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Conclusions and Reimaginings

As we begin our approach toward the final landing place for this volume, let's take a look at this book from the 30,000-foot level: we're in a small Cessna jittering across the sky and the words and code and tangents are splattered like Pollock-rejects across the canvas of the earth. From here, the book's logic might look even clearer than when you're in the eye-level depths of AnSpec sludge. Let's see what's around.

If we map the terrain of this book, we have admittedly dawdled across the familiar contexts of expected learning spaces. Assuming that you first ventured through the introduction of this book, the organization of this book's chapters should not be all that surprising.

The explorations of formal schooling environments, of libraries, of gaming domains, makerspaces: these are all par for the course of what educational researchers in the twenty-first century *should* attend to. Sure, you might be a little sick of the sci-fi references or might quibble with the Python examples, but we hope that this book's approach should be familiar to an educational research audience.

Considering that this book generally covers the terrain of most educational research books might cover, we want to present an opportunity for a grand critique of the book itself. We encourage you to feel unfulfilled as you reach the end of this book. Is this it? The

future of data, design, and justice, and we are still confined to the same basic premises of schooling, of assessment, and of how data are or are not included within these systems?

The pragmatists in us have been sitting in the writing cockpit for too long, and we are ejecting them for the final pages of this book. We are writing at the scale of widespread freedom and momentarily ask you to let your penchant for practicality parachute down to earth on its own (it will be waiting for you safely when we're done here).

If you have been wading through the overlapping contexts of harm and institutionalized repression in schooling and informal learning structures across our recent past, then you know that the pragmatic steering toward fixed destinations of assessment and progress have not staunched the wounds to individuals' safety, to democratic structures, or to collective societal repair. Ours is a moment that is pregnant with far too many existential crises all competing for our very limited attention. You should feel *unsettled* in the way this book has hewed so closely to the existing systems of education. Frankly, we should be unsettled with this status quo across books, across systems of education, and across our collective endorsement of it writ large. Why have we made it so easy to box our entire field into a set of finite and unimaginative constraints? Can we divvy up learning so easily?

AnSpec, as an epistemological and axiological framework, should strike us all as a reminder of how reductive and harmful our field continues to be. When we can easily count where educational research lives and what it values, we can consider the boundaries we have imposed on ourselves. What does academic "achievement" mean if students are still expected to labor within conditions that cause harm to them, further stratify social classes, and erode the world's capacity to sustain us for much longer? Our focus on technocratic solutions to generations-long moral dilemmas has failed us as a field. No amount of bandwidth or pixels or RAM or data in general can lift the shroud of inequities that envelop us vis-à-vis capitalism, racism, and exploitation. If there is a kind of memory that might be leveraged

for transformation, it is a memory of an imagination that has been sapped from Western schooling and cultural practices.

In the spirit of the situationists who helped guide aspects of this work in chapter 5, we seek to twist the familiar threads of educational research into new knots and unravel those that have not been harboring good. We want to intentionally *deconstruct* not only the premise of this book but also of educational research and the role of data writ large.

Deconstruction as Pedagogy

The truth of the matter is that to move forward we must not rely on the technocratic and meritocratic assumptions that drive edtech as dominant forms of schooling interventions. Instead, we turn to everyone's favorite quippy poststructuralist, Jacques Derrida. Rather than advocate for a pure or essential form of data or of design or even of learning, we learn from Derrida (1978) that not only is there not a *true* form, but also that we must reject such positivist notions in our work and, yes, in AnSpec. Like the fundamental principles of philosophy that Derrida sought to redefine (or undefine), we must treat the frameworks here—of AnSpec and of guidance for design—“as tools which can still be used. No longer is any truth value attributed to them; there is a readiness to abandon them, if necessary, should other instruments appear more useful” (Derrida, 1978, p. 284).

This deconstructionist bent is not about simply putting our hands up and saying that, if linear definitions do not comfortably fit the myriad forms and desires of the living world, we must give up. On the contrary: we are offering the tools of AnSpec in this book, as flawed as they may be, as malleable to the needs and conditions of lived and constantly mutating life. We must fold these processes back into the rich loam of educational and policy discourse, nudge our

field ever further out of a system that is comfortable in using common metrics to measure individuals against. The ideas here and in educational research in general must be “employed to destroy the old machinery to which they belong and of which they themselves as pieces” (Derrida, 1978, p. 201).

So, cautiously allowing the pragmatists to rejoin us in this conversation about deconstruction, data, and pedagogy, let us consider the ways we might need to upend existing practices and research approaches while still hoping to remain gainfully employed under the current contexts of Western teaching institutions. From within classrooms, we might intentionally critique the forms of data development and leverage an AnSpec framework as a pedagogical tool. Discussing with young people of all ages the role of data as it imposes on their lives might reveal the myopic focus on singular characteristics and the ways in which such assessment-guided bluster drops us into predetermined and harmful categories.

We are asking researchers to keep their feet planted firmly in a terrain that works both critically and expansively across the varied domains of AnSpec. This includes, first, utilizing myriad forms of robust and humanizing research practices that best affirm the ingenuity and possibilities proliferating in our varied learning environments today. It also means simultaneously seeking to work beyond a world in which data might be categorized by tools of individuality and by metrics of being known or not known by state-funded tools that surveil, harm, and suppress. The data-induced dysphoria of these contrasting demands is substantial. But rather than slowly boil in the world as it is, we can craft something new.

Propositions for a New Educational Data (Dis)order

Books take a long time to write (unless you happen to be Joyce Carol Oates). In the years we have taken to write and subsequently revise

this book, new continents of data exploration have been discovered, pillaged, and discarded. The technocratic cycle of capitalism is a rapid one.

Indelible in our memories is the fomented optimism amidst uncertainty and fear during the prolonged and ineffective national response to the COVID-19 pandemic. A focus on distant and hybrid forms of schooling shaped much of the first year of the pandemic to a widespread consideration of attention, the use of cameras, and the understanding of the limitations of facial recognition in a society of masked individuals (for surveillance as well as to unlock our phones). We might have rubber-banded back to a norm of adult-centered forms of authority and power in schooling since the pandemic and, while the jury is still out, our relationship to data vis-à-vis the pandemic has largely remained the same. The tools for *collecting* data beget that data collection. Statistics about logging on, about staying present in online spaces, and about student achievement have only become greater part of an increasing hysteria about learning loss in a world where more than a million individual lives have succumbed to a wireless and viral pandemic. Which data matter and to whom?

Similarly, though dire on a more existential front, the advance of machine-automated image and text generation and artificial intelligence (AI) presently threatens familiar forms of schooling and learning. What does it mean to learn to code (or even use the examples in this book) when you can use plain (but still “standard”) English to have an online tool write and create computer scripts for you? Why should you write an essay about the role of data and privacy in an undergraduate ethics course when this same tool can probably guarantee you at least a B-level version of the same in seconds?

The hand-wringing about schools, teaching, and AI focuses on tools as shortcuts to labor but not shortcuts to critical thinking, empathy, or joy. Dall-E 2, OpenAI’s image-generating tool, has been a source of frequent delight for Antero’s kids (we refrain from saying “constant” delight here as “credits” limit the frequency with which

we use it). Typing in images their then three-year-old's heart desires to see has been a magical process that traditional photos online cannot produce: anteaters eating tacos; anteaters eating tacos in a pool; anteaters sitting at a desk watching a show about tacos; an anteater riding a blue bicycle and wearing yellow shoes; and so on. (Anteaters and tacos turn out to be pretty popular in the Garcia household.) Like any other toy we might use in moderation with our kids, AI might be a tool to harness for play. It might also whack our learning practices into new terrain. That too is part and parcel of the nature of a society that does not stay still. The antsy-ness that we see in the adolescent forms of twenty-first-century pedagogy is also a dissatisfaction with twenty-first-century forms of injustice cloaked in schooling and data. Throughout this book, we have explored data, justice, and creative play in education. It would be so convenient to tie everything up and come to a sentence-long conclusion. But Derrida won't let us.

When we submitted a few chapters of this book to the publisher, one of the criticisms made (by a very good and helpful reviewer) was that the book was too “flip”: that serious issues should not be enjoyable to read—that is, they are serious and should be taken seriously. Respectfully, that tradeoff speaks to the book itself. What is rigorous? What is serious? How can you deal with the lived realities of oppression and authoritarianism and oligarchy in a way that would be most helpful to people without angering them? It is unlikely that there is a single answer, but the argument that classically “academic” writing (perhaps using classical analyses to follow classical rhetoric) is the only way to take serious issues seriously seems to be the same fallacy that underpins misbehavior with data and authoritarian pedagogies. Not everyone is working in good faith and not everyone is amenable to systematic empirical arguments or solid theoretical perspectives. Arguments must adapt, whether we like it or not, and that adaptation will require data, a focus on acting justly, and probably a bit of blind hope . . . whether we like it or not.

This book is one long conclusion; we have made it hard on ourselves. Most books in the field keep it tight or go broad—better options, both—but we have tried to thread a needle with a haystack. Plainly, we hope that every reader can now look critically at the intersections among data, education, justice, and play. We think they might also be able to explore learning analytics, make beats, and recontextualize Ivan Illich in modern schooling.

We are but voices voiceless on a page, and we cannot make you do anything. Learning is hard; books hold no control. A senior faculty member—an expert in theories of pedagogy—once told Matthew that a new perspective on an old phenomenon is among the most powerful gifts of good pedagogy. This book is overfull of perspectives. How do you take these perspectives and use them in your life, classroom, museum, after-school club, with your kids, or with your parents?

To close this book, we offer five propositions for how we design for deconstruction, (dis)order, and possibility. These are propositions that we hope are self-evident at this point and useful to young people, teachers, researchers, policymakers, and any other individuals and communities willing to put into practice the principles that move us from dreaming to building *through* dreaming. We ask you to dream-build with us:

- 1. Look at the specifics of how identity is encoded; encode identities in ways that are explicitly antiracist, antisexist, and prosocial.**

If you cannot articulate how an identity is encoded, it is probably encoded in a problematic way. Does your automatic faucet work 80 percent of the time? Whose attempts lie in the 20 percent faucet-failure category, and how does the simple math of an automatic faucet implicitly encode identity? The process through which we must consider a “racist soap dispenser” is not a labyrinthine one (Plenke, 2015). It involves simple design aspects overlooked and diverse perspectives absent in the creation and iteration process.

If you are not explicit about how you think about race, gender, and bias in your system—whether in rules, law, program code, or otherwise—it is going to encode the hegemonic structures implicit in whatever data you are using. We started this book with descriptions of how schools are pressured to substitute test scores for human caring; that is only one example among millions of ways that data implicitly encodes injustice. In our final chapters, we (hopefully) made generative suggestions on how we might combat that injustice. Chang-Bacon (2022) suggests the term “race evasiveness” for the discomfort that (for example) white engineers, teachers, and designers have in specifically saying “we need to explicitly make sure that this faucet is not anti-Black.” Implicitly coding identity in statistics is an implicit form of race evasiveness.

2. Find the surprising and creative; enable people to break the system.

Learning is creative; you cannot learn to understand something without trying to do something with it. If content is generated and governed only by the teacher or facilitator and no “handles” exist for learners to create something that is meaningful—or at least culturally relevant—to them, then you should evaluate whether it is a learning environment or simply a mechanism of control.

3. Malicious compliance is at the heart of good pedagogy; find and amplify points of resistance and friction.

There is a contradiction at the heart of pedagogy between authority and respect. Apple (2004) identified it as the fundamental conflict between capitalism and education; if the teacher is the boss, then the students should necessarily have little say. Again, using Apple as a guide here, what is important is how you—whatever your role is—enable students to organize against inequity, against racism, in solidarity. This is the power of education even if schools are loci of capitalist ideologies (so are factories, perhaps, but that is where you will find a union to join). Illich’s vision, despite antitechnocratic intention and

with only 20/20 hindsight, can be (mis-)read as a defense of a techno-libertarian dystopia. From where do we get the next Illich, or is the lesson that there should not be one?

4. Perceive assessment as control; decide why, when, and how you evaluate and assess.

Assessment is the tail that wags the dog. Two just possibilities for conscious interaction among assessment, data, and privacy exist: obfuscate assessment or make just measures. Obfuscating assessment is merely delay: structures of control will catch up with individual dissent, but a perennial truth of education is that students are different every semester, every year, and standards change almost as quickly. Teachers rarely remain in the job more than a few years. Assessment that *works* will be valued, even if it is not assessment that works the ways that the administration wants it to work.

5. Embed respect for people and context; everything at every level is cultural, social, and connected, and nothing is individual.

Designing requires appending meaning from one component or phenomenon or individual or system to another. It is a delicate balance of networking and “knotworking” (Engeström, 2008). Don’t forget, however, that tangled in these webs of design and data and learning are *communities*. People and our cultures and our love are bound up in the systems powered up in our scholarship.

We invite you to design boldly, loudly, and without the pragmatist always driving every decision. We often sacrifice the liberatory in search of the pragmatic. We settle for dehumanizing because the alternatives require that we do the groundwork of collaboration, organization, and action. Our scholarly pursuits of justice cannot sit idle as we sleight-of-hand a definition of *equity* from one palm to the next. We must work toward iteratively adapting and dismantling new frameworks as we step from the present moment into the future.

This is a section of [doi:10.7551/mitpress/14381.001.0001](https://doi.org/10.7551/mitpress/14381.001.0001)

The Left Hand of Data

Designing Education Data for Justice

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Citation:

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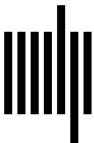
DOI: 10.7551/mitpress/14381.001.0001

ISBN (electronic): 9780262377645

Publisher: The MIT Press

Published: 2024

The open access edition of this book was made possible by generous funding and support from MIT Press Direct to Open



The MIT Press

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The MIT Press would like to thank the anonymous peer reviewers who provided comments on drafts of this book. The generous work of academic experts is essential for establishing the authority and quality of our publications. We acknowledge with gratitude the contributions of these otherwise uncredited readers.

This book was set in Stone Serif and Stone Sans by Westchester Publishing Services.

Library of Congress Cataloging-in-Publication Data

Names: Berland, Matthew, author. | Garcia, Antero, author.

Title: The left hand of data : designing education data for justice /
Matthew Berland and Antero Garcia.

Description: Cambridge, Massachusetts : The MIT Press, [2024] | Includes
bibliographical references and index.

Identifiers: LCCN 2023030088 (print) | LCCN 2023030089 (ebook) |
ISBN 9780262547529 (paperback) | ISBN 9780262377652 (epub) |
ISBN 9780262377645 (pdf)

Subjects: LCSH: Education—Data processing. | Education—Research. |
Educational evaluation.

Classification: LCC LB1028.43 .B45 2024 (print) | LCC LB1028.43 (ebook) |
DDC 370.285—dc23/eng/20230718

LC record available at <https://lccn.loc.gov/2023030088>

LC ebook record available at <https://lccn.loc.gov/2023030089>