# CHATTY ACTORS: GENERATIVE AI AND THE REASSEMBLY OF AGENCY IN QUALITATIVE RESEARCH

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## ABSTRACT

In this essay, we explore how generative AI can contribute to qualitative research by examining its potential to reassemble agency. Specifically, we suggest that the affordances of Large Language Models and generative AI facilitate three distinct ideal-typical agentic possibilities: Generative AI as a *research assistant* that supports researchers by functioning as an administrative assistant and interactive conversation partner; generative AI as a *data analyst* that can be programmed by the researcher to analyze data with enhanced, dynamic pattern recognition; and generative AI as *co-author* that can act as a semi-autonomous agent in the pursuit, discovery, and refinement of new knowledge. Paralleling these three modes of actorhood, we introduce three principles of governance that management researchers can embrace to mitigate against the potential abuses of generative AI.

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"An actor is what is made to act by many others."
"Remember that if an actor makes no difference, it's not an actor."
– Latour (2005: 46; 130)

Talk of large language models (LLMs) has become ubiquitous. Building on the invention of the novel Transformer network architecture (Vaswani et al., 2017), LLMs are able to generate text through prediction models that incorporate billions of parameters, have been trained on massive texts, and feature the ability to do in-context learning, instruction following, and step-by-step reasoning (Zhao et al., 2023). In turn, humans utilize LLMs by engaging in different types of "prompting" techniques (Wei et al., 2023) or "fine-tuning" methods that use focused human feedback as a means to elicit desired results from the LLM (Christiano et al., 2023; Ouyang et al., 2022). The intuitive natural language interface and human-like responsiveness of LLMs thus have the potential to profoundly reshape human and machine interactions (Kennedy and Phillips, 2023; Murray et al., 2021).

In addition to their many other applications, LLMs and other generative artificial intelligence (AI) technologies offer the potential to dramatically impact the research process. Already, enthusiastic and entrepreneurial faculty have promoted the transformational benefits of the technology, with some offering seminars on "Using ChatGPT for Automated Literature Review[s]," "Using ChaptGPT for Academic Publishing," and "Using ChatGPT for Automated Grant Writing" (Instats, 2023). At the same time, skeptics question the utility of these tools, suggesting that "researchers embracing ChatGPT are like turkeys voting for Christmas" because reliance on AI will "deskill the mental sphere" and "impoverish … theoretical and analytical skills" (Lindebaum, 2023).

In this essay, we explore how generative AI can contribute to qualitative research by examining its potential to reassemble agency (Gehman et al., 2022; Glaser et al., 2021; Latour,

2005). Specifically, we suggest that the affordances of LLMs and generative AI facilitate three distinct ideal-typical agentic possibilities: Generative AI as a *research assistant* that supports researchers by functioning as an administrative assistant and interactive conversation partner; generative AI as a *data analyst* that can be programmed by the researcher to analyze data with enhanced, dynamic pattern recognition; and generative AI as *co-author* that can act as a semi-autonomous agent in the pursuit, discovery, and refinement of new knowledge. Paralleling these three modes of actorhood, we introduce three principles of governance that management researchers can embrace to mitigate against the potential abuses of generative AI (see Table 1).

**Generative AI as Research Assistant**

The interface for LLMs, popularized by OpenAI's product ChatGPT, is the *prompt* (Glaser et al., 2023). ChatGPT uses "interactive forms to provide detailed and human-like responses to questions raised by users" that can handle a variety of tasks including "text summarization, text completion, text classification, sentiment, analysis, translation, etc." (Zhang et al., 2023, p. 5). A researcher can engage in interactive prompting by integrating some simple principles that can enhance the assistance provided by the LLM, such as providing the LLM with a perspective, tasking it to write in a certain style, or seeking for specific information on the internet (Mollick, 2023a). These capabilities can be incredibly useful to anyone, particularly researchers, and as such ChatGPT or Bing's GPT-4 enabled browser have been described as having access to your own "AI intern" (Mollick, 2023b).

To explore the possibilities that this powerful feature affords, we looked back to our previous research and brainstormed about how an LLM might have helped us advance our research process. For example, one of the challenges in Glaser et al.'s (2016) study of online advertising was trying to understand the language used in the world of online display advertising,

as the empirical context was complex and challenging to understand. Retrospectively, we asked ChatGPT Plus some questions about the empirical context that would have been useful to understand, and we found that ChatGPT Plus provided superficial but accurate synopses of the data, providing useful background information.

From a research perspective, it is important to recognize that there are limitations on such output generated by LLMs, such as "hallucinations…where the generated information is either in conflict with the existing source data (intrinsic hallucination) or cannot be verified by the available source (extrinsic hallucination)" (Zhao et al., 2023, p. 26). Although it is likely that this problem will become less severe as generative AI techniques advance, clearly the theoretical arguments underlying scientific knowledge claims must be accurately represented. We therefore suggest that scholars using LLMs as a research assistant follow the principle of *citation*: whenever data is used, the original source should be cited. Note, we are not suggesting it is necessary to continually cite the LLM itself; rather the researcher should cite the appropriate original sources. For instance, in the case of Glaser et al.'s (2016) study, the resulting timeline could reference the original source documents and materials surfaced by ChatGPT Plus.

**Generative AI as Data Analyst**

Underlying LLMs is the capability of recognizing patterns, which also is one of the core principles of qualitative research (Glaser and Strauss, 1967; Kelle, 2005). Although much public attention has been paid to the tendency for LLMs to "hallucinate" (Edwards, 2023), it is likely that these tendency can be—and are already being—rapidly adjusted through the process of targeted reinforcement learning from human feedback (RLHF) (Christiano et al., 2023; Ouyang et al., 2022). Behind the scenes, LLMs can be "tuned" in two important ways: the performance of the model can be improved through "instruction tuning" and the "values" of the model can be

improved through “alignment tuning” (Zhao et al., 2023, pp. 15–20). The performance of LLMs in pattern recognition also can be enhanced through more complex prompting such as “chain-of-thought” prompting (Wei et al., 2023) and “tree-of-thought” prompting (Long, 2023). Complex prompting and RLHF capabilities of generative AI will only increase over time, and these affordances will provide researchers with powerful ways to advance their research.

As RLHF becomes more sophisticated, one can imagine situations in which the researcher programs the algorithm to engage in very specific coding activities. One can imagine using chain-of-thought prompting to identify different potential codes of interest, and then tasking the AI data analyst to identify all the instances of those different options. It even seems possible that the AI analyst might identify further categories or examples that human coders missed. In many ways, generative AI offers qualitative researchers the opportunity to apply the constant comparative method (Strauss and Corbin, 1998) in faster, more comprehensive, and more novel ways.

In governing the role of generative AI as data analyst, the principle of citation does not go far enough. And, citing the LLM itself is not necessarily going to allow replicability, as the algorithmic nature of generative AI produces different results for the same prompt (Zhao et al., 2023). Consequently, we need to move beyond citation, and thus introduce the principle of *transparency*: the researcher should clearly articulate the steps taken in their analysis. In the case of prompting, this would require documenting the prompts used, even in their complexity (this may require the use of appendices in papers). In the potentially future case of scholar-tuned RLHF techniques, this might require detailed description of the tuning practices implemented by the researcher.

**Generative AI as Co-Author**

With these capacities, can LLMs ultimately be considered a co-author? In the first two methods of reassembling agency, generative AI serves to augment researcher capacity, but stops short of making independent contributions. However, computer science research is already pushing on the notion that generative AI can create "generative agents" which are computationally powered and "can serve as believable proxies of human behavior" (Park et al., 2023, p. 2). This is created by the development of an "agent architecture" that consists of three components: a memory stream that reflects the agents' experiences, reflections which "synthesize memories into higher-level inferences over time, enabling the agent to draw conclusions about itself and others to better guide its behavior" and planning ,which translates this analysis into "high-level action plans" and "detailed behaviors for action and reaction" (Park et al., 2023, p. 2). This architecture has the potential to allow for agents to engage in "role-playing" which can help develop cooperative behaviors between different AI agents in multi-agent systems (Li et al., 2023).

At the moment, generative AI is still in its infancy, an early-stage technology. It is not clear the "dominant design" has yet emerged (Anderson and Tushman, 1990). But already there are signs that generative AI could represent a general purpose technology with the potential for widespread impacts—akin to gunpowder, the printing press, electricity, or the internet. Relative to the research process, one potential is that in the future we will all have our own AI doppelgänger, a specially "tuned" agent that can finish our sentences for us. Or, perhaps even more provactively, write entire papers in conversation with us.

For the next generation of Ph.D. students, perhaps this happens in real-time alongside the seminars they are taking. For instance, imagine training your personal GPT agent using the

comprehensive exam questions and answers from prior cohorts of your department, feeding it all of the articles and article summaries you and your classmates generate each week as part of your seminar preparation, giving your AI agent redline edits of your advisor's comments on drafts of your papers, and so on. All of this seems well within reach—even without this effort, existing LLMs can already help emulate your voice.

But generative AI also raises new questions about research ethics. As discussed above, it is already possible to discern the emergence new AI-related disclosure practices consistent with scientific norms—i.e., communalism; universalism; disinterestedness; originality; skepticism (e.g., Merton, 1973; Ziman, 2000). But from a governance standpoint, the possibility of co-authorship begs a more fundamental question: how should institutional review boards (IRBs), which are ubiquitous within universities, respond to the use of generative AI in the research process? It seems clear that IRBs will need to devise new heuristics for the AI era.

**Conclusion**

Clearly, generative AI and LLMs are actors: they are "made to act by many others" (Latour, 2005: 46). Increasingly these "others" include academics. At the same time, it seems clear these new AI agents have the potential to make a considerable difference in how research is conducted, which is at the very heart of what it means to be an academic. All of this novelty and concern provides fertile research terrain for organization and management scholars, and it seems to us that we will be well served to maintain a reflective posture that considers how these reconfigurations of modes of assembling agency influence values (Lindebaum et al., 2022) and reinforces the importance of doubt to the research process (Weick, 1998).

## REFERENCES


Allyn, B. (2023, May 30). 'Mitigating the risk of AI should be a global priority, open letter says'. *NPR*. Available At https://www.npr.org/2023/05/30/1178919245/mitigating-the-risk-of-ai-should-be-a-global-priority-open-letter-says (accessed 15 June 2023).

Anderson, P. and Tushman, M. L. (1990). 'Technological discontinuities and dominant designs: A cyclical model of technological change'. *Administrative Science Quarterly*, **35**, 604–633.

Andreessen, M. (2023, June 6). 'Why AI Will Save The World'. *Marc Andreessen Substack*Substack newsletter, . . Available At https://pmarca.substack.com/p/why-ai-will-save-the-world (accessed 15 June 2023).

ATLAS.ti. (2023). 'AI Coding powered by OpenAI'. *ATLAS.ti*. Available At https://atlasti.com/ai-coding-powered-by-openai (accessed 29 May 2023).

Bai, Y., Kadavath, S., Kundu, S., Askell, A., Kernion, J., Jones, A., et al. (2022, December 15). 'Constitutional AI: Harmlessness from AI Feedback'. Available At http://arxiv.org/abs/2212.08073 (accessed 13 May 2023).

Bansal, P. (Tima) and Corley, K. (2012). 'Publishing in AMJ—part 7: what's different about qualitative research?'. *Academy of Management Journal*, **55**, 509–513.

Bloomberg. (2023). 'Introducing BloombergGPT, Bloomberg's 50-billion parameter large language model, purpose-built from scratch for finance | Press | Bloomberg LP'. *Bloomberg L.P.* Available At https://www.bloomberg.com/company/press/bloomberggpt-50-billion-parameter-llm-tuned-finance/ (accessed 15 June 2023).

Chomsky, N., Roberts, I., and Watumull, J. (2023, March 8). 'The false promise of ChatGPT'. *The New York Times*. Available At https://www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html (accessed 15 June 2023).

Christiano, P., Leike, J., Brown, T. B., Martic, M., Legg, S., and Amodei, D. (2023, February 17). 'Deep reinforcement learning from human preferences'. Available At http://arxiv.org/abs/1706.03741 (accessed 15 April 2023).

Cloutier, C. and Ravasi, D. (2021). 'Using tables to enhance trustworthiness in qualitative research'. *Strategic Organization*, **19**, 113–133.

DeCelles, K. A., Howard-Grenville, J., and Tihanyi, L. (2021). 'From the editors—improving the transparency of empirical research published in AMJ'. *Academy of Management Journal*, **64**, 1009–1015.

Dreyfus, H. L. (1967). 'Why computers must have bodies in order to be intelligent'. *Review of Metaphysics*, **21**, 13–32.

Dreyfus, H. L. (1992). *What computers still can't do: a critique of artificial reason*, Cambridge, MA: MIT Press.

Edwards, B. (2023, April 6). 'Why ChatGPT and Bing Chat are so good at making things up'. *Ars Technica*. Available At https://arstechnica.com/information-technology/2023/04/why-ai-chatbots-are-the-ultimate-bs-machines-and-how-people-hope-to-fix-them/ (accessed 10 April 2023).

Gehman, J., Sharma, G., and Beveridge, 'Alim. (2022). 'Theorizing Institutional Entrepreneuring: Arborescent and rhizomatic assembling'. *Organization Studies*, **42**, 289–310.

Gehman, J., Treviño, L. K., and Garud, R. (2013). 'Values Work: A Process Study of the Emergence and Performance of Organizational Values Practices'. *Academy of Management Journal*, **56**, 84–112.
Glaser, B. and Strauss, A. C. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*, New Brunswick, NJ: Aldine Transaction.
Glaser, V. L., Fiss, P. C., and Kennedy, M. T. (2016). 'Making Snowflakes Like Stocks: Stretching, Bending, and Positioning to Make Financial Market Analogies Work in Online Advertising'. *Organization Science*, **27**, 1029–1048.
Glaser, V. L., Gehman, J., and Sloan, J. (2023). 'Organizations as algorithms: a new management metaphor'Working paper, .
Glaser, V. L., Pollock, N., and D'Adderio, L. (2021). 'The biography of an algorithm: performing algorithmic technologies in organizations'. *Organization Theory*, **2**, 26317877211004610.
Guba, E. G. and Lincoln, Y. S. (2005). 'Paradigmatic controversies, contradictions, and emerging confluences'. In N. K. Denzin and Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research*, Thousand Oaks: Sage, Vol. 3rd, 191–216.
Harari, Y. N. (2023, May 6). 'Yuval Noah Harari argues that AI has hacked the operating system of human civilisation'. *The Economist*. Available At https://www.economist.com/by-invitation/2023/04/28/yuval-noah-harari-argues-that-ai-has-hacked-the-operating-system-of-human-civilisation (accessed 15 June 2023).
Instats. (2023). 'Using ChatGPT for Academic Publications and Grants with Drs Steel, Fariborzi'. *Instats*. Available At https://instats.org/structuredcourse/chatgpt-for-academic-paper-writing2515 (accessed 25 May 2023).
Kang, C. (2023, May 16). 'OpenAI's Sam Altman Urges A.I. Regulation in Senate Hearing'. *The New York Times*. Available At https://www.nytimes.com/2023/05/16/technology/openai-altman-artificial-intelligence-regulation.html (accessed 15 June 2023).
Kelle, U. (2005). '"Emergence" vs. "Forcing" of Empirical Data? A Crucial Problem of "Grounded Theory" Reconsidered'. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*. Available At (accessed 14 January 2015), **6**.
Kennedy, M. T. and Phillips, N. (2023, April 25). 'The Participation Game'. Available At http://arxiv.org/abs/2304.12700 (accessed 30 April 2023).
Latour, B. (2005). *Reassembling the social*, New York: Oxford University Press.
Li, G., Hammoud, H. A. A. K., Itani, H., Khizbullin, D., and Ghanem, B. (2023, March 30). 'CAMEL: Communicative Agents for "Mind" Exploration of Large Scale Language Model Society'. Available At http://arxiv.org/abs/2303.17760 (accessed 24 May 2023).
Lindebaum, D. (2023, May 2). 'Researchers embracing ChatGPT are like turkeys voting for Christmas'. *Times Higher Education (THE)*. Available At https://www.timeshighereducation.com/blog/researchers-embracing-chatgpt-are-turkeys-voting-christmas (accessed 27 May 2023).
Lindebaum, D., Moser, C. C., Ashraf, M., and Glaser, V. L. (2022). 'Reading the technological society to understand the mechanization of values and its ontological consequences'. *Academy of Management Review*. Available At https://journals.aom.org/doi/10.5465/amr.2021.0159 (accessed 7 August 2022).
Long, J. (2023, May 14). 'Large Language Model Guided Tree-of-Thought'. Available At http://arxiv.org/abs/2305.08291 (accessed 24 May 2023).

Merleau-Ponty, M. (1968). *The visible and the invisible*. (C. Lefort, Ed., A. Lingis, Tran.), Evanston, IL: Northwestern University Press.
Merton, R. K. (1973). *The sociology of science: theoretical and empirical investigations*, Chicago, IL: University of Chicago Press.
Mollick, E. (2023a, March 29). 'A guide to prompting AI (for what it is worth)'. Available At https://www.oneusefulthing.org/p/a-guide-to-prompting-ai-for-what (accessed 27 May 2023).
Mollick, E. (2023b, March 29). 'On-boarding your AI Intern'. Available At https://www.oneusefulthing.org/p/on-boarding-your-ai-intern (accessed 27 May 2023).
Murray, A., Rhymer, J., and Sirmon, D. (2021). 'Humans and Technology: Forms of Conjoined Agency in Organizational Routines'. *Academy of Management Review*, **46**.
Ouyang, L., Wu, J., Jiang, X., Almeida, D., Wainwright, C. L., Mishkin, P., et al. (2022, March 4). 'Training language models to follow instructions with human feedback'. Available At http://arxiv.org/abs/2203.02155 (accessed 27 May 2023).
Park, J. S., O'Brien, J. C., Cai, C. J., Morris, M. R., Liang, P., and Bernstein, M. S. (2023, April 6). 'Generative Agents: Interactive Simulacra of Human Behavior'. Available At http://arxiv.org/abs/2304.03442 (accessed 11 April 2023).
Strauss, A. C. and Corbin, J. M. (1998). *Basics of Qualitative Research: Second Edition: Techniques and Procedures for Developing Grounded Theory*, Los Angeles, CA: Sage, 2nd edition.
Vaswani, A., Shazeer, N., Parmar, N., Uszkoreit, J., Jones, L., Gomez, A. N., et al. (2017, December 5). 'Attention Is All You Need'. Available At http://arxiv.org/abs/1706.03762 (accessed 27 May 2023).
Wei, J., Wang, X., Schuurmans, D., Bosma, M., Ichter, B., Xia, F., et al. (2023, January 10). 'Chain-of-Thought Prompting Elicits Reasoning in Large Language Models'. Available At http://arxiv.org/abs/2201.11903 (accessed 13 April 2023).
Weick, K. E. (1998). 'The attitude of wisdom: ambivalence as the optimal compromise'. In S. Srivastva and D. L. Cooperrider (Eds.), *Organizational wisdom and executive courage*, San Francisco: New Lexington Press, 40–64.
Wu, S., Irsoy, O., Lu, S., Dabravolski, V., Dredze, M., Gehrmann, S., et al. (2023, May 9). 'BloombergGPT: A Large Language Model for Finance'. Available At http://arxiv.org/abs/2303.17564 (accessed 15 June 2023).
Zhang, Chaoning, Zhang, Chenshuang, Li, C., Qiao, Y., Zheng, S., Dam, S. K., et al. (2023, April 4). 'One Small Step for Generative AI, One Giant Leap for AGI: A Complete Survey on ChatGPT in AIGC Era'. Available At https://arxiv.org/abs/2304.06488v1 (accessed 14 April 2023).
Zhao, W. X., Zhou, K., Li, J., Tang, T., Wang, X., Hou, Y., et al. (2023, March 31). 'A Survey of Large Language Models'. Available At http://arxiv.org/abs/2303.18223 (accessed 6 April 2023).
Ziman, J. M. (John M. ). (2000). *Real science: what it is, and what it means*, New York: Cambridge University Press. . Available At http://archive.org/details/isbn_9780521772297 (accessed 15 June 2023).

**TABLE 1 – WAYS OF REASSEMBLING AGENCY IN QUALITATIVE RESEARCH**

| **Agentic Mode** | **Focal Capability** | **Research Affordance** | **Governance Principle** |
|---|---|---|---|
| Research Assistant | Simple prompting | Interactive conversation partner and administrative assistant | Citation and verification |
| Data Analyst | Complex prompting and tuning | Enhanced dynamic pattern recognition | Transparency and trustworthiness |
| Co-Author | Generative agents | Open-ended, goal-focused exploration | Institutional Research Board (IRB) |