

Unsworth/Joyce abstract

“Thinking with Algorithms: Cognition and Computation in the Work of N. Katherine Hayles”

## Elegance, Speed and Collaboration: Working with Algorithms in the 21<sup>st</sup> Century

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### Abstract

News stories about algorithms evoke Hayles’ critique of the post-human, with algorithms ascribed agency and the materiality of working with and creating algorithms obscured. Media headlines, for example, such as “*How algorithms rule the world*” (Hickman, 2013) and “*The algorithm method: Programming our lives away*” (Basen, 2010) illustrate this trend. Following Hayles’ (1999, p.5) call to bring “the flesh that continues to be erased in contemporary discussions” back into analysis, this paper draws on in-depth interviews and fieldwork at three field sites where computer scientists, software engineers, designers, and epidemiologists work with algorithms to create and mine data sets. As part of understanding the materiality of algorithms, we take up Hayles’ concept of the post-human as a vehicle to theorize the teams that work with and design the algorithms (Hayles 1999). Rather than returning to a liberal humanist understanding of the human, this paper shows how the team, as a unity, is the post-human entity. This move decenters both the individual and the algorithm to show how collaboration is central to creating and working with algorithms. Gender is central to the embodiment of the post-human. Most teams are comprised of men who then work in spaces (with stakeholders and each other) that are also populated predominately by men. The performance of masculinity varies within these constructs and plays a role in the how the this post-human entity is realized.

Our research opens the black box that surrounds algorithms including the ethics and values that drive their creation, use, and design. It is critical to understand the values that shape algorithms since the data retrieved by the algorithms ultimately shape the information which drives policy. The incorporation of values into computing work is an established practice. Friedman’s *value*

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*sensitive design* is one such example that has gained widespread acceptance in the field (Friedman 1997). Scholars have discussed the recursive element of algorithms as post-human acts, yet we assert the need to redirect the query back to the individuals who design the algorithms and identify the values that drive their work. In our research, speed, efficiency and collaboration are central to working with algorithms, demonstrating both the values and materiality that comprise post-human work.

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### References

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