Artificial Intelligence in U.S. Media: A Stereotype Content Model Analysis, 2000–2024

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Introduction

Since the 1950s, computer scientists, cognitive psychologists, and an array of other disciplines have questioned what it means to be intelligent by establishing the field of artificial intelligence (AI), challenging that even machines can be intelligent. After 70 years of research, AI is finally emerging from its isolation within academic circles and is now garnering the attention of the general public. In fact, it has not only established itself as a well-designed technology that ought to be discussed, but as an emerging social actor. Undeniably, humans are increasingly interacting with AI as it would with other humans. Thus, it is important to not only understand how, but why humans stereotype AI and what influences us to that perception to begin with. This study investigates news media coverage as a causal mechanism for AI stereotypes by borrowing the stereotype content model (SCM) from the field of social psychology as the guiding theoretical framework.

Research Questions

1. How has the framing of AI for the SCM warmth and competence dimension changed in U.S. news media between 2000–2024?
2. Which SCM quadrant is AI framing within U.S. news media most predominantly situated in across all variables including medium, political orientation, news source, and temporal shifts?
3. How does AI framing within U.S. news media vary depending on the news organization's political orientation and medium?

Theoretical Framework

Stereotype Content Model (SCM) Social groups are perceived along two dimensions, **warmth** and **competence**, producing four quadrants with distinct emotional responses:

- **Admiration:** high warmth, high competence
- **Pity:** high warmth, low competence
- **Envy:** low warmth, high competence
- **Contempt:** low warmth, low competence

Corpus

Table 1. Corpus Description by News Organization

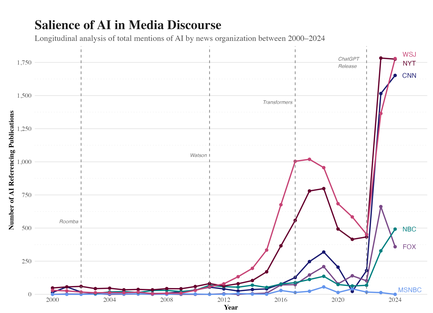
News Organization	Source	Medium	Political Orientation	Date Range	Coverage Documents (N)	AI Relevant Coverage Documents (N)	Frequency of AI Coverage (%)
NYT	New York Times website	Print	Left-leaning	2000-2024	2,138,244	8,401	0.4%
WSJ	Wall Street Journal website	Print	Right-leaning	2000-2024	1,325,079	9,497	0.7%
NBC	NBC website	Print	Center	2003-2024	1,291,479	1,910	0.1%
FOX	Harvard Dataverse / Fox website	Broadcast	Right-leaning	2001-2024	1,830,593	1,871	0.1%
MSNBC	Harvard Dataverse / MSNBC website	Broadcast	Left-leaning	2003-2023	135,012	236	0.2%
CNN	Harvard Dataverse / CNN website	Broadcast	Center	2000-2024	334,016	4,737	1.4%

Methodology

- **Diachronic Analysis:** Time-series frequency analysis quantified how prominently AI featured in coverage and how this shifted across the study period.
- **Sentiment Analysis:** Documents scored on warmth and competence dimensions of the Stereotype Content Model using the SADCAT dictionary.
- **Statistical Analysis:** (source-year level, $n = 117$):
  - Mann-Whitney U — print vs. broadcast
  - Kruskal-Wallis — political orientation (left/center/right) and source
  - Spearman's ρ — temporal trend (2000–2024)

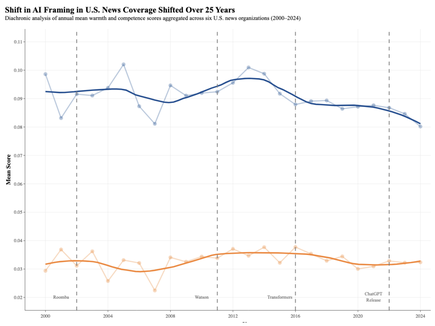
Dimension	Number of Words	Sample of Dictionary
Warmth (Hi)	988	accountable, collaborative, ethic, open, trustworthy
Warmth (Lo)	2247	aggressive, contradictory, decitfulness, illusionary, inequitable
Competence (Hi)	1147	ability, efficiency, knowledge, proficient, rational
Competence (Lo)	619	absurd, imprecise, misunderstand, silly, unoriginal

Frequency Results



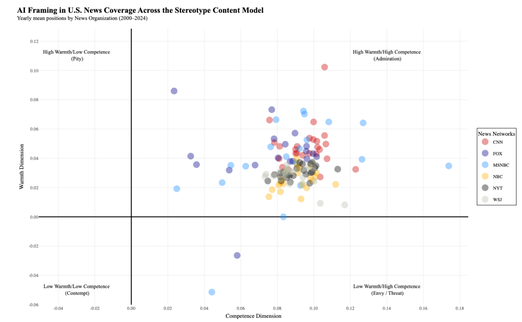
AI coverage remained minimal across all six sources through 2015, with fewer than 100 annual mentions per outlet. Coverage rose gradually from 2016 onward, coinciding with AlphaGo's 2016 victory and the introduction of the Transformers architecture in 2017. The ChatGPT release in December 2022 triggered an unprecedented surge — annual AI mentions in the New York Times and Wall Street Journal exceeded 1,750 in 2023, roughly a tenfold increase over pre-2022 levels. Broadcast outlets followed the same trajectory at lower volume, with MSNBC consistently lowest.

Diachronic Results



The blue line (competence) and orange line (warmth) show diachronic trends across all six aggregated sources between 2000–2024. Warmth remained stable around 0.03, while competence gradually declined from 0.10 in the early 2000s to 0.08 by 2024. Despite major AI milestones including Roomba, Watson, Transformers, ChatGPT, framing along these dimensions has remained consistent.

SCM Results



Across all sources and 25 years of coverage, AI consistently framed AI within the high-warmth/high-competence quadrant of SCM, means clustered between warmth scores of 0.01–0.06 and competence scores of 0.06–0.13.

Statistical Results

Table 2: Statistical Analysis of AI Framing in U.S. News Coverage (2000–2024)

SCM Dimension	Comparison	Test	Statistic	p-value		Effect Size
Warmth	Medium	Mann-Whitney U	3,093.000	< 0.001	***	r = 0.75
	Political Orientation	Kruskal-Wallis	0.320	0.8522	ns	$\eta^2 \approx 0$
	Source	Kruskal-Wallis	69.240	< 0.001	***	$\eta^2 = 0.579$
	Year	Spearman ρ	0.085	0.3644	ns	-
Competence	Medium	Mann-Whitney U	2,031.000	0.0265	*	r = 0.21
	Political Orientation	Kruskal-Wallis	4.550	0.103	ns	$\eta^2 = 0.0223$
	Source	Kruskal-Wallis	9.290	0.0982	ns	$\eta^2 = 0.0386$
	Year	Spearman ρ	-0.209	0.0236	*	-

Note: Per APA (2026) statistical significant, ns p = ≥ 0.05 (not significant), *p = ≤ 0.05 (significant), **p = ≤ 0.01 (highly significant), ***p = < 0.001 (extremely significant). For the effect size (ES), Per Cohen (1988) for the Mann-Whitney U test, r = .10 (small ES), r = .30 (medium ES), r = .50 (large ES). Per Tomczak & Tomczak (2014) for the Kruskal-Wallis test, η^2 = .01 (small ES), η^2 = .06 (medium ES), η^2 = .14 (large ES). Per Cohen (1988) for Spearman's rho test, ρ ≥ .10 (small ES), ρ ≥ .30 (medium ES), ρ ≥ .50 (large ES). The number of tests at the source/year equate to (n = 117) for this study.

Discussion

Key Findings & Implications

- AI is consistently framed in the **Admiration quadrant** across all sources, mediums, and years.
- Medium drives framing more than ideology, **broadcast frames AI with ∼70% higher warmth than print** ($p < .001$, $r = 0.75$), while orientation showed no significant effect.
- Findings suggest news media coverage is **not representative** of general public consensus specifically in relation to AI.

Limitations

- News data is limited to U.S. mainstream (paid) mass news media
- The corpus is restricted to data available online, creating gaps in data

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