



THE HIDDEN LIBRARY ANNEX  
BRYAN C. DANIELS

---

Bryan C. Daniels investigates the logic of collective behavior in living systems, integrating empirical data with theoretical concepts from statistical physics, model selection, and information theory. During doctoral studies at Cornell University, he began work on applications of statistical physics to biological systems, including DNA supercoiling and cellular biochemistry. His post-doctoral research at the Santa Fe Institute, the University of Wisconsin–Madison, and Arizona State University expanded to include social conflict, neural decision-making, behavioral contagion in animal groups, and automated dynamical inference. He is now an Assistant Research Professor in the School of Complex Adaptive Systems within the College of Global Futures at Arizona State University. He is currently coediting a special issue of *Theory in Biosciences* titled “Quantifying Collectivity.” – Address: School of Complex Adaptive Systems, Arizona State University, Tempe, Arizona, 85281, USA. E-mail: [bryan.daniels.1@asu.edu](mailto:bryan.daniels.1@asu.edu).

I know how you feel. I was there a year ago, putting off unpacking in an empty apartment, jetlagged, and dazed by a bright leafy view of the lake, an impossible dream world. Your box of desert island books shipped from home hasn’t arrived yet – and I hate to have to tell you that you are unlikely to find the time to open more than one of them during your stay – but you noticed the neatly organized line of *Jahrbuch* paperbacks on the shelf. You are skimming through these essays now, sitting on that crisp no-nonsense Bauhaus couch, with vague hope of inspiration, hope of communion with Fellows of years past, hope that you can make the best of this peculiar outpost of academia.

Can I give you a hint, then, of what you will get out of this experience? I am a scientist, used to more straightforward exposition, but in the spirit of interdisciplinarity – let me tell you a story.

It was just a few weeks before we were set to return to the US, and I was walking back from the Edeka having picked up some *Zimt* (my favorite German word at the time) for an upcoming baking contest back at the Villa Walther. As I knew well by then, among the impressive, cleanly manicured estates and embassies, in true Berlin patchwork style, there stands along the path a sudden mess of an abandoned mansion. It is near the Norwegian ambassador's house: for directions, consult your guide to Grunewald walks, also provided there on your bookshelf. Overgrown and mysterious, I had always been curious to hop the fence and see what was inside.

It was only on that particularly drizzly day that, noticing the gate unlocked and no one nearby, I found the sudden recklessness to dash through the front door. Once my eyes adjusted inside the dripping vestibule, I saw only shadows and cobwebs and döner kebab wrappers. I nearly left as quickly as I came.

Then, out of the corner of my eye, I spotted a glinting set of shelves down a hallway. Moving closer, I was surprised to find one of those clean Wiko signboards: "Fellows' Library Annex." Funny they didn't mention this on the introductory tour...

My curiosity piqued, I leafed through the dusty contents. The author names were familiar – Fellows from my cohort. With only a brief twinge of vanity, I followed the alphabetical listing to my own name and, opening up a folder, found one of my familiar recent publications. A backup copy for the enthusiastic librarians, I supposed.

But then – there were more. It seemed straight out of Borges: I found two more titles remaining whenever I took one off the shelf. The next article was dated 2024 and included someone I had met over Wiko coffee just the previous month (Daniels, B. C. and Gadagkar, R. A parsimonious theory of the collective effects of social hierarchy in *Ropalidia marginata*. *Proc. Natl. Acad. Sci. USA* 121 (14): 6249, 2024). I wanted to stop and read it, but was too distracted by the next two hefty edited volumes that popped into its place:

- Spamann, H., Daniels, B. C., and Harel, A. (eds.). *Law as collective decision-making: The crystallization of distributed morality*. New York: Oxford University Press, 2027.
- Bada, X., Helbing, D., Daniels, B. C., Kormina, J., and Wheatley, N. (eds.). *Functional social organization across scales: Troupes, Unions, Religions, Cities, Nations*. Cambridge: Cambridge University Press, 2030.

Amazing! I had had my hopes, but this seemed hard evidence that my fellowship was destined to create far-reaching collaborations! I had to see more. I was amassing a growing pile:

- Daniels, B. C. and Kristal, E. Collective tension and relaxation in wartime literature: A quantitative analysis. *J. Roy. Soc. Interface* 20:20230242, 2023.
- Daniels, B. C., Galizia, G., and Auer, M. Hierarchical versus distributed agency: The lessons of honeybee society for understanding the effects of algorithmic consumer profiling. *Aeon*, September 24, 2022.
- Kikuchi, D., Stark, D., Daniels, B. C., and Strauss, S. A computational modeling framework for innovation in social and biological evolution. *Phil. Trans. Roy. Soc. B* 384 (1892): 20280349, 2029.
- Pittis, A. and Daniels, B. C. The evolutionary design of elementary neural decision-making. *Science* 375 (343): 124–129, 2031.

After many hours of this I was bleary-eyed and late for dinner, having flipped through hundreds, maybe thousands of post-dated publications bearing my name. I started taking photos, but deep into the night even my smartphone gave up, complaining there was “not enough memory.” Scribbling the most interesting citations onto scraps of paper, I hoped that one day I would be able to recreate at least some fraction of them. There were just so many. Finally, exhausted, I gave up, climbed down from the mountain of printed materials, pocketed my notes and my *Zimt*, and headed home.

Along with other notes jotted down after colloquia, lunches, dinners, and working groups, those scraps are stacked now in my office too numerous to summarize in any reasonable amount of time or word limit here. I can offer only a few more samples:

- Daniels, B. C. and Brayboy, L. Quantifying the oocyte mitochondrial DNA bottleneck. *PLOS Biology* 22 (3): e2004969, 2024.
- Herberstein, M. E., Daniels, B. C., Mappes, J. “My spidey senses are tingling!”: An educational VR experience illustrating perceptual decision-making, the spreading of traits via mimicry, and evolutionary theory. *Journal of Virtual Education* 2:0552319, 2028.
- Yang, Z. and Daniels, B. C. Crypticity in poetry and biology. *Santa Fe Institute Bulletin*, Summer, 2023.
- Daniels, B. C. and Varzi, A. C. Collective definitions of collective individuals. *Synthese* 198:4239–4258, 2021.
- Popkirov, S. and Daniels, B. C. The contributions of belief-spreading dynamics to functional disorders. *Frontiers in Psychiatry* 16:1, 2025.

Harder to categorize was an eclectic CD from the opera “Harmonia,” set to stage by Krystian Lada, which included the track “The Sorrow of Physics,” an aria with lyrics by Georgi Gospodinov, scientific direction by Bryan Daniels, and modified piano by Marco Stroppa.

And finally, a large coffee-table book (Lott, M. J. *Yarn-Bombing: A Retrospective*. Foreword by B. Daniels. Cologne: Taschen, 2019) was a special treat, as it included a number of glossy photos of a future version of the Wissenschaftskolleg campus (adorned with fiber arts alongside the newly-installed virtual reality pods), which confirmed that there was at least one possible future in which we would be back to visit.

Unfortunately for you, the above materials are among the very few that the zealous library staff will not be able to acquire during your stay. Your only option is to visit that unnatural abandoned annex yourself – but I cannot recommend it. It is all too easy to get lost in alternate realities, each of which contains a dazzling array of possibilities, leading to fast-multiplying branches that quickly become too numerous to fit in a single lifetime. It’s a tangle that you will begin to recognize for yourself as you sit down to lunch every day.

Oh, and one final word of advice: Keep your colloquium introductions short! One sentence suffices.