

For them, when computers achieve true creativity, the **final frontier** in the evolution of AI will be reached.



2.3. Advertising and content created by robots: some tools and cases

In 2016 AI wrote the first fiction book to win a literary contest. Now, **Quill** is currently writing journalistic content and **GPT-3** is able to write stories based in one starting sentence.

Dramatron is an interactive co-authorship script writing tool

MusicLM is a model generating high-fidelity music from text descriptions

Markcopy and **Copy** are SEO content generating tools, also creating copies for marketing and advertising



 YouTube



Lexus ES - Driven by Intuition

Lexus presents ... A film written by Artificial Intelligence. Starring our Lexus ES 300h! More information about this model: - NL:...

Script completely created by Watson, the IBM AI system.

Watson analysed 15 years of car and high-end product advertisements awarded with a Lion at the Cannes Film Festival for their creativity, along with videos from the Unruly portal, to find out which combinations of images elicited the strongest reaction from viewers.



Content curated by robots

Netflix has for years relied on **data analysis** for its **programming and recommendation strategy**, based on previous interactions and known preferences of its users, which allows it to create and promote its own business line of original productions (Netflix originals) that responds to the interests and demands of its subscribers.

For the launch of its series *House of Cards*, they employed big data in order to create its own exclusive series based on users' tastes. Even in the analysis process, **the machine provided the choice of the artistic cast**, and targeted Kevin Spacey as main character and David Fincher as director.

3. Moral and ethical issues

1 Control and passivity

Data control by algorithms and AI has effects on cultural constructions and is **modelling behaviour**.

The more the algorithm simplifies our decisions and thoughts, the **more passive human beings become**. They settle into comfort in the absence of obstacles and resistance (Fernández-Vicente, 2020)

2 Popularity and personalization

Sagev (2019) points out that popularity works according to the principles of **behavioural homophily**. We generally have a tendency to see what the majority sees and to buy what the majority buys.

Machines offer us the information they consider to be interesting for us.

They can even **infer our emotions and personality** (Han, 2022).

3 Automated decisions and responsibility

Algorithms make decisions for us.

And this question contains unknown unknowns, because, as Cortina (2019) points out, it is one thing for humans to rely on technology to make decisions, but it is quite another to **delegate decisions to machines**.

3. Moral and ethical issues

1 Discrimination

AI can also perpetuate existing discrimination in society, as algorithms learn and reflect existing inequalities in the data they are trained on.

2 Fake news and deep fakes

Are potentially a source of deception of unsuspected scope (Campbell et al. 2022)

3 The fully autonomous machine

Possibility of fully autonomous machine behaviour.

This gives rise to a kind of ethics of AI ethics (Powers and Ganascia, 2020).

Are machines capable of discerning what is ethical in their behaviour?

4. Conclusions

4.1. Impact of AI and future of advertising



Increased Efficiency

AI will make marketing and advertising more efficient by allowing for personalised campaigns and reducing costs associated with human involvement.



Automation

Some tasks, such as email campaigns and customer chatbots, will be increasingly automated, allowing for 24/7 customer support.



Data Analysis

AI will allow to gather and analyze large amounts of data to gain meaningful insights into consumer behavior.

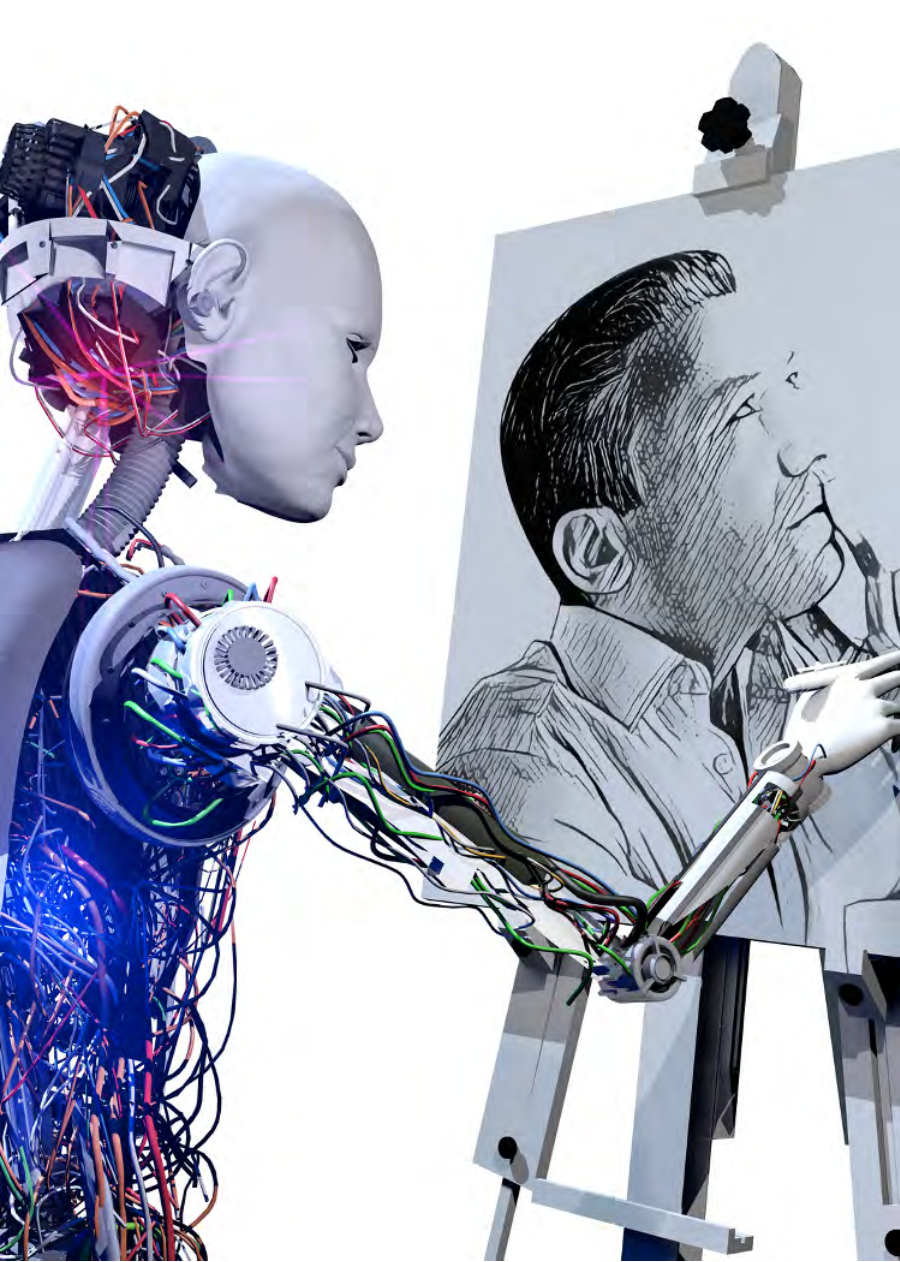


4.2. The future of AI and creativity

Creativity is conceived as a spontaneous and subjective process that is not linked to a logical or established pattern of behaviour.

In this sense, it is unlikely that a computer can become creative on its own.

But technological breakthroughs linked to machine learning are demonstrating that creativity is a field that can be studied and simulated through the use of algorithms and information processing.



4.2. The future of AI and creativity

The fact that machines learn, think, create and can be considered creative generates, on the one hand, **great hopes for a technological industrial revolution**, with promises of a multiplication of productivity and thinking capacities.

On the other hand, there are many who spread catastrophic prophecies in which the least that will happen is that machines programmed with powerful artificial intelligence models will do away with our jobs, or even **transform our brains into a secondary organ.**



4.3. Breaking rules

Wagensberg (2017) defines intuition consisting of "a gentle friction between what is already understood and what is not yet understood, between what is already observed and what is not yet observed".

We intuit and create by analogy or combination, but generally, when those ideas are truly relevant, we do so **against logic**, deliberately bypassing rules.

Software may be able to understand the world in terms of physical laws, but it can hardly possess a **holistic conception of this world, based on experiences, emotions, beliefs and cultural situations**.

It is true that, given the **impossibility** of the machine to **break the rules in a human way**, to let itself be led by intuition or emotion. AI is, once again, limited.



Although we are obviously witnessing a major revolution that will generate changes in many sectors, creative neural networks, do not seem to be taking our jobs.

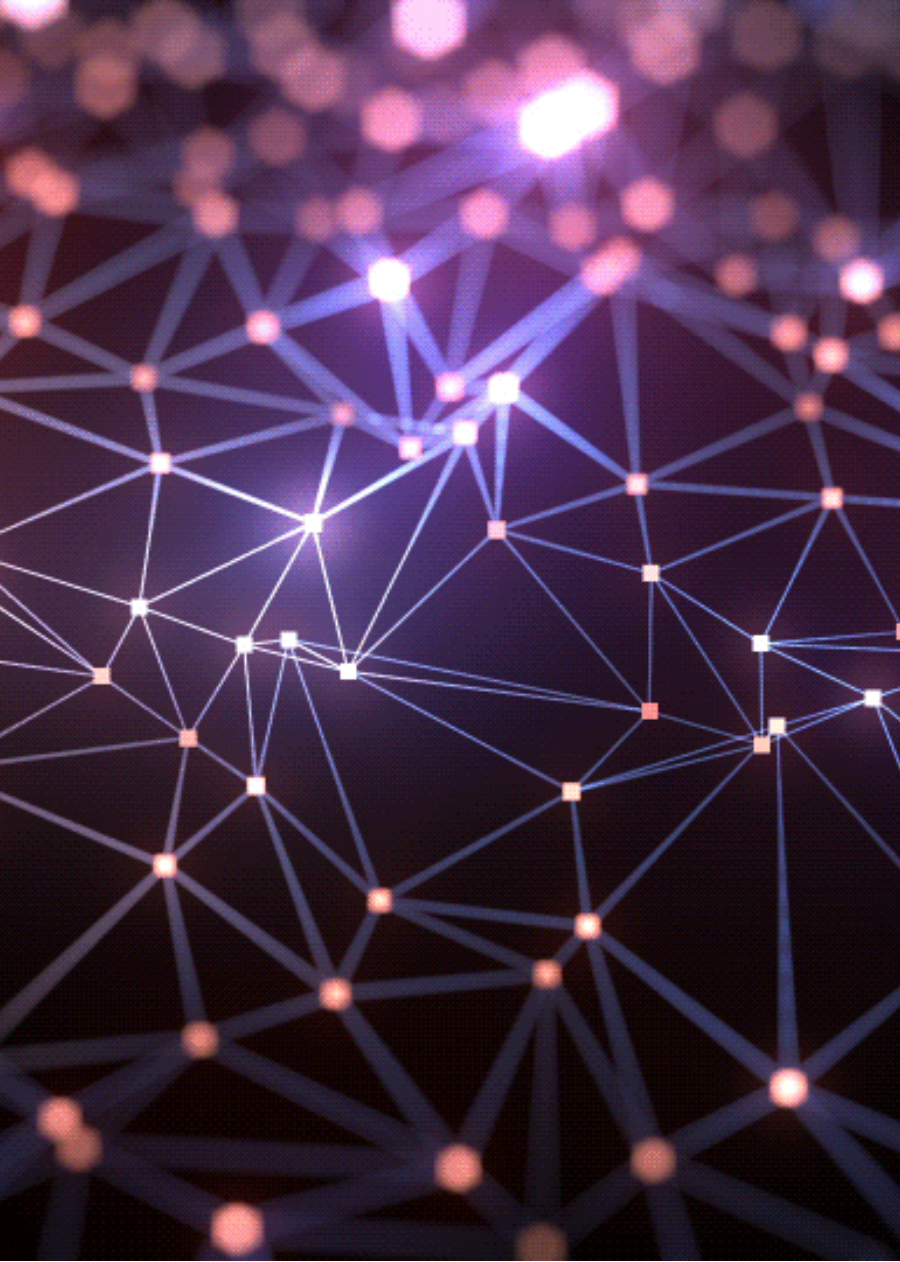
AI will provide us with **a range of capabilities that our own biological limitations prevent**, and **it will help us**, if we have not already done so, to integrate them into our workflows.

Although we must also admit that **much human advertising creativity is mediocre and stereotypical**, and **this could be done by machine** without our intervention.

But, for the moment, we cannot speak of computational creativity in purely human terms. If machines include disruption, or the ability to break the rules, they do so today because **a human has specifically programmed them to do so**.

We are in AI pre-history. So we should finish this presentation saying...

For the time being.



Thank you very much

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