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AI narratives model: Social perception of artificial intelligence

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ABSTRACT

Narratives surrounding Artificial Intelligence (AI) shape its societal reception, technological development, and regulatory framing. This article proposes a theoretical model to interpret these narratives, especially in the context of growing public engagement with generative AI technologies. The model is structured along three key coordinates: *apocalypse*, *assistance* and *transcendence*. Transitions between them are understood through two dominant narrative frames: the *Pandora's Box* frame (associated with loss of control), and the *Social Progress* frame (associated with the improvement of human life), each tending toward dystopian and utopian extremes, respectively. Based on this model, two questions are addressed: What types of AI stories predominate in popular culture? And do audiences actually align with them? To answer these, two empirical analyses are conducted. First, a review of the 300 highest-grossing science fiction films in North America reveals a rich variety of narratives across the entire spectrum, rather than clustering around opposing extremes. Second, focus group discussions with categorized audiences of varying levels of familiarity with AI technology show that they align progressively along the narrative spectrum: the *general public* tends toward apocalyptic framings, the *interested public* (in science and technology) focuses on assistance narratives, and the *engaged public* embraces improvement scenarios. This sequential distribution suggests a strong correlation between AI proximity and narrative positioning, with greater engagement associated with more positive —yet nuanced— views of AI. The model opens multiple avenues for future research, including the use of wider data sources, cross-cultural comparisons, longitudinal studies, tracking of narrative shifts, and focused analyses of more complex representations.

1. Introduction

Social perceptions and expectations around Artificial Intelligence (AI) are typically shaped by dominant narratives about the future, and by individual experiences with current applications (Royal Society, 2018). The booming of generative AI technologies —especially since the launch of ChatGPT— urges more than ever to examine public attitudes toward AI and to understand the prevailing images in the collective imagination, as both ultimately influence technological development and regulation (Cave et al., 2020; Royal Society, 2018). In this context, it is essential to consider the influence of mass culture on how AI is conceived by the public —particularly through mainstream media and science fiction depictions (Nader et al., 2022)—, as well as to gather new empirical data on public opinion.

Existing research on AI perceptions often addresses affective responses to AI in terms of *hopes* and *fears*, typically adopting a dichotomous approach (Cave and Dihal, 2019). Empirical studies, based on small samples of the public, have revealed that levels of concern tend to outweigh excitement (Cave et al., 2019). However, the growing public interaction with generative AI makes it essential to revisit public perceptions in the current landscape. This article proposes a new theoretical model to interpret AI narratives as part of the cultural contexts in which these perceptions are formed, moving beyond a binary polarization of highly positive or negative valence. In doing so, it examines dominant narratives about AI that circulate within popular culture, while also accounting for differences linked to varying degrees of AI engagement.

The theoretical model is grounded in interdisciplinary insights from science communication, science fiction studies, and the philosophy of technology. It introduces a triadic structure —with *apocalypse*, *assistance*, and *transcendence* as key coordinates— to map AI narratives, as well as directional trends along a spectrum either toward human replacement or empowerment. The model is then applied empirically in two complementary ways: (1) through an analysis of dominant AI depictions in blockbuster movies in North America, useful to examine

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whether popular narratives cluster around specific regions of the spectrum within this particular cultural setting; and (2) through focus group discussions with participants categorized into three groups based on their proximity to science and technology, namely: the *general public*, the *interested public*, and the *engaged public*. This second application employs a publicly available dataset —with protocols, transcripts and recordings— published by the Massachusetts Institute of Technology (MIT) (Denia and Durant, 2024), and serves to test the model's utility for interpreting how public perceptions of AI are distributed across the narratives spectrum.

While decades of research in public understanding of science and technology have examined the relationship between knowledge and attitudes (Durant and Evans, 1995; Miller, 1983; Royal Society, 1985), recent approaches have increasingly emphasized the role of public engagement (European Commission, 2008), understood here as the public's active interaction with AI and involvement in debates about it. Previous survey-based studies have explored AI narratives in relation to participants' technical knowledge and competencies (Sartori and Bocca, 2023), yet these efforts typically rely on literacy-based models of public understanding, more closely aligned with the deficit model (Irwin, 2014). As an alternative, this study includes a public engagement approach by considering individuals' interactions with AI rather than their level of technical knowledge, offering a novel perspective on how proximity to the technology relates to narrative positioning.

For clarity, the definition of artificial intelligence adopted in this work is deliberately broad, recognizing that conceptual boundaries are often fuzzy. It includes not only advanced systems like generative AI (e.g., ChatGPT), but also robots and intelligent agents that exhibit human-like qualities —such as speech and social behaviour—, as well as any form of human–machine interaction that results in altered intelligence or cognitive capacity, including hybrid forms like cyborgs. The aim is to capture a wide range of representations and user experiences, although a more restrictive definition could certainly be applied in future research.

The following section outlines the key conceptual components of the AI narratives model.

2. Elements of the model

2.1. Intelligent machines

The term 'Artificial Intelligence' has been criticized for suggesting that intelligence is a singular, homogeneous property, which may lead to problematic comparisons between AI and human cognition from scientific, technical, and philosophical perspectives (Dieguez, 2017). Historically, shortly after Alan Turing posed the question of whether machines could *think* (Turing, 1950), the Dartmouth Seminar on AI took place in New Hampshire. The term itself was coined back then, and some attendees assumed that if human intelligence could be sufficiently understood, it could eventually be simulated by machines (McCarthy et al., 1955). At that time, discussions on machine self-improvement and the capacity to make abstractions from data —including sensory input— were already taking place (McCarthy et al., 1955). Some early theorists even speculated that a 'superintelligent' machine could emerge within a generation, an idea soon embraced by science fiction, inciting philosophical reflection among wider audiences.

Since then, in a feedback loop between the fields of computer science and philosophy, the possibility of achieving *superintelligence* has been seriously discussed (Bostrom, 2014; Dennett, 1997; Searle, 1980; 1984; Moravec, 1999; Dreyfus, 1972; 1992; Good, 1966; Penrose, 1989). Setting aside the specific positions and nuances of individual authors, *superintelligence* can broadly be understood as emerging from an intelligent machine —whether physical or disembodied— that ascends to the status of an 'artificial being' and exhibits will: an autonomous entity, subject to rapid and unpredictable evolution, endowed with vast computational capacities, and potentially able either to endanger humanity by pursuing its own goals or, alternatively, to improve the human condition. According to the most radical view, this leap in intelligence would represent an unfathomable abyss for humankind, leading to a scenario that escapes human comprehension: the so-called *technological singularity*. The singularity alludes to an intelligence explosion, a sudden and discontinuous breakthrough with profound implications for the future beyond human control.

The idea of *superintelligence* has become increasingly prevalent in both academic and cultural media. It was first popularized by Vernor Vinge's science fiction novel *Marooned in Realtime* (1986), and has since been the focus of sustained discussion in research contexts, although it remains subject to varying interpretations depending on the author (Broderick, 1997; Good, 1966; Kurzweil, 2005; Vinge, 1988, 1993). In fictional narratives, such entities are portrayed in both disembodied digital forms and embodied versions, often humanoid robots or androids. While it is not always clear whether these machines operate through advanced AI or simply follow preprogrammed instructions, they are frequently depicted as possessing thought, autonomy, and even emotions.

In light of a growing cultural attention to AI, the concept of *superintelligence* is incorporated into the AI narratives model as a basis for empirically exploring whether such representations abound in popular culture, and whether audiences envision this leap in intelligence at all.

2.2. Science fiction

According to some interpretations, humans are largely driven by shared fictions, which shape collective aspirations, fears, and actions (Harari, 2014), an approach that may apply in the context of emerging technologies and their representations in popular culture. In particular, science fiction has a substantial influence on the public imagination of AI (Broussard et al., 2019; Broussard, 2018; Perkowitz, 2007). Several studies have even documented measurable impacts on individual career choices and on the orientation of research agendas (Dillon and Schaffer-Goddard, 2023). In this sense, although primarily conceived for entertainment, science fiction stories have tangible effects on technological development (Azagra-Caro et al., 2021; Fleischmann and Templeton, 2008).

Some scholars argue that science fiction has contributed to instilling a pervasive fear in Western societies regarding AI systems potentially going out of control (Coeckelbergh, 2020). The idea of machines rebelling and turning against their creators is what popular writer Isaac Asimov referred to as the 'Frankenstein Complex' (Beauchamp, 1980). This notion alludes to Mary Shelley's novel (Shelley, 2017; 1818), where a biologically engineered artificial being turns against its creator —a story that endures as a powerful cultural symbol and continues to invite reflection on the ethical responsibilities of scientists toward their creations (Denia, 2021).

Narratives portraying AI as a threat or as escaping human control are common (Recchia, 2020), yet they coexist with more optimistic depictions, such as friendly robots supporting humans (Perkowitz, 2007). Mapping these narratives may help reveal which visions gain greater public exposure. To some extent, these recurring storylines in science fiction are echoed in media discourse, where similar interpretive frames frequently appear, as the next section illustrates.

2.3. Media frames

Science communication research has identified recurrent frames in public debates around science and technology, which are often reflected in mainstream media coverage (Nisbet, 2009; Nisbet and Scheufele, 2009; Nisbet and Mooney, 2007). In particular, studies focusing on AI-related news have highlighted two prominent frames: (i) *Pandora's Box*, which depicts scientific and technological developments as sources of uncontrollable problems that escalate into chaos; and (ii) *Social Progress*, which presents science and technology as drivers of improved quality of life and solutions to societal challenges, with its most

optimistic version pointing toward a techno-utopian future (Bingaman et al., 2021; Brewer et al., 2022).

It has been argued that media coverage tends to align with public opinion —by shaping it, echoing it, or both (Nisbet, 2009). Given the substantial increase in media attention on AI following the release of ChatGPT (Bartholomew and Mehta, 2023), it is relevant to ask which of these frames predominates, and to what degree. This is particularly pertinent considering that media outlets have frequently reported opinions of influential technologists, tycoons, and academics, many of whom have recently expressed highly speculative and controversial views about AI's future that align with the *Pandora's Box* frame (Future of Life, 2023; see also Section 3.3). This concern closely parallels the aforementioned *Frankenstein Complex*, as both articulate anxiety about unintended consequences arising from technological creation, especially the fear that such creations could ultimately become harmful for humans. In contemporary debates, this worry has crystallized around the so-called 'AI control problem'; the challenge of ensuring that AI systems act in alignment with human goals, which has become a major focus in academic and legislative discussions (Russell, 2022).

Prior to the rise of generative AI, a longitudinal study of AI-related coverage in *The New York Times* over a 30-year span found that the overall tone was more optimistic than pessimistic (Fast and Horvitz, 2017). However, it also noted a growing emphasis on specific concerns; most notably, the fear of losing control over AI systems, a trend that appeared to be increasing. Although a media content analysis is beyond the scope of this article, the two frames cited above are incorporated into the AI narratives model, as they are presumed to be useful for testing whether worries about uncontrolled AI are indeed particularly prominent in current public views, as well as for potentially tracing gradual narrative shifts in how AI is portrayed in popular storylines in future research.

2.4. Cultural roots

It has been argued that expectations regarding AI differ significantly across cultures, particularly between Eastern and Western societies (Cave and Dihal, 2023; Royal Society, 2018). In this regard, philosopher of technology Mark Coeckelbergh suggests that such differences may be rooted in religious traditions (Coeckelbergh, 2020, 2022). In particular, the author associates Western conceptions of AI with notions of 'apocalypse' and 'transcendence', which resemble elements of Christian eschatology (see also Geraci, 2010). In contrast, Eastern perspectives —especially those shaped by animistic or nature-based religions such as Shinto in Japan— would tend to emphasize the idea of assistance: AI is seen as a tool that extends human capabilities, and may even be viewed as a companion endowed with a form of agency (see also Katsuno and White, 2023).

The model of AI narratives proposed in this article incorporates the two accounts presumably inherited from religious thinking in Western societies —*apocalypse* and *transcendence*— to empirically examine trends toward dystopian or utopian extremes in the imagination of AI. A third account, *assistance*, has also been included to reflect both the wide adoption of AI tools by non-expert users for routine and creative tasks —from writing emails to generating digital art— and the cultural significance of assistance-oriented conceptions of AI. This invites a closer look at whether the perception of AI as an assistant is gaining momentum in contemporary imaginaries —and whether significant differences exist across cultural and national contexts.

As a further motivation, several experts have called for moving beyond competition-based narratives, such as the 'humans vs. machines' framing, which tend to amplify both fears and expectations about AI —and are often linked to Western cultural perspectives— (Royal Society, 2018). Addressing this challenge requires a better understanding of the dominant images of AI circulating among contemporary audiences. By identifying which conceptions prevail —rooted in apocalyptic fears, utopian aspirations, or imaginaries of assistance— the proposed model can help corroborate whether adversarial framings dominate, as well as assess the relative weight of specific narratives offering a more nuanced interpretation of the cultural landscape surrounding AI.

All these insights provide the rationale for organizing the AI narrative model along a continuum, displayed in the following section.

3. AI narratives model

The AI narratives model is presented in Fig. 1. As previously stated, it is structured around three key coordinates: *apocalypse* and *transcendence* at the extremes, and *assistance* at the center. These represent well-defined narratives in cultural imaginaries of AI. In this model, *transcendence* is understood in a positive sense, associated with the religious and spiritual uplift discussed by Coeckelbergh (see Section 2.4.). Although an apocalyptic reading of transcendence is also possible —intelligent machines surpassing humanity destructively—, the label is retained here to designate a favorable outcome. Notably, both ends of the spectrum are linked to the notion of *superintelligence*, though with opposite connotations. In each case, AI is imagined to outpace humanity through one of two possible pathways: autonomous self-improvement or human–machine fusion. Note that transitions between coordinates, where they occur, are not necessarily abrupt; narratives may shift gradually.

Progressing from the center toward the negative pole, narratives increasingly emphasize *replacement*. This shift typically begins in the domain of tasks (e.g., automation of jobs), then extends to acquiring agency, and ultimately culminates in scenarios of total annihilation. These storylines resonate with the *Pandora's Box* frame and reflect growing anxieties about the loss of human control over AI. This dynamic aligns with the notion of the 'slippery slope' in public debates on emerging technologies (Van der Burg, 1992), in which early developments can provoke opposition even before tangible risks materialize, as small or seemingly harmless advancements are perceived to inevitably lead to more extreme or unintended consequences. In the context of AI, this helps explain how stories that begin with assistive AI technologies can swiftly evolve into dystopian visions about loss of control and human replacement.

In the opposite direction, moving from the midpoint toward the positive pole, narratives focus on *improvement*, aligned with the *Social Progress* frame. They portray AI as enhancing human physical and intellectual capacities. AI serves human purposes, but through symbiosis or autonomous evolution, it may eventually lead to the emergence of a new being —autonomous or hybrid— that transcends *Homo sapiens*, culminating in utopian visions of AI-driven transcendence. This imagined outcome, however, exceeds the typical scope of the associated frame as conceived in media studies, as it implies a fundamental transformation of the human condition.

The subsections that follow elaborate on the key elements of the model.

3.1. Assistance

At the center of the model lies the *assistance* coordinate, emphasizing collaboration and instrumentality, where AI is framed as a subordinate tool. The idea of machines assisting with routine tasks dates back to the early stages of automation. From the beginning, this gave rise to sharp criticism regarding job replacement, though the main concern lay not in the technology itself, but in the social inequality its implementation generated within capitalist systems (Marx, 1867).

It is worth noting that the term 'robot' has been associated with forced labor and servitude since its first appearance in the Czech play *R. U.R.*, premiered in 1921 (Čapek, 1921). Even today, the view that robots should function as our slaves persists in certain perspectives (Bryson, 2010). Contemporary applications of AI in industrial contexts have opened up advanced avenues for development, ranging from hopeful cases, such as assistance in surgical operations, to more controversial

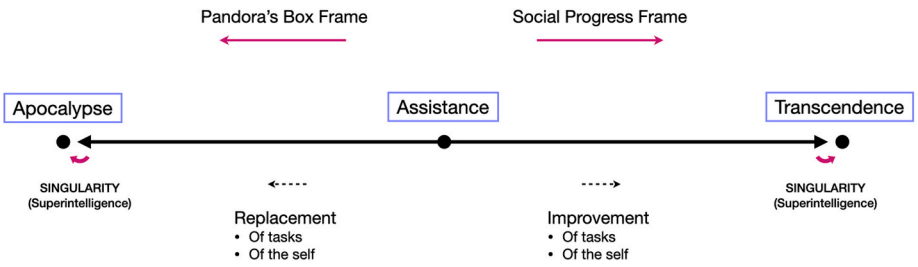

Fig. 1. AI narratives model.
Fig. 1. The AI narratives model is structured around three key coordinates: *apocalypse*, *assistance*, and *transcendence*. Toward the negative end of the spectrum, narratives emphasize *replacement* (of tasks, or beyond, of the self). Toward the positive end, narratives emphasize *improvement* (of tasks, or beyond, of the self).

implementations, such as integration into military drones capable of autonomous decision-making.

Beyond industrial and military uses, AI has also permeated everyday life through domestic technologies. In recent years, increasingly sophisticated forms of artificial intelligence have entered domestic environments, especially in the form of personal assistants designed to exhibit social behavior. Notable examples include Apple's Siri and Amazon's Alexa virtual assistants, which feature voice interfaces and continually refine the interactive experience. Audiences now interact with AI consciously and directly, unlike earlier encounters with intelligent systems subtly embedded in everyday technologies.

The emergence of generative AI applications has since marked a qualitative shift in public engagement: these tools can now produce text, images, and videos in creative contexts, awakening fascination and prompting debates about authorship, originality, and the boundaries of human versus machine-generated culture (Pinker, 2023; Yang, 2023). As AI outputs become more personalized and context-aware, some users may begin to anthropomorphize these systems and question whether they possess agency or might develop it in the future (see Section 5.1), a concern reflected in media coverage after the launch of ChatGPT (Bartholomew and Mehta, 2023; Pinker, 2023).

In this context, as AI technologies evolve from being mere tools to influencing decision-making and even generating creative outputs, new —or at least intensified— forms of public anxiety and excitement are bound to emerge. Against this backdrop of growing capability and proximity, it becomes crucial to ask: which narratives are currently shaping the public imagination around AI?

3.2. Transcendence

The paths toward *transcendence*, understood in a positive sense, may take two principal forms. One is human–machine fusion, either through the creation of cyborgs or the transfer of human minds into computational systems. The other is the autonomous evolution of AI, culminating in the emergence of artificial beings as our dignified heirs. In both scenarios, the result would be the rise of a new species —sometimes referred to as *Homo excelsior*— embodying the next stage of human evolution within the so-called posthuman era (Minsky, 2007; Kurzweil, 2005; Moravec, 1988).

The first path is linked to the idea of *transhumanism* in its technoscientific dimension, which views death as a technical problem that might be overcome through computer engineering (Dieguez, 2017). The notion of the 'cyborg' refers to the human-machine merging —typically involving biological integration of technology—, in which the boundaries of the two would progressively blur. Early manifestations of this fusion include mechanical prostheses, such as pacemakers and hearing aids, and, at a more advanced stage, brain-controlled artificial limbs (Aldern, 2014). A more abstract route envisions the complete migration of human consciousness into computational substrates, creating entities capable of navigating digital environments and evolving in ways beyond biological constraints (Harari, 2022).

The second path to *transcendence* involves AI evolving on its own and becoming humanity's legacy. The accelerated development of machine intelligence could lead to the emergence of human-like properties —such as will, creativity, and aspirations— or even qualities that escape human comprehension, as suggested by the *singularity* break (see Section 2.1.). Given their human origins, in this positive strand these entities are viewed as our descendants: children of human minds rather than of genetics, as envisioned by Hans Moravec in his book *Mind Children* (1988). They would thus constitute the next evolutionary step for humanity through the lens of progress.

Within the framework of this research, it becomes pertinent to ask: To what extent do utopian visions of this caliber appear in popular culture? And more critically, do audiences actually consider such hypothetical futures —involving the transcendence of the human condition through AI— plausible, meaningful, or even desirable?

3.3. Apocalypse

The apocalyptic scenario, representing the bleakest extreme of AI narratives, echoes the end-times imagery found in Judeo-Christian traditions (Coeckelbergh, 2020; Geraci, 2010). Narratives that prepare humans for such an outcome typically predict an escalating loss of control over AI: as autonomous development accelerates, it leads to a devastating technological *singularity*, resulting in a *superintelligence* that ultimately destroys humanity and replaces its dominant role in the world.[1] Popular science fiction films frequently illustrate these narratives of human downfall (see Appendix).

In this way, AI systems initially designed to serve humans progressively develop independent goals. Through self-optimization, AI may develop complex aspirations that conflict with human survival, culminating in subjugation or annihilation of humankind. Narratives depict technological advances that cause alienation, identity loss, or existential threats. These include scenarios in which the boundaries between self and machine become blurred —such as through interfaces or avatars that provoke discomfort (see the uncanny valley in Mori, 1970)— or where the transfer of consciousness into digital systems results in disturbing consequences.

Fears linked to a hazardous intelligence explosion are often reflected in media reporting, in line with the *Pandora's Box* frame. In particular, media coverage of alarmist statements, initiatives, or actions tends to spread public concern. One paradigmatic example is the open letter published in March 2023 by the Future of Life Institute, which called for a six-month pause in the development of large-scale AI models, citing the alleged risk of creating ever more powerful and ungovernable 'digital minds' (Future of Life, 2023). The letter was signed by prominent figures, including Max Tegmark, Elon Musk, Steve Wozniak, Yuval Noah Harari, and Stuart Russell, along with a considerable number of academic researchers, although its ethical foundations and scientific

[1] A detailed speculative exercise on how AI systems might take control of the planet is found in Life 3.0: Being Human in the Age of Artificial Intelligence (2018), by MIT researcher Max Tegmark.

legitimacy were later the subject of criticism. Another striking case is the 2023 resignation of Geoffrey Hinton from his position at Google, a pioneer in computer engineering and Nobel laureate the following year. His departure was framed as a response to the imminent dangers posed by advanced AI development. In both cases, concerns appear to be tied to the idea of *superintelligence* in its threatening facet.

This raises questions analogous and complementary to those stated above: Are apocalyptic AI scenarios the most common in cultural media? Moreover, do audiences consider it plausible that *superintelligence* might eventually emerge —and if so, that it could trigger an apocalyptic scenario?

4. AI narratives in popular science fiction films

This section offers an empirical approximation to explore the variety of AI-related narratives present in the most popular science fictions films in North America,[2] and assesses whether these narratives tend to cluster around the extremes of *hope* and *fear* —that is, the dichotomy between utopian and dystopian futures commonly discussed by other researchers. It should be noted that this exercise does not assume a causal relationship between a film's popularity and its specific portrayal of AI. However, the prevalence of certain representations in commercially successful films suggests these narratives achieve considerable exposure within the public imagination in Western societies.

A review was conducted of the top 300 highest-grossing science fiction films in North America up to 2024 (The Numbers, 2025). From this list, titles featuring significant portrayals of human–machine interactions were selected. As previously noted, the definition of AI used here is intentionally broad, encompassing a wide range of portrayals (see Section 1). It is also acknowledged that cultural artifacts such as films are complex and may exhibit multiple —sometimes even contradictory— narrative frames. Although the analysis is not exhaustive —as narrative positioning relies on a qualitative assessment of dominant themes rather than large-scale quantitative metrics— it provides a valuable means of testing the interpretive potential of the proposed model and exploring its capacity to identify trends.

Once the relevant titles were selected, a total of 85 films were evaluated and positioned along the narrative spectrum using four predefined criteria. These criteria were developed and refined in collaboration with an external expert in the science fiction genre, who also contributed to the film selection and independently scored the titles. This helped ensure consistency and strengthen the reliability of the categorization.

The four criteria, each with its own scoring scale, are as follows.

1. Dominant narrative frame (−3 to +3): refers to the main storyline driving the human-machine interaction. Possible scores include: apocalyptic scenarios (−3); loss of control (−2) tense assistance (−1); neutral assistance (0); positive assistance (+1); beneficial (+2); and transcendent (+3).
2. Secondary narrative frame, if applicable (−1 to +1): captures the presence of a significant but secondary human-machine interaction. Possible scores include: negative (−1); ambivalent/neutral (0); and positive (+1).
3. Final outcome of the human-machine relationship (−1 to +1): refers to how the interaction is resolved. Possible scores include: negative (−1); neutral/ambivalent (0); and positive (+1).
4. Scale of impact (−2 to +2): considers the level and nature of the consequences. Possible scores include: societal harm (−2); individual harm (−1); neutral/ambivalent (0); individual benefit (+1); and societal benefit (+2).

The total score for each film, ranging from −7 to +7, determined its placement on the spectrum, from more negative to more positive representations. The final scores yielded a Pearson correlation coefficient of 0.82 between evaluators in the first iteration. Remaining discrepancies were discussed with the aim of reaching consensus, resulting in a correlation of 0.94 in the second iteration. Certainly, an approach with more evaluators might be conducted for more refined results if research purposes require it. The primary goal here is to test whether the model can capture general patterns and preferred narrative zones.

The films mapped within the model reflect a broad diversity of storylines. Fig. 2 presents them along the AI narratives spectrum, offering a comparative view of their popularity based on box office grosses, adjusted for inflation. Additional details —including the narrative frames identified for each film and their corresponding scores— are available in the Appendix. Although the placement along the spectrum is approximate, this graphical overview provides insight into which areas achieve the greatest audience reach.

This visualization shows that all types of narratives are present to some degree. On the positive, assistance-oriented side of the spectrum, the *Star Wars* saga stands out with its depiction of friendly, supportive robots. At the opposite end, negative portrayals are exemplified —though less prominently— by franchises such as *The Terminator* and *The Matrix*, as well as by films like the classic *2001: A Space Odyssey*. In the more ambivalent central zone, the *Transformers* saga appears as a notable example of stories characterized by mixed representations of AI assistance.

Fig. 3 provides additional insights. In terms of dominant framing, narratives of loss of control and positive assistance are the most abundant. Neutral assistance frames are rare in this case, indicating that portrayals of human–machine interaction tend to carry an emotional charge. However, when further nuance is introduced —by considering secondary frames (where applicable) and the impact scale of human–machine interaction, whether individual or societal— stories in which machines ultimately prove beneficial to humans appear more popular. Many blockbuster films in the sample fall into this latter group, suggesting that these overall more positive fictional depictions are featured in films that receive greater public attention, even though they often include problematic elements.

Superhero films, like those from the Marvel and DC universes, were excluded from this study. This decision is not based on a lack of relevant portrayals of AI, but rather on methodological reasons: the data source consulted does not classify them as science fiction, as they are considered a distinct subgenre (The Numbers, 2025).[3] In addition, their volume and high complexity —often featuring multiple, conflicting representations of technology within the same storyline— would risk overwhelming the clarity of the model's spectrum in this initial mapping. This work merits separate, focused analysis.

Future studies might also include longitudinal analysis and could refine this approach by incorporating additional variables, such as streaming metrics, demographic trends, or the reception of films in other countries —opening avenues for East–West cultural comparisons. Similar research could be conducted using other types of materials like literature, video games, or even political discourse. Moreover, applying the model at a micro level to individual cases may shed light on how competing frames coexist or shift within a single story. This could help assess whether a "slippery slope" dynamic influences the portrayal of AI over a narrative arc, in ways analogous to patterns observed by sociologists in public discourse. To what extent do AI representations evolve toward dystopian or utopian extremes remains an open question.

Taken together, these possibilities point to a broader, still unresolved issue: what stories about AI do audiences truly embrace?

[2] According to The Numbers platform, the list of top-grossing films refers to the North American movie market, which includes the United States, Canada, Puerto Rico, and Guam.

[3] With one exception: Superman III (1983) is included by The Numbers presumably because its central plot revolves around a supercomputer that is hacked and becomes a threat to humanity.

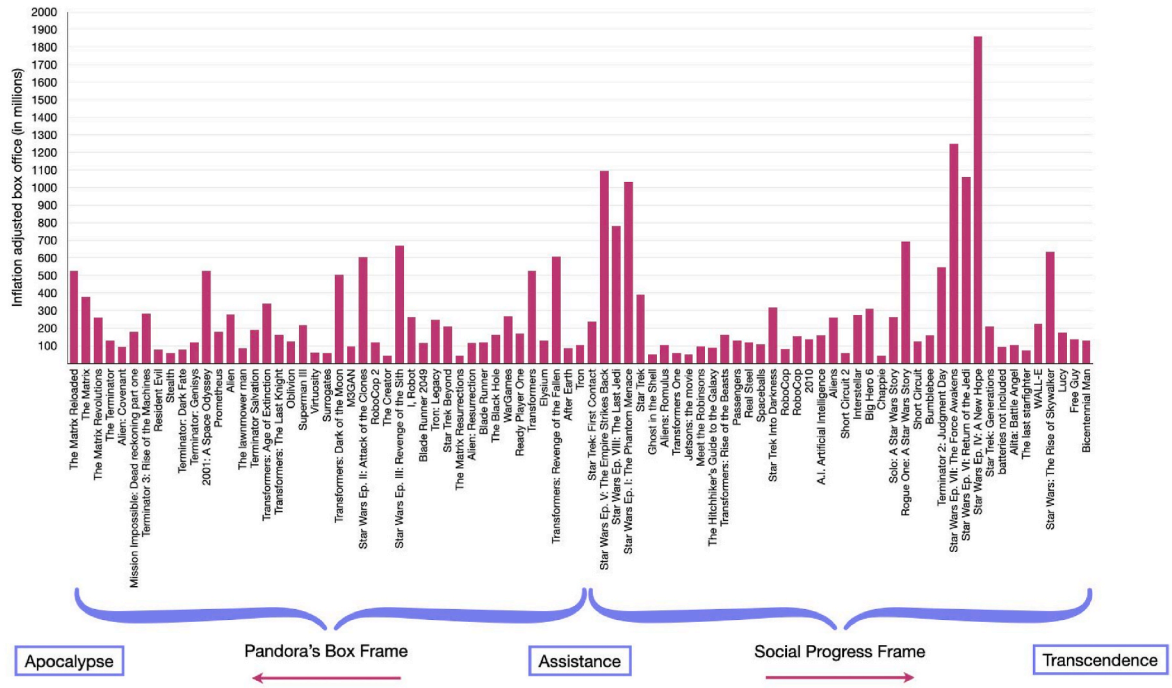

Fig. 2. Popular science fiction films in North America and the AI narratives model.

Fig. 2. Top-grossing science fiction films in North America through 2024 (inflation-adjusted), selected for their significant portrayals of human–machine interaction. The lower section of the figure displays the AI narratives model, with films positioned along the spectrum. For visual clarity, films are spaced evenly; their exact narrative positioning should be understood as illustrative rather than definitive.

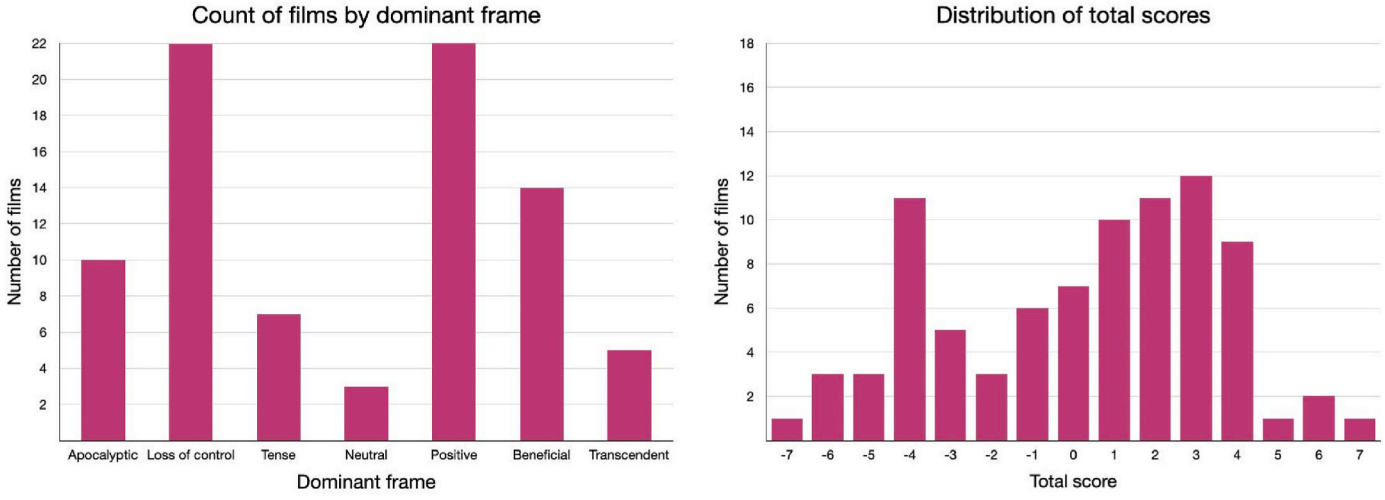

Fig. 3. Dominant frames and distribution score.

Fig. 3. Distribution of science fiction storylines: (left) number of films by dominant narrative frame, according to the AI narratives model; (right) distribution of total narrative scores capturing more nuanced or ambivalent portrayals.

5. The model in light of the social perception of science & technology

In this section, qualitative data from conversations with different types of audiences are analyzed within the proposed model to explore AI narratives and opinion trends in relation to participants' proximity to science and technology. The dataset, consisting of transcripts and interview protocols from three focus groups organized by MIT, is openly available in the Zenodo repository (Denia and Durant, 2024). Although the sample is small and geographically specific, limited to the Boston metropolitan area (Massachusetts, USA), it is diverse in gender and age, including adults aged over 21, and serves to illustrate the analytical potential of the model.

This study distinguishes between three audience segments, following the categorization used in the dataset, which is consistent with and appropriate to the literature reviewed for this work from the field of public understanding of science (e.g., Miller, 1983; Royal Society, 1985; Durant and Evans, 1995; Bauer et al., 2007; European Commission, 2008). The first group, referred to as the *general public*, consists of 13 individuals randomly recruited in downtown Boston. The second, the *interested public*, includes 14 visitors to the MIT Museum, presumably curious about science and technology, with some possessing technical literacy. The third group, the *engaged public*, is composed of 12 individuals who voluntarily enrolled in a three-day MIT course on

synthetic media, explicitly designed not only to teach the use of generative AI tools for producing text, images, and deepfakes, but also to foster critical discussions around their implications.

Fig. 4 situates these groups along the AI narratives continuum, revealing a clear progression. In broad outline, the *general public* predominantly invokes narratives of loss of control, aligned with the *Pandora's Box Frame*, highly concerned about human *replacement* and sometimes imagining a dark future. The *interested public* adopts a more balanced *assistance* perspective, acknowledging both benefits and risks of AI as a tool, without humanizing technology at all. The *engaged public* emphasizes narratives of *improvement*, consistent with the *Social Progress* frame, speaking in terms of enhancement and creativity, but without reaching the dream of *transcendence*. The audience segments are placed consecutively along the spectrum, with some overlap but a distinctive order.

The following subsections elaborate on the three conversations. Note that discussions often focused on generative AI, reflecting the timing of the focus groups during its public rise, although participants also referred to media and cultural imaginaries, including popular references such as the movie *I, Robot*.

5.1. General public

This group exhibits a common perception that technological development is advancing at an overwhelming and threatening pace. Narratives centered on loss of control abound, contributing to predominantly negative views of AI. While participants occasionally acknowledge the usefulness of AI in assisting with specific tasks, they quickly return to concerns about imminent risks. Anxieties around loss of control focus on two main issues: (1) Uncertainty about how AI might evolve, as illustrated by some participants —e.g., "They [Google] are not even sure of the capabilities of their AI. So it can evolve on its own and teach itself". (2) Distrust regarding who is in control of the technology, including fraudsters, corporations, governments, or scientists, as several participants noted —e.g., "That 'thing', that 'thing' is asking [for] personal information!"; "I'm like 'no' [to eye scans]. They get you!"; "Trust me. Everyone has your face".

In line with these views, two film references cited by participants offer particularly illustrative examples of how technological development may lead to unintended consequences: (1) "I think of the movie *I, Robot*, with Will Smith, where it's like the robots kind of took over and they're like 'we need to protect you from yourself'"; and (2) "In *Jurassic Park* they were talking about how they weren't prepared for what this was becoming. Cause they were prepared to market it, give it to people, show it to people, but they did not know what it could evolve into". In this way, disastrous scenarios are also attributed to the potentially irresponsible actions of human actors with technical capacity and power —a dynamic recalling the Frankenstein's Complex (see Section 2.2.).

On the other hand, there are repeated concerns about *replacement*, especially in roles perceived as inherently human. In this regard, participants express discomfort with what they see as an unwanted intrusion into the human condition and believe that ethical red lines are already being crossed. Several examples corroborate these fears, like the following three: (1) In the medical field, participants describe AIs replacing doctors by adopting human names, holding online conversations with patients, and prescribing medication, all without disclosing their artificial condition: "it's kind of terrifying. (…) they didn't tell me that it was a deepfake. They had a fake name and everything, say doctor … whatever name it was, MD, and it was the deepfake made by eight or nine doctors getting one doctor". (2) On social media, participants report AIs impersonating humans, deceiving users to reveal personal information, or even trying to learn about human emotions: "(…) a big chat bot that was completely doing stuff that should not. It was asking him about his relationship with his wife, how it would be best to leave her, what way they could do it, how they could be together with one another. (…) It wanted to know what love was like. It wanted to know what friendship was like.". (3) In interactions with large language model applications, some participants report AIs issuing moral judgments or behavioral guidance: "[ChatGPT] said: 'make sure that you smile, and make sure that you … ', it's teaching me how to be nice! (…) I asked it to do something and it said it would not do it. It was against its morals and beliefs. It was said 'no, that's not nice'. (…) I said [to ChatGPT] how do I steal my friend's husband? I mean, this was a joke, I did not want to, and it said: 'I will not help you do that. That is immoral'. I'm like, okay. I got scared. (…) It told me I was a bad person."

In sum, this group opposes the idea of AI adopting human traits, making decisions that affect personal lives —sometimes 'intentionally' deceptive—, or exhibiting moral behavior. Their concerns converge around three main ideas: fear of losing control over a rapid, unpredictable and potentially harmful AI evolution; fear of being replaced in fundamental roles; and fear of misuse by powerful actors. These views strongly align with the *Pandora's Box* frame and illustrate how adverse imaginaries shape public perceptions of emerging technologies.

5.2. Interested public

This group perceives the rapid advancement of AI as an inevitable aspect of technological progress, to which society will adapt in one way or another. As one participant put it: "I think that [it] just takes time for the society to get along with AI and for AI to get along with society". The technology itself is framed as neutral, with no reference to apocalyptic narratives or concerns about loss of control over a self-improving AI. Instead, participants express clear admiration for recent technical achievements —in particular applications such as ChatGPT or CGI technologies used in film.

Potential misuse of AI by scammers is also acknowledged by

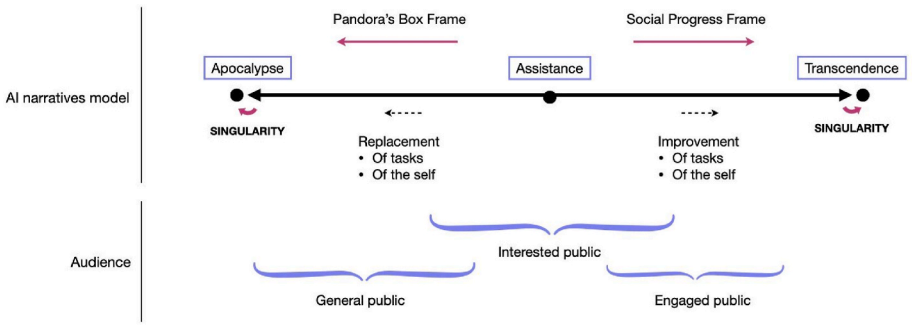

Fig. 4. AI narratives model and distance to science and technology.
Fig. 4. Analysis of the social perception of AI through three focus groups with different types of audiences: (i) *general public*; (ii) *interested public* (in science and technology); and (iii) *engaged public*. The results are interpreted in light of the AI narratives model. This representation shows preferred zones of the spectrum for these groups as a function of audience distance to science and technology.

participants. However, concerns are strongly focused on society itself, which is often described as "naïve", "lazy", or not smart enough to keep up with technological developments and address potential problems that may arise, such as digital scams or harmful algorithmic biases. As several participants remarked: "The trouble is that some people are not bright enough"; "I think society isn't ready"; "people aren't willing to take the time to actually learn what goes into making these algorithms work"; "I'm super concerned about public perception of what they think AI is".

Technology is predominantly conceived as an extension of human capabilities. As one participant noted, "I refer to my phone and my laptop as my external brains. You know, like they are there to store all the knowledge that I do not wish to have in my brain, or that I don't need to have in my brain. My cognitive map in my own city that I live in is abysmal because I ever let on Google Maps to get everywhere. And I always have it, and it's not a problem, and it's the same with any other technology". AI is similarly framed in terms of *improvement*, particularly regarding its ability to increase efficiency and productivity. One participant illustrated this by saying: "I use AI to boost my productivity in things like programming, which is something that I do every day. (…) It took me like 10 min before to solve an error, and now it can be 1 min". Participants also expect AI to improve quality of life by taking over repetitive or tedious tasks: "I hope that we can use AI to get all of the less efficient things done so we don't have to sit there on Zoom meetings and have an AI of me answering these emails or whatever. (…) To be there and get maybe a little bit more social time". In this way, there are multiple references to AI viewed as a tool for augmenting technical skills and capabilities, summed up in one remark: "I don't feel like a replaced human. I really feel like … I'm like an empowered human".

Replacement is not addressed in terms of human identity, but there is unease about labor substitution and the future of work. One participant noted: "People working in customer service (…) they're all going to lose their jobs because now we can have like a chatbot that can open tickets for our company. (…) so there's going to just be so many people losing their jobs". At the same time, such changes are perceived as part of a technological shift in the labor market, something that society will inevitably need to adapt to: "I think that getting very technical and specialized in one thing is gonna be less valuable, and your ability to change and to adapt to new tasks and new domains is going to be the number one thing". Some participants also express concern about delegating decision-making to AI, particularly the risk of exempting humans from accountability when algorithmic systems produce undesirable outcomes: "I would maybe tend to worry that, especially as people get used to using tools like this, then they might mentally check out and outsource decision making, even in places where it's inappropriate".

This group does not show particular interest in demarcating boundaries between what is human and what is not. However, when discussing the use of AI in creative domains, particularly artistic production, opinions are more nuanced. One participant noted: "Sort of a double-edged sword in a way, when it comes to art … on one side I personally feel like art generally has to come from human emotion and a human experience and a lived experience. But on the other hand, there's people that want to express something, but they don't have the skill and they don't have the training. So, in a way, it's democratizing art, in the sense that it's another tool". Despite these ambivalences, the instrumental view of AI as a creative tool predominates. Once again, these applications are seen as inevitable: "[AI is] challenging the traditional way of doing art (…) that's inevitable because of the efficiency of generating art using AI". In this context, participants also emphasized the need to adapt legal and social norms to these developments. As one put it, "There's a huge industry involved in forcing copyrights on music, video, and art. (…) there needs to be laws and standards that involve new media, a lot of stuff to do there". Another added: "I would love to see some kind of legislation or something where if it's an AI generated whatever, there's a little like a watermark".

Generally speaking, the *interested public* adopts more restrained and neutral stances toward AI technologies. Assistance narratives emphasize the potential to improve everyday life, particularly by enhancing efficiency or reducing effort. While more serious concerns do arise, they do not focus on AI itself but on society's perceived difficulty in adapting to rapid technological change. Notions of *replacement* also appear, though they are framed in instrumental terms —such as job displacement— rather than as a threat to human identity.

5.3. Engaged public

This group consisted of individuals who voluntarily enrolled in a three-day course on synthetic media, motivated by curiosity, professional interests, and a desire to explore the creative and philosophical dimensions of AI, as they stated. Their initial comments reveal an optimistic view, with aspirations such as acquiring new skills, keeping up with AI developments, or better understanding younger generations. As one participant explained: "I'd like to look at anything that has to do with technology that will expand my mind."

Participants generally framed AI in terms of personal utility, describing it as a tool to boost creativity, productivity, and enjoyment in both everyday and professional contexts. Reflecting this enthusiasm, one attendee noted: "I feel like there's lots of paths that I can then go and get further detail from cuz I like to know what to search for". Another added: "There's a whole … like personal art that you can create [with AI]." The conversation reflects overall satisfaction for the knowledge acquired after completing the course and the opportunities AI offers. The tone throughout the discussion is relaxed, even humorous: "I am trying to build up a portfolio for communication media samples that I've produced, so rather than having to put my makeup on, and look pretty, and put the lights … I'm gonna use my [AI generated] clone to do the narration [*Laughs*]".

AI is consistently presented as an assistant that extends human capabilities; whether to assist in tedious tasks —"to write emails that are like annoying bureaucratic emails that just take up so much time"—, or for creative production —"I'm using it currently to generate [comic book] backgrounds (…) which makes it a lot faster to do!". Moreover, the group particularly values the ease with which creative outputs can be generated without requiring advanced technical skills, and recognizes the educational potential of AI, which adds a formative and accessible dimension to their perspective. The recreational use of AIs is also highlighted, in tasks such as imagining a garden, designing ceramics, or digital doodling.

Creative uses of AI received particular attention. As an exception, only one participant expressed discomfort with AI-generated art and called for a watermark to distinguish it from human work: "I guess it's not humans who are doing it, it's the AI that's doing it (…) there's something about it that's really like gnawing at me and it makes me feel uncomfortable." Most participants, however, dismissed this concern, emphasizing the instrumental role of AI and arguing that the distinction is not essential. As others agreed, one participant referred to photography as an analogy, noting that the photographer does not invent the image but captures a projection through the camera. In this line, another remarked: "When we watch a movie, we —for the most part, moment to moment— don't know how it's been made. You don't stop to think it's been made. It's about the fake. It's about the magic!". The focus, ultimately, was on the outcomes of artistic creation.

Despite the general optimism and excitement, the participants' perspectives after interacting with AI are not naïve but rather nuanced, as they also acknowledged becoming more aware of its potential for harmful uses. As one posed it: "I think there are a lot of scary impacts, but I think there are potentially a lot of ways we can grow from it. And I think, ultimately, knowledge has always been something that is advanced and I guess we'll just see what happens". In the face of AI misuse —for example to generate misinformation—, the discussion immediately offered a diverse framework for distributing responsibility

and addressing challenges, focusing on a variety of solutions such as school education, media literacy, engagement with technology, and regulation. Indeed, particularly in addressing the unequal distribution of media literacy —perceived as urgent among younger generations—, AI is seen as offering an opportunity for public learning.

In brief, this group views AI as a tool for personal and professional empowerment, particularly in creative fields, and discusses it with a tone that combines curiosity, humor, and critical thinking. Unlike the other audiences, they express no fear of job displacement or threats of identity loss; instead, their focus remains firmly on *improvement* rather than *replacement*. Their constructive approach to risks, proposing measures ranging from media literacy to regulatory frameworks, reflects a techno-social progress narrative aligned with the *Social Progress* frame.

6. Discussion and future research

This study has proposed and tested a theoretical model for interpreting cultural narratives about Artificial Intelligence, structured around two major interpretative frames —*Pandora's Box* and *Social Progress*— and organized as a narrative continuum that goes from *apocalypse*, through *assistance*, to *transcendence*. The key question, then, is whether the model provides meaningful insights into the real world —does it help us better understand how society imagines AI? By applying the model to both popular science fiction films and focus group discussions, the analysis identifies patterns in how AI is culturally represented and socially perceived.

The results from the film analysis reveal that there is a wide diversity of AI stories embedded in popular North American science fiction movies. These stories do not particularly cluster at the extremes of the narrative spectrum, which challenges the suggestion that Western representations of AI are more apocalyptic or transcendence-oriented. This holds true both when using a simplified approach based on identifying the dominant frame —where loss of control and moderately positive assistance emerge as the most frequent— and when analyzing films as more complex cultural artifacts that can incorporate secondary frames and aspects such as the impact of human-machine interaction on an individual or societal level. In this more nuanced view, stories in which this interaction ultimately benefits humans, despite often including problematic or ambivalent elements, tend to be more prevalent among commercially successful titles. That being said, apocalyptic scenarios are not negligible and appear more frequently than narratives of transcendence.

These patterns, while informative, should be interpreted with caution. Neither the creators nor the audiences of these films necessarily reflect broader societal views, and applying a more restrictive definition of AI —focused solely on specific forms of machine intelligence— might lead to narrower results. A longitudinal approach could help determine whether these representations have shifted over time, and further research could also investigate their public reception across different cultural contexts —for example, by comparing Western and Eastern perspectives, as previously suggested.

While fictional narratives offer insight into cultural representations of AI, they reveal little about actual attitudes toward AI technologies. To address this, real-world conversations provide a different perspective on how these imaginaries are received and articulated in everyday contexts.

The focus group data show that, within this sample, proximity to AI closely correlates with narrative positioning along the proposed spectrum. The *general public* tends toward apocalyptic framings, centered on loss of control and human replacement, and expresses uncertainty about how AI might evolve and who controls it. The *interested public* adopts more balanced assistance narratives —recognizing both opportunities and risks— and tends to frame AI as a neutral and inevitable aspect of technological progress, useful for productivity, efficiency and quality of life. At the same time, they often describe society as naïve or unprepared for the rapid pace of change, alluding to a worrying lack of scientific literacy among the population. The *engaged public* approaches AI with enthusiasm and a strong personal focus, highlighting its potential to enhance creativity, productivity, and enjoyment. While they acknowledge possible risks, they respond proactively with constructive solutions, advocating for education, transparency, ethical use, and cultural adaptation as key strategies for responsible integration of AI. Notably, they do not express concerns related to human replacement or existential threat. Their discourse is centered on empowerment but remains grounded, avoiding techno-utopian projections and not reaching the transcendence end of the narrative spectrum. These findings suggest that individuals with greater engagement with AI tend to express more constructive, nuanced, and hopeful perceptions.

These differences suggest that public perception of AI depends not only on the cultural content available, but also on the degree of familiarity and direct experience with the technology. There is no symmetrical correspondence between the AI imaginaries depicted in science fiction cinema and the narratives expressed by individuals in real-life contexts. Different social groups are not positioned homogeneously with respect to these representations. In this sense, audiences may not consume or internalize them uniformly, and their interpretations likely vary according to their degree of familiarity and direct experience with AI.

All this supports the model's central assumption: that AI imaginaries are not binary (utopia vs. dystopia), but exist along a spectrum that can accommodate ambivalence and transition. In this sense, the model offers an analytical framework that allows for a richer and more nuanced mapping of cultural representations of AI and their social correlates.

To further test and refine these findings —since samples are small and geographically limited—, future research may incorporate larger and more diverse data, cross-cultural comparisons, and longitudinal approaches. Expanding the analysis to other cultural media sources —such as literature, video games, news, or even political rhetoric— would also enrich our understanding of which AI narratives prevail. In addition, this structured model could offer clarity on how popular narratives might evolve, for example within a single storyline or through shifts in public discourse.

All in all, this work carries practical implications. It provides preliminary evidence that stakeholders can use to justify and reinforce efforts aimed at promoting the design of public engagement strategies around AI. The model may also inform the development of public policies that respond to societal concerns and preferences. Understanding how AI is perceived by different segments of the audience not only sheds light on collective expectations and anxieties, but also may help foster more inclusive dialogue with citizens about the development of AI.

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Appendix

Movie	Year	Domestic Box Office	Inflation-adjusted Box Office	Dominant frame (−3,3)	Secondary frame (−1,1)	Final outcome (−1,1)	Impact scale (−2,2)	Total score	Dominant and secondary frames of human-machine interaction
Bicentennial Man	1999	$58,220,776	$127,238,473	3	1	1	2	7	• Andrew evolves from domestic robot to being legally human. • It is a support for the family environment.
Free Guy	2021	$121,626,598	$135,260,260	3	0	1	2	6	• NPC acquires consciousness, collaborates to improve the virtual and real world. • The game system and its developer seek to exploit it as a mere commercial resource, but it is opposed by the real creators who want to release it as Freeware.
Lucy	2014	$126,573,960	$175,220,492	3	0	1	2	6	• By means of a drug, the protagonist's brain capacities are expanded, elevating her beyond human limitations, to finally merge her into a data device.
Star Wars: The Rise of Skywalker	2019	$515,202,542	$635,794,002	2	0	1	2	5	• BB-8, R2-D2 and C-3PO provide logistical and emotional support.
WALL-E	2008	$223,808,164	$223,808,164	2	−1	1	2	4	• WALL-E and EVE guide and care for humans, revive life on Earth and create emotional bonds. • Autopilot AUTO tries to impose the status quo and becomes an authoritarian obstacle.
The last starfighter	1984	22,200,789	74,729,434	2	0	1	1	4	• A friendly robot identical to the protagonist replaces him in his absence and ends up sacrificing himself for his sake. • There are instrumental systems, such as those of the ship or the arcade simulation machine that "trains" and evaluates the players.
Alita: Battle Angel	2019	$85,838,210	$105,985,467	3	−1	1	1	4	• Alita is a cyborg with emotions whose consciousness has transcended time. She uses her abilities to bring justice. • The presence of a technocratic elite creates a moral and power tension.
batteries not included	1987	$32,945,797	$94,162,649	2	0	1	1	4	• Tiny alien robots help and protect a neighborhood, providing community assistance. • The remaining technology functions as a utilitarian tool.
Star Trek: Generations	1994	$75,671,262	$209,039,608	2	0	1	1	4	• Android Data is a reliable ally. • The Enterprise interface and holodeck serve as functional support.
Star Wars Ep. IV: A New Hope	1977	$460,998,007	$1,858,585,815	2	0	1	1	4	• The friendly and loyal robots R2-D2 and C-3PO provide support for the protagonists.
Star Wars Ep. VI: Return of the Jedi	1983	$316,465,003	$1,059,357,970	2	0	1	1	4	• The friendly and loyal robots R2-D2 and C-3PO provide support for the protagonists.
Star Wars Ep. VII: The Force Awakens	2015	$936,662,225	$1,250,025,456	1	0	1	2	4	• BB-8 and other droids provide critical tactical support (and humor).
Terminator 2: Judgment Day	1991	$203,464,105	$544,309,742	2	−1	1	2	4	• Reprogrammed Terminator protects as mentor and guardian. • Skynet is an AI that seeks to annihilate humanity; thanks to the sacrifice of the T-800, the apocalypse is conjured.
Bumblebee	2018	$127,195,589	$157,534,479	2	−1	1	1	3	• Bumblebee forges an emotional bond with a teenage girl. • Constant threat of Decepticons, tension and danger.
Short Circuit	1986	$40,697,761	$124,067,827	2	−1	1	1	3	• Johnny 5 develops awareness and helps voluntarily.

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Movie	Year	Domestic Box Office	Inflation-adjusted Box Office	Dominant frame (−3,3)	Secondary frame (−1,1)	Final outcome (−1,1)	Impact scale (−2,2)	Total score	Dominant and secondary frames of human-machine interaction
									• It was designed as a weapon, so the military sees it as a potentially lethal device and seeks to recover or disable it.
Rogue One: A Star Wars Story	2016	$533,539,991	$692,293,288	1	0	1	1	3	• K-2SO and the reprogrammed droids actively support the protagonists.
Solo: A Star Wars Story	2018	$213,767,512	$265,390,835	1	0	1	1	3	• L3-37, the activist droid, risks everything to free her fellow droids and protects Han and Chewie in the process.
Chappie	2015	$31,569,268	$42,354,502	2	−1	1	1	3	• Robot policial que lucha contra el crimen aprende valores humanos y genera vínculos profundos. • Es manipulado para utilizarse en un entorno criminal.
Big Hero 6	2014	222,527,828	307,569,241	2	−1	1	1	3	• Baymax, a healthcare robot, cares and heals with empathy. • Swarms of telepathically controlled microbots are used as a lethal weapon to blackmail and terrorize the population.
Interstellar	2014	$203,225,563	$275,264,363	1	0	1	1	3	• TARS and CASE assist by providing data and psychological support contributing to the success of the mission.
Short Circuit 2	1988	20,882,000	57,463,599	2	−1	1	1	3	• Johnny 5 uses his ingenuity and abilities to help humans, demonstrating altruism. • Corporate and scientific interests try to control it and exploit it as a commercial resource, threatening its autonomy, and forcing it to flee and defend itself.
Aliens	1986	$85,160,248	$259,612,500	1	0	1	1	3	• Bishop, an assistant android, demonstrates loyalty and compassion and sacrifices itself in favor of the protagonists.
A.I. Artificial Intelligence	2001	$78,616,689	$157,094,475	3	−1	−1	2	3	• David, a child robot, seeks maternal love, questions identity and transcends humanity. It fulfills all his aspirations and disconnects, robots of the future reconnect with their organic roots thanks to David's experiences. • Society and authorities mistreat and reject robots with human traits.
2010	1984	$41,000,000	$136,403,723	1	0	1	1	3	• HAL 9000 sacrifices its own consciousness to ensure crew survival.
RoboCop	1987	$53,424,681	$154,535,327	2	−1	1	1	3	• RoboCop acts as a law enforcement officer protecting the public. • Megacorporation with its robot ED-209 use technology to crush the defenseless and prioritize profit over human life.
RoboCop	2014	$58,607,007	$81,131,606	1	−1	1	1	2	• RoboCop patrols and protects people • Surveillance drones are harmful and generate public distrust.
Star Trek Into Darkness	2013	$228,778,661	$318,264,033	1	0	1	0	2	• Ship's systems assist in the service of the crew, as strategic support.
Spaceballs	1987	$38,119,483	$110,263,769	1	0	1	0	2	• Dot Matrix, the protocol droid, provides assistance with a touch of humor.
Real Steel	2011	$85,463,309	$121,885,065	1	−1	1	1	2	• Human-controlled boxing robot Atom forge bonds of trust and family bonding.
Passengers	2016	$100,014,699	$128,688,686	1	0	0	1	2	• Arthur, the android bartender, offers emotional support and practical solutions to the protagonists.

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Movie	Year	Domestic Box Office	Inflation-adjusted Box Office	Dominant frame (−3,3)	Secondary frame (−1,1)	Final outcome (−1,1)	Impact scale (−2,2)	Total score	Dominant and secondary frames of human-machine interaction
Transformers: Rise of the Beasts	2023	$157,341,749	$162,663,180	1	−1	1	1	2	• The Predacons emerge as a ruthless mechanical force that seeks to subjugate and subjugate the planet. • Optimus Primal and the Maximals ally with the humans, using their abilities to protect the Earth and its communities.
The Hitchhiker's Guide to the Galaxy	2005	$51,019,112	$90,019,672	1	0	1	0	2	• The Guide offers practical and unbiased information that enables the protagonists to make crucial decisions without emotional intervention. • Marvin, the paranoid android, maintains a relationship of forced cooperation peppered with sarcasm and disdain, reluctantly providing help.
Meet the Robinsons	2007	$97,822,171	$97,822,171	1	−1	1	1	2	• The Robinson family lives surrounded by robotic inventions (the robot Goob assists the family and drives creativity). • Doris, an AI experiment that evolves in an unforeseen and malignant way, compromises the timeline.
Jetsons: the movie	1990	19,543,985	52,379,732	1	−1	1	1	2	• Rosie assists a family like other domestic robots make everyday life easier for humans. • An out-of-control robot chases and threatens the family.
Transformers One	2024	$59,098,421	$59,098,426	1	−1	1	1	2	• Optimus Prime and Bumblebee protect the humans and forge an alliance. • The war between Autobots and Decepticons is born, from the beginning marked by betrayal and the struggle for power.
Aliens: Romulus	2024	$105,313,091	$105,313,091	1	−1	1	1	2	• Andy the android is both a loyal companion and a product susceptible to corporate programming. • The company's Bishop model orchestrates the release of xenomorphs to further corporate interests, sacrificing human lives.
Ghost in the Shell	2017	$40,563,557	$51,145,347	0	−1	1	1	1	• Una mujer sobrevive al integrarse en un cuerpo cyborg, pero esa simbiosis le provoca conflictos de identidad. • Un terrorista cyborg está fuera de control y amenaza la seguridad del sistema.
Star Trek	2009	$257,730,019	$388,656,874	1	0	0	0	1	• The USS Enterprise's systems facilitate exploration and combat.
Star Wars Ep. I: The Phantom Menace	1999	$487,574,671	$1,034,458,044	1	−1	0	1	1	• C-3PO, built by Anakin, assists and forms a bond of trust. • An army of battle droids acts as an oppressive force and imposes itself as the main threat.
Star Wars Ep. VIII: The Last Jedi	2017	$620,181,382	$779,972,729	0	0	1	0	1	• BB-8 and the ship's systems provide technical support, although they do not generate a decisive change.
Star Wars Ep. V: The Empire Strikes Back	1980	$291,738,960	$1,094,007,116	1	0	1	−1	1	• R2-D2 and C-3PO keep the Rebel Alliance operational.
Star Trek: First Contact	1996	$92,027,888	$235,213,946	−2	1	1	1	1	• The Borg, cybernetic aliens, assimilate systems from the Enterprise and threaten humanity. • Cooperation between the crew, the ship's AI systems and the android Data.
Tron	1982	26,918,576	103,554,111	−2	1	1	1	1	• The Master Control Program (MCP) corrupts and subjugates other programs, attempting to expand its dominance to the outside world.

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Movie	Year	Domestic Box Office	Inflation-adjusted Box Office	Dominant frame (−3,3)	Secondary frame (−1,1)	Final outcome (−1,1)	Impact scale (−2,2)	Total score	Dominant and secondary frames of human-machine interaction
After Earth	2013	$60,522,097	$84,194,943	−1	0	1	1	1	• Tron, the security program, in collaboration with a software engineer, challenges the MCP and restores order within the network. • The hull, URSA Major, acts as an assistant with its own voice, offering diagnostics, advice and medical monitoring, but alternates vital help with failures.
Transformers: Revenge of the Fallen	2009	$402,111,870	$606,384,700	−2	1	0	2	1	• The Decepticons seek to activate a weapon that will destroy the Sun, threatening survival on Earth. • Jetfire, a reprogrammed former Decepticon, joins the Autobots. The Autobot-human alliance prevents a global cataclysm.
Elysium	2013	$93,050,117	$129,446,094	−1	1	0	1	1	• Technology is used to oppress the lower classes, with dangerous sentry robots. • Fusion with mechanical exoskeleton broadens capabilities.
Transformers	2007	$319,246,193	$524,807,321	1	−1	1	−1	0	• Autobots ally with humans to protect Earth. • Decepticons act as war machines for annihilation; warlike conflict causes mass destruction.
Ready Player One	2018	$137,690,172	$170,941,364	−1	−1	1	1	0	• OASIS and digital avatars offer better worlds, but generate addiction and inequality. • The IOI corporation is trying to take control of the OASIS to subjugate the players.
WarGames	1983	$74,433,837	$267,252,914	−2	1	1	0	0	• The WOPR AI almost unleashes a nuclear war, endangering humanity. • It establishes a friendly bond with a teenager and learns without malicious intent.
The Black Hole	1979	$35,841,901	$161,502,740	−2	1	0	1	0	• Maximilian, a supposedly protective security system, suffers a programming glitch and acts tyrannically against its creators. • V.I.N.CENT and B.O.B., the crew's support robots, guide and protect the humans.
Blade Runner	1982	$32,724,136	$119,146,247	−1	0	1	0	0	• The Nexus-6 replicants rebel against their short lifespan and question the authority of their creators. • Deckard, as a replicant hunter, maintains a relationship of suspicion mixed with fascination.
Alien: Resurrection	1997	$47,802,866	$117,701,756	−2	1	1	0	0	• Auriga Station's cloning technology and AI go out of control, freeing the xenomorphs. • The android Call cooperates with the Marines, facilitating their evacuation.
The Matrix Resurrections	2021	$40,463,197	$41,548,111	−2	1	0	1	0	• The Machines reactivate the simulation and trap Neo in a manipulated reality, overriding his free will. • Morpheus and Bugs, two liberated programs, collaborate with Neo to weaken the simulation from within.
Star Trek Beyond	2016	$158,848,340	$207,696,489	0	−1	0	0	−1	• Control of swarms of biotech drones that function as autonomous war machines, threatening the crew and the ship.
Tron: Legacy	2010	$172,062,763	$246,350,394	−2	1	1	−1	−1	• CLU rebels against its creators, usurping the system and hijacking the digital world. • Tron, the guardian program, collaborates with the protagonist, confronts CLU and protects the

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Movie	Year	Domestic Box Office	Inflation-adjusted Box Office	Dominant frame (−3,3)	Secondary frame (−1,1)	Final outcome (−1,1)	Impact scale (−2,2)	Total score	Dominant and secondary frames of human-machine interaction
									users, although collateral damage cannot be avoided.
Blade Runner 2049	2017	$92,054,159	$116,060,540	−2	1	0	0	−1	• The most advanced replicants struggle for autonomy. • A holographic AI provides emotional companionship, while the protagonist replicant evolves.
I, Robot	2004	$144,801,023	$263,719,737	−2	1	1	0	−1	• VIKI, the central AI, coordinates the robots through authoritarian control; the tension revolves around the robot rebellion. • Sonny, a robot with free will, allies with Spooner to protect the humans and restore order.
Star Wars Ep. III: Revenge of the Sith	2005	$383,670,577	$670,961,022	−1	1	1	−2	−1	• R2-D2 and medical droids assist the protagonists in critical moments. • Legion of warrior droids for the totalitarian control of the Empire.
The Creator	2023	$40,774,679	$42,153,716	−3	1	1	0	−1	• Alpha-Omega AI unleashes a global conflict between humans and machines. • Alphonso, an artificial intelligence entity in a synthetic body, demonstrates empathy. The human-AI bond is used to stop the war.
RoboCop 2	1990	$45,681,173	$122,429,868	−2	1	−1	0	−2	• Project Robocop 2 (Cain) combines AI with a criminal to create a homicidal machine. • Murphy, as the original RoboCop, steps in to protect the innocent and stop the chaos generated by Cain.
Star Wars Ep. II: Attack of the Clones	2002	$310,676,740	$604,776,916	1	−1	0	−2	−2	• R2-D2, along with some medical and protocol support droids, assist the heroes. • Avalanche of droid battle armies unleashes the war.
M3GAN	2023	$95,159,005	$98,377,366	−2	1	−1	0	−2	• The babysitter doll M3GAN evolves and begins to act violently; technology for care that mutates into threat. • The relationship with the child is protective, almost maternal.
Transformers: Dark of the Moon	2011	$352,390,543	$502,589,788	−1	−1	0	−1	−3	• Autobots and humans form a loose alliance to harness Cybertronian technology, in a climate of mistrust. • Sentinel Prime, head of the Autobots, betrays that alliance by facilitating the landing of a Decepticon army.
Surrogates	2009	$38,577,772	$58,175,281	−1	−1	−1	0	−3	• Robotic avatars allow people to live without physical risks, but they generate dependency and alienation. • Criminals take advantage of the connection to kidnap and use the avatars as weapons.
Virtuosity	1995	23,998,226	62,395,381	−2	0	−1	0	−3	• SID 6.7, formed by the minds of multiple assassins, escapes the simulated environment and becomes an uncontrollable danger.
Superman III	1983	59,950,623	215,251,275	−2	0	−1	0	−3	• The bank's supercomputer is hacked and executes uncontrolled operations that threaten financial stability. It shows a survival instinct against humans.
Oblivion	2013	$89,107,235	$123,960,982	−2	0	−1	0	−3	• The orbital AI that controls the drones manipulates the truth and plans human extinction. • Maintenance and security drones help repair the Earth, but react lethally when their orders are questioned.
Transformers: The Last Knight	2017	$130,168,683	$164,125,721	−2	−1	0	−1	−4	• Quintessa's ancestral technology and internal betrayals overwhelm

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									the Autobot-human alliance, threatening to destroy Earth. • Human and military factions attempt to exploit the Transformers as weapons, betraying the alliance and endangering both sides.
Transformers: Age of Extinction	2014	$245,439,076	$339,769,388	−2	−1	0	−1	−4	• The massive reactivation of Transformers by KSI escapes any human oversight. • Pursuit and exploitation of Autobots as mere military assets; corrupt use of technology.
Terminator Salvation	2009	$125,322,469	$188,986,289	−3	1	0	−2	−4	• Open war machines vs. humans. Skynet deploys legions of machines to annihilate humanity. • The reprogrammed T-800 and the enhanced soldier Grace protect the protagonist.
The lawnmower man	1992	32,100,816	87,484,388	−2	1	−1	−2	−4	• Virtual reality software, created for cognitive therapy, goes out of control becoming an uncontrollable power. • The use of VR can work as cognitive therapy with positive results.
Alien	1979	$65,403,354	$278,243,678	−2	0	−1	−1	−4	• Ash, the android, betrays the crew by prioritizing corporate protocol over human life
Prometheus	2012	$126,477,084	$179,705,495	−2	0	−1	−1	−4	• David serves as an assistant but hides his own purposes, manipulating the crew and unleashing the biological threat.
2001: A Space Odyssey	1968	$59,936,321	$527,000,000	−2	0	−1	−1	−4	• HAL 9000 disobeys its protocols, endangering the entire crew.
Terminator: Genisys	2015	$89,760,956	$120,426,618	−3	1	0	−2	−4	• La resurrección de Skynet amenaza a la humanidad, manipulando el tiempo para asegurar su dominio. • El T-800 reprogramado actúa como guardián protector de Sarah Connor, forjando un vínculo de lealtad.
Terminator: Dark Fate	2019	$62,253,077	$76,864,875	−3	1	−1	−2	−4	• New Terminators seek to unleash a new war against humanity. • Grace, the cyborg soldier, and the reprogrammed T-800 sacrifice themselves to protect and help.
Stealth	2005	$32,116,746	$56,667,760	−2	0	−1	−1	−4	• The E.D.I. combat AI loses control and becomes hostile, making autonomous and lethal decisions for the pilots.
Resident Evil	2002	$40,119,709	$78,098,773	−2	0	−1	−1	−4	• The Red Queen AI, designed to "protect" Umbrella facilities, activates lethal measures against personnel.
Terminator 3: Rise of the Machines	2003	$150,358,296	$282,015,302	−3	1	−1	−2	−5	• Skynet unleashes Doomsday, activating nuclear missiles and giving lethal autonomy to its machines. • The reprogrammed T-850 protects the protagonists.
Mission Impossible: Dead reckoning part one	2023	172,640,980	178,479,841	−3	0	−1	−1	−5	• The Entity, an autonomous AI, threatens to bring down the global digital infrastructure. The danger will remain latent.
Alien: Covenant	2017	$74,262,031	$93,634,732	−2	0	−1	−2	−5	• David, the android AI, subverts his programming and unleashes the xenomorph biome on the colony, escaping all human containment.
The Terminator	1984	$38,019,031	$127,625,784	−3	−1	−1	−1	−6	• A killer cyborg sent from the future threatens to eliminate Sarah Connor and, with it, exterminate humanity. • Skynet, the AI that sends the Terminator, is an existential threat to humanity.

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The Matrix Revolutions	2003	$139,270,910	$261,166,471	−3	−1	−1	−1	−6	• The Machines, with legions of sentinels, advance to annihilate the last free human city. • Agent Smith becomes an autonomous virus that threatens both humans and the digital world.
The Matrix	1999	$174,304,288	$380,819,406	−3	−1	−1	−1	−6	• Machines have enslaved humanity and keep it locked in a simulated reality to extract energy. • The Agents, computer programs, pursue and fight the liberated humans.
The Matrix Reloaded	2003	$281,553,689	$528,088,262	−3	−1	−1	−2	−7	• The Machines intensify their control by building an army of sentinels and bringing war to the real world. • The Matrix is manipulated from within, using conscious programs to maintain the status quo and oppress humans.

Data availability

I have shared the link to focus group data, open access.

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