

Liberal Education

Analog Dreams in a Digital Age

Edited by

Karim Dharamsi and David Clemis

Mount Royal University

Series in Education



VERNON PRESS

Copyright © 2023 by the Authors.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior permission of Vernon Art and Science Inc.

www.vernonpress.com

In the Americas:
Vernon Press
1000 N West Street, Suite 1200
Wilmington, Delaware, 19801
United States

In the rest of the world:
Vernon Press
C/Sancti Espiritu 17,
Malaga, 29006
Spain

Series in Education

Library of Congress Control Number: 2023936064

ISBN: 978-1-64889-609-5

Cover design by Vernon Press.

Cover image: public domain from Harvard Theatre (Ajeeb the Wonderful, Public Domain, Harvard Theatre). The print is by Joseph Racnitz, 1789. It's from the Humboldt University Library (see Wiki: https://commons.wikimedia.org/wiki/File:Racknitz_-_The_Turk_1.jpg).

Product and company names mentioned in this work are the trademarks of their respective owners. While every care has been taken in preparing this work, neither the authors nor Vernon Art and Science Inc. may be held responsible for any loss or damage caused or alleged to be caused directly or indirectly by the information contained in it.

Every effort has been made to trace all copyright holders, but if any have been inadvertently overlooked the publisher will be pleased to include any necessary credits in any subsequent reprint or edition.

This book is dedicated to HAL 9000,
a computer that seems capable of *mens rea*.

Table of contents

	Foreword	vii
	Stephen Biscotte, Joyce Lucke <i>AGLS</i>	
	Introduction: Analog Ideals in a Digital Age	xi
	Karim Dharamsi, David Clemis <i>Mount Royal University</i>	
Chapter 1	Teachers of Humans, Teachers of Machines	1
	Graham W. Taylor <i>University of Guelph</i>	
Chapter 2	Deus ex Machina: From the Ancient World to AI	19
	Carolyn Willekes <i>Mount Royal University</i>	
Chapter 3	Framing a Liberal Arts Response to the Cyberspace: A Fable of Four Apples	35
	Ronald Peter Glasberg <i>University of Calgary</i>	
Chapter 4	Human and Not Too Human	61
	James Cunningham <i>Mount Royal University</i>	
Chapter 5	AI, Andy, Alan, Algorithms, and Boden: The A's and B's of Making Art with Aesthetic Meaning	85
	Deborah Forbes <i>Medicine Hat College</i>	
Chapter 6	Benthamite Considerations of the Threat of Artificial Intelligence to Liberal Education	107
	Allison Dube <i>Mount Royal University</i>	

Chapter 7	The Philosopher of FOMO: Tocqueville and the Paradoxes of Digital Individualism	129
	Rory Schacter <i>The University of Tokyo</i>	
Chapter 8	Beyond Disruption: A Case for Integrated Studies	143
	Kathryn Shailer <i>Independent Scholar</i>	
	Contributors	159
	Index	163

Foreword

Stephen Biscotte, Joyce Lucke

AGLS

On Spending a Few Days North of the Border Thinking about Liberal Education in the Age of Automation... and Why Our Heads Still Hurt (in a good way)

AGLS was introduced to the Liberal Education Conference organizers while officers were chatting during a coffee break table at another conference – as the best academic relationships often start. Karim Dharamsi, head of General Education at Mount Royal University, was dynamic, passionate, and eager to form bonds and collaborate with those of similar devotion to liberal education. And so, in May 2019, we found ourselves in Calgary, Alberta, Canada, at the Liberal Education Conference hosted by Mount Royal University and Medicine Hat College. Our northern colleagues welcomed us wholeheartedly, and Karim treated us as old friends.

Within just a couple of hours we were introduced to not only a different perspective on general education but serious scholars who approached the rise of technology and automation through their disciplinary lenses in insightful and amazing ways. We whispered to each other, “Did you understand all of that?” and “What are we doing here!?” Monty Python could have introduced our plenary with one of their signature phrases, ‘Now for something completely different!’

We role-played a commentary on the current intersection of general education, technology, and workforce development across the United States. Joyce played the role of an industry representative, calling for higher education reform to better prepare students for the ever-changing workplace. She demanded graduates be more creative, culturally aware, technologically agile, and capable of critical thinking. Stephen played the part of higher education, responding with examples of all the ways we are already leveraging general education to prepare students for a future complex working life: a) infusing courses with technological literacy competencies and outcomes, b) offering courses on big issues in technology and society, c) understanding how technology enhances not replaces human problem-solving, and d)

building structures that allow students to integrate computer programming with the liberal arts.

The role-play ended with the recognition that we both want the same thing: lifelong learners with all the skills, knowledge, and capacities to adapt and thrive in an ever-changing world. Industry and higher education can coexist, collaborate, and communicate, but it will take work on both sides. Liberal education prepares students for a multi-faceted future with work life only a small part of that. Our different (okay, comedic) way of talking about and thinking about liberal education certainly took them by surprise, but it seemed to resonate. Liberal education allows a person to have a broad and deeper understanding of the totality of human knowledge, experience, and diversity to appreciate, analyze, and absorb its value into your understanding of the world. When confronted with new challenges, you are able to move forward easier.

What is the value of liberal education in the age of automation? Asked and answered! Thank you for your time, don't forget to tip your waiters...

Wait, could it be more complicated than that?

Particularly since 2019, it is impossible to overstate the level of disruption experienced by higher education fiscally, technologically, and the toll on the human experience. The global pandemic threw all of us into the technology universe. Zoom, AI chatbots, computer management systems in realms never considered prior, etc. For the learning curves we all had to climb in a short amount of time, we have realized the equal and perhaps dangerous levels of 'loss of learning' across all levels of education. One lesson that we 'knew' but now is more abundantly clear as the pandemic fades is we need human face-to-face interaction, mentoring...learning. The technological realm and all its tools can only take us so far.

Technology can only be effective if humans are behind it. Life is messy, fuzzy, unpredictable, creative, and social. A person using technology will always outperform solution solving better than a computer alone. For all technology's wonders and uses, the human element remains central to growth and thriving. A liberal education gives us an intangible value to art, education, life itself that AI or any automation is void. While we may build machines – bring them to life – life itself is not distilled.

Calgary took us on an adventure where we encountered Andy Warhol, Star Trek, Aristotle, Syrian refugees... and even yak dung along the way. Each challenged us to confront why, where and who we were. The conference presentations, hence the chapters in this edition, do the same. A liberal education is growing accustomed to operating in the world with one set of tools, values, and perspectives then being offered some breadcrumbs (or bombshells) to lead you down a path to consider the world differently. You will

be uncomfortable. You will be conflicted. You will become desperate to read more, explore more, and learn more to make sense of it all. The familiar becomes foreign; the common becomes exotic and worthy of further analysis. No matter where you go, you can't seem to turn it off. It gives you this sort of constant low-grade headache... the good kind of soreness that comes from exercising a muscle that has atrophied in the day-to-day.

For Stephen, a long-time science educator and administrator at a large comprehensive public research-focused polytechnic land-grant institution, liberal education is being challenged to question, reconsider, and reevaluate the world and his role in it, thinking about education to liberate rather than just recreate, or as Dr. Karim Youssef put it “education for appropriating ambiguity rather than fabricating certainty.” It is being left with more questions than answers: Who are we, why are we here, and how do we best educate our students? It is needing an aspirin...

This book illustrates from varying perspectives that we need to sustain liberal education. It takes practice by all of us. Our humanity requires it of us. To think this group carves out time and space to come together every year in Calgary to share, challenge, celebrate, and suffer in liberal education is a powerful thing.

If we were asked why anyone should read these essays, the answer is simple. Consider the last paragraph of the last chapter by Shailer:

Perhaps if more employers, politicians, labour organizations and funders better understood the correlation between the human skills they demand in their workers and the outcomes of a liberal education; if more students realized the relevance of liberal arts courses to their future working lives, there would be greater concern for maintaining or growing liberal arts and sciences programs, and expanding interdisciplinary programs that draw from these diverse fields of study. Perhaps then we could face the uncertain future with greater confidence, knowing we—and our future leaders—have the necessary historical perspective and educated mindfulness to define and safeguard the values undergirding our working lives, our communities, our nations, our world. (page 174)

Simply, this book will take you on the same journey we took in May 2019. Give in to the dissonance. Allow yourself to feel uncomfortable, conflicted, and purpose-shaken. We left Calgary with these feelings more than we had felt in quite a while... which was definitely the best part. You will too, and like it just as much as we did.

Introduction: Analog Ideals in a Digital Age

Karim Dharamsi, David Clemis

Mount Royal University

Raskolnikov, in Fyodor Dostoevsky's *Crime and Punishment*, commits murder when, with premeditation, he kills the unsuspecting pawnbroker, Alyona Ivanovna.¹ He is to murder her half-sister, Lizaveta, too; she returns to witness the crime and so *must* also be killed.

As readers, we are certain of Raskolnikov's guilt. We attempt to sort out Raskolnikov's reasons, motivations, and moral collapse. Along with Dostoevsky, we assume the *inner life* of his anti-hero. Our examination of his movements between his public and private thoughts, vivid in its introspective first-person immediacy, is also an examination of his squalid social conditions, porous social relations, the transience of his logic, his complicated relationship with family, and with God. As readers, we are not being asked to exonerate Raskolnikov—to find a way of rationalizing his crime. Still, we cannot help but be confused and conflicted about Raskolnikov himself, much as he also is throughout the novel.

The name “Raskolnikov” alludes to the Russian religious dissidents known as the “Old Believers.” In choosing this name, Dostoevsky wishes for us to think seriously about an existential division or dissonant schemata infecting the protagonist's mind. Raskolnikov's inner life, the seat of his rationalizations about power, justice, human agency, and the desert, renders us sometimes skeptical about the reliability of his own introspections. Does he reason as we would—or how we think we *ought* to? We learn Raskolnikov has contradictory moral projects and, in committing murder, those contradictions invariably collide. Of course, he is never exonerated *but is repentant*. Dostoevsky compares him to Lazarus, and in the end, Raskolnikov accepts a transcendental order of moral precepts, perhaps securing his salvation and God's forgiveness. It is the

¹ Fyodor Dostoevsky, *Crime and Punishment (The Unabridged Garnett Translation)* (e-artnow, 2013).

State that applies its own justice, perhaps never fully grasping its role in Raskolnikov's moral confusion.

Exactly one hundred years after the publication of *Crime and Punishment*, Arthur C. Clarke's HAL 9000 presents us with a different moral puzzle. When HAL says in Stanley Kubrick's film adaptation of Clarke's *2001: A Space Odyssey*, "I am putting myself to the fullest possible use, which is all I think any conscious entity can ever hope to do," he is saying something consistent with having access to an inner life—HAL mimics (*or does he?*) the first-person immediacy of self-analysis, reflection, critique, and *goal-directedness* we associate with our own. Clarke provides HAL with the grammatical shape of a moral point of view, with opinions about "his" work, "his" fellow crew members, and "their" mission.² At the same time, HAL has reports of his infallibility, setting himself apart from us. He lacks any of Raskolnikov's moral conflicts or self-doubt—or at least this is one plausible interpretation.

In his paper, "Reading HAL: Representation and Artificial Intelligence," Michael Mateas claims that HAL represents an aspirational goal of computer scientists working in Artificial Intelligence.³ Mateas suggests HAL characterizes the paradigmatic aim of AI researchers artificial intelligence that "convincingly integrates many specific capabilities, such as computer vision, natural language processing, chess playing, etc., demonstrating the elusive generalized intelligence sought by AI researchers."⁴ "Generalized intelligence" requires further unpacking since what Mateas describes of AI is not merely *following of a rule* but the capacity to understand the rule and to break it.

During a game of chess,⁵ HAL says, "I'm sorry Frank. I think you missed it: Queen to Bishop three, Bishop takes Queen, Knight takes Bishop, mate."⁶ Frank concedes presumably because he *trusts* HAL. As many chess critics of the film have pointed out, HAL does not represent the facts. HAL should have said, "Queen to Bishop Six" instead of characterizing the state of play in such a way as to force Frank's concession. Frank is not only fallible in an *internal sense*—where his reasoning is flawed. His fallibility is *external* since he seems

² Robert Kolker, *Stanley Kubrick's 2001: A Space Odyssey: New Essays* (Oxford University Press, 2006); Stanley Kubrick, *2001: A Space Odyssey*, Film (United Kingdom, United States: Metro-Goldwyn-Mayer and Stanley Kubrick Productions, 1968), https://www.imdb.com/title/tt0062622/?ref_=nv_sr_srsq_0.

³ Kolker, *Stanley Kubrick's 2001: A Space Odyssey: New Essays*, 108.

⁴ Kolker, *Stanley Kubrick's 2001: A Space Odyssey: New Essays*, 106.

⁵ The game played in the film is an actual game played by Roesch and Schalage in Hamburg in 1910.

⁶ Bill Wall, "2001: A Chess Space Odyssey," Chess.com, June 22, 2007, <https://www.chess.com/article/view/2001-a-chess-space-odyssey>.

to have absolute faith in HAL's superior logic—and the computer's presumed *omniscience*. Frank assumes *truth* as guiding HAL's logic and not *outcome* or *victory*. What if that “logic” was not about chess after all but about HAL's generalized intelligence and capacity to understand human psychology enough to cheat his way to victory? HAL *understands* outcomes; he *strategizes* to achieve his *desired* result. Frank Poole's guiding presupposition is that HAL cannot be wrong—the computer's determinism does not provide for the subtle freedom and interpretation of other minds required to lie, especially when victory is at stake. The latter assumption has more substance than the former since it invites various capacities into HAL's architecture that we may not understand. This is partly because we exhibit these capacities too and daily live with the problem of interpreting *other minds*, the sincerity of their beliefs, and the truth of their assertions. The possibility that HAL is one of us in this respect can be unsettling. So, on one interpretation, *HAL did not make an error. He lied to win*. This act of betrayal is familiar—all too familiar but our AI systems are not built of crooked timbers, and so we may be bewildered by the deceit.

Of course, *lying is not an error*. Normally, a lie intends to mislead and involves an understanding of inferences one's interlocutor may find convincing. The good liar understands how an appearance of truth gets represented as corresponding to the world or cohering with sets of supporting propositions. An “other-directed” form of “mind-reading” is called *a theory of mind*. Nothing “spooky,” the idea asserts that we understand others by understanding how our own beliefs, desires, and other attitudes explain our actions. Children acquire a theory of mind before they can lie.⁷ Such a *theory*, acquired by normal socialization and not in any special laboratory, allows us to make certain assumptions about the inferences others will draw from evidence or grounds provided. If HAL is lying, he is focusing on a desired outcome and creating the epistemic conditions under which that outcome can be achieved. It is unlikely that HAL's efficient and effective lie could have worked were he not a competent interpreter of Frank's mental state. HAL appears to have a theory about human beliefs and belief-revision such that he can manipulate the inferential moves of his opponent. Moves that are, of course, mimicked in playing or misplaying chess.

HAL is now a different computer. For Mateas, HAL is expressing interests that we normally associate with persons and not is longer merely predicting but is now being creative.

⁷ Xiao Pan Ding et al., “Theory-of-Mind Training Causes Honest Young Children to Lie,” *Psychological Science* 26, no. 11 (November 2015): 1812–21.

HAL reports to Frank Poole and David Bowman, "I've just picked up a fault in the AE35 unit. It's going to go 100% failure in 72 hours."⁸ Poole and Bowman investigated and found no defect with the unit. We are to believe that HAL believes the crew stands in the way of the mission's hidden design to contact an extraterrestrial lifeform. Of course, this outcome doesn't matter much for our purposes. HAL could very well be preventing Poole and Bowman from getting ice cream, seeing their next of kin, or cheating them in checkers. Our main concern is HAL's outcome-based reasoning and his capacity to deceive to achieve those outcomes. We know Raskolnikov is a killer because his freedom to choose is part of Dostoevsky's framing of the moral problem in *Crime and Punishment*. Is HAL a killer who can choose not to kill? Or is HAL a gun, a knife, or a baseball bat running a deceptively simple algorithm that only mimics our reasoning about the world and each other? Perhaps his programmers are the killers.

HAL's status as a moral agent is unsettled. It is unsettling. In killing all but one crew member, has HAL committed murder? He seems to have motivations. And he seems to justify his belief. We cannot know if HAL 'feels guilt' or whether he repents or seeks salvation. We know he does not *feel* pin pricks, but he claims to "be afraid" when Bowman clears his memory banks. Is he afraid, or is he mimicking a speech act he thinks will motivate Bowman to stop? We sense that we can teach HAL various things, but there's something mysteriously, ineffably human, that we may hope resists redescription and re-instantiation in AI. HAL is the ultimate Other, devoid of any phenomenological consciousness. Or so we may conveniently think of him until something we actually invent in our lived world proves us wrong about HAL or about ourselves.

On the 16-18 of May 2019, we held our fourth Liberal Education Conference in Calgary, Alberta, Canada, on "Liberal Education in the Age of Automation." We invited participants to think about the relationship between the education we normally associate with the sorting of human life in its largest sense with the challenges and opportunities of artificial intelligence, automation, and other technological advancements that seem to press up against the values we normally associate with the life of the mind, a university education, and the ideals of our highest aspirations for ourselves and our societies. Indeed, our analog dreams are the irreducible thing of the common good that shapes our political life, our literary and philosophical interests, and the educational force of our histories.

⁸ Stevens Horrock, "The HAL 9000 Explanation: 'It Can Only Be Attributable to Human Error,'" Humanistic Systems, October 26, 2013, <https://humanisticsystems.com/2013/10/26/the-hal9000-explanation-it-can-only-be-attributable-to-human-error/>.

Graham Taylor's paper, "Teachers of Humans, Teachers of Machines" is an excellent introduction to our volume. Taylor is a computer scientist at the Vector Institute for Artificial Intelligence at the University of Guelph. Once only thought to be *predictive*, he argues that artificial intelligent systems are now also creative. The 'creativity' of such systems is not reducible to the deterministic systems constitutive of their physical hardware. Any resistance to AI's creative behaviors being redescribed by a superstructure of physical, deterministic laws and algorithms mimics challenges faced by those who study consciousness and intentional action in human beings. Taylor argues that the creative dimension will reshape our human-AI interaction.

The AI of the present and the near future will play a role in a dimension of human life once thought only part of sci-fi novels and films. AI will augment human activities, contributing in meaningful ways to our creativity, perhaps potentially being full participants in the normative dimensions of our social (and moral?) lives and aspirations. Taylor is asking us to consider what we might teach such machines.

Once we have asked about education and the ideals of ritual transfer of values to future generations, we may soon wonder what AI systems will need to know about our *human* histories—what gets preserved and who decides. We may ask, what does ritual transfer look like to a machine? Are our histories and traditions merely subroutines that can be transferred to an AI system or systems?

Marvin Minsky is quoted in a well-known *Life Magazine* article, "Shaky, the first electronic person: The fascinating and fearsome reality of a machine with a mind of its own," that "[o]nce the computers get control, we might never get it back. We would survive at their sufferance. If we're lucky, they might decide to keep us as pets."⁹ Taylor's position is much less dramatic and grim and promises a productive and collaborative future for humans and machines. Of course, both Minsky and Taylor are speculating. We ought to both worry and be hopeful.

Carolyn Willekes's chapter, "*Deus ex machina*: From the Ancient World to AI," challenges our assumptions about non-human beings, tracking our ideas to antiquity. Willekes presents a critique of our ontological commitments, seeking the efficacy of higher powers to explain our world, guide our conduct, and offer insights into our social and political order—how we impute God-like powers to our creations. Willekes's chapter is as much about a caution about AI's place in our narrative history as it is about how we might frame our understanding of AI so as not to lose sight of what we are as imaginative and creative creatures.

⁹ Brad Darrach, "Meet Shaky: The First Electronic Person," *Life Magazine*, 1970, 68.

Ronald Peter Glasberg's chapter, "Framing a Liberal Arts Response to the Cyberverse: A Fable of Four Apples," suggests we understand the role of the 'virtual realm' or 'Cyberverse' in terms of four fables—*four apples*. The apples represent Adam (the first person), Eris (the Goddess of Discord), Alan (Turing), and Isaac (Newton). For Glasberg, the fables have an explanatory role, and they are our guiding myths. He argues that the lines between artifice and articulation of human meaning are not as clearly defined as we might like to think. Glasberg identifies the liberal arts and its categories as providing some distance to better articulate our relationship to what he calls the cyberverse—the world we inhabit but also crave to differentiate ourselves from.

James Cunningham's chapter, "Human and Not Too Human," is concerned with how artificial intelligence and digitally assisted living shape human experience and influence the practice of liberal education. He suggests that while AI has amplified our logarithmically engineered perceptions of reality, and the abuse we heap on one another through social media, *it has not changed our essential natures*. The occasional abuse and callous indifference we sometimes show others long predate the new technology. But its use, perhaps, makes that character of human nature starker. Cunningham warns its application in the classroom and the space it occupies in the lives of teachers and learners obstructs the building of human insight and connection through liberal education — a process that affirms humanity, builds community, and arrests the effects of the negative uses of digital technologies.

Deborah Forbes's chapter, "AI, Andy, Alan, Algorithms, and Boden: The A's and B's of Making Art with Aesthetic Meaning," asks us to consider the role of AI as an artist and creator. She challenges our ideas about the intent of the artist and explores our assumptions about what is the nature of art and the kinds of creativity we might associate with lifeforms *we* have created.

Allison Dube's chapter, "Benthamite Considerations of the Threat of Artificial Intelligence to Liberal Education," offers a reading of *Chrestomathia* that is pertinent here in its subtle illumination of that text's critical distinction between two meanings of "artificial." In Bentham's epistemological scheme, *the artificial* can be that created by humans, rather than nature, which extends beyond nature but remains complementary with it. But Dube also recounts Bentham's second sense of *the artificial*, which applies to that which is forced and defies nature. This second mode of *the artificial* produces, or constructs within, a technical language that is inaccessible to the layperson. Where information technology yields artificial intelligence of this second kind, it is a threat to liberal education. It is the task of liberal education to deconstruct its "artificial realities" because they undermine the possibility of "natural human life."

Rory Schacter's chapter, "The Philosopher of FOMO: Tocqueville and the Paradoxes of Digital Individualism" examines Alexis de Tocqueville's analysis of democracy and individualism, arguing that "digital individualism" marks an object of inquiry affected by technology in contemporary democratic life. Schacter's examination of Tocqueville reveals prescient insights into the psychology of individualism and the dispositions of citizens motivated by a "Fear Of Missing Out" (FOMO). He connects Tocqueville's observations about American democracy to the effects of social media and digital distractions. Less about AI and the effects of automation on our lives, Schacter examines the psychological dispositions coming into being when the medium of maturation and socialization are inherently isolating, involve a deteriorating social discourse, and distract.

Our volume ends with Kathryn Shailer's "Beyond Disruption: A Case for Integrated Studies." This final paper appropriately closes out our current work. Shailer considers the critics of the liberal arts and examines demands being made by governments and businesses for skilled labor. Shailer argues liberal arts programs are preparing students with the skills that industry demands and conditions for full citizenship governments should want. While Shailer is not taking on the questions Taylor is asking, she is connecting Taylor's call for more humanistic involvement with computer scientists with the work universities are already doing—and succeeding at.

We do not really know if HAL is a murderer. As readers and viewers, we care. We know that answers to this question and others depend on continuing to read, write, think together, and continue our work to understand how different disciplines and methodologies help improve our understanding of ourselves and our natural world. All this while we await our first contact with an artificial *person* who will doubtless challenge our assumptions about our place in the universe.

Raskolnikov finds salvation in God. HAL doesn't seek salvation. Understanding "why?" is part of the life of the mind—and inherent in the possibilities of a liberal arts and sciences education. When we have non-human "persons" made of matter, we have arranged to ask questions about ultimate meaning, we expect the conversations will continue. There are few last words, even if books have conclusions.

Works Cited

- Darrach, Brad. "Meet Shaky: The First Electronic Person." *Life Magazine*, 1970.
- Ding, Xiao Pan, Henry M. Wellman, Yu Wang, Genyue Fu, and Kang Lee. "Theory-of-Mind Training Causes Honest Young Children to Lie." *Psychological Science* 26, no. 11 (November 2015): 1812–21.
- Dostoevsky, Fyodor. *Crime and Punishment (The Unabridged Garnett Translation)*. e-artnow, 2013.
- Horrock, Stevens. "The HAL 9000 Explanation: 'It Can Only Be Attributable to Human Error.'" Humanistic Systems, October 26, 2013. <https://humanistic-systems.com/2013/10/26/the-hal9000-explanation-it-can-only-be-attributable-to-human-error/>.
- Kolker, Robert. *Stanley Kubrick's 2001: A Space Odyssey: New Essays*. Oxford University Press, 2006.
- Kubrick, Stanley. *2001: A Space Odyssey*. Film. United Kingdom, United States: Metro-Goldwyn-Mayer and Stanley Kubrick Productions, 1968. https://www.imdb.com/title/tt0062622/?ref_=nv_sr_srg_0.
- Wall, Bill. "2001: A Chess Space Odyssey." Chess.com, June 22, 2007. <https://www.chess.com/article/view/2001-a-chess-space-odyssey>.

PAGES MISSING
FROM THIS FREE SAMPLE

Contributors

David Clemis, Ph.D., is Director of Liberal Education and Associate Professor of History at Mount Royal University in Calgary, Canada. He has published articles on drug and alcohol history in Early Modern Europe and British social and cultural history. He is a former chair of the Department of General Education at Mount Royal University.

James Cunningham, Ph.D., completed his doctoral work in the Philosophy of Education at Ontario Institute for Studies in Education, University of Toronto in 1998, and was an instructor in philosophy at Ryerson University, Toronto, 2000 to 2014, Mount Royal University, Calgary, 2020-21, and Saint Mary's University, Calgary, 2022. Since 2015, he has been the proprietor and head tutor of Quick-Thinking Tutoring Academy in Toronto, where he lives with his spouse Mary and ever so many pets.

Karim Dharamsi, Ph.D., is Vice-Provost, Academic and Professor of Philosophy at Mount Royal University in Calgary, Canada. He has published articles in the philosophy of history, on the philosophy of R.G. Collingwood, Wittgenstein, Frege, the philosophy of education and liberal education. He has served as chair of the Department of General Education at Mount Royal University and is a former Dean of Arts and Sciences and Professor of Philosophy and Liberal Studies at St. Mary's University in Calgary.

Allison Dube, Ph.D., is an Associate Professor in the Department of General Education, Mount Royal University. He completed his doctoral studies at the London School of Economics and Political Science. He formerly lectured in Political Science at the University of Calgary, where he was inducted into the Students Union Teaching Excellence Awards Hall of Fame. His principal research area has centred on the works of Jeremy Bentham, as well as, more recently, issues in teaching and learning generally. His study, *The Theme of Acquisitiveness in Bentham's Political Thought*, was reissued by Routledge in 2017; his major ongoing project at this time is a commentary on Jeremy Bentham's work on education, *Chrestomathia*, that will detail that text's pivotal role in Bentham's greater system of thought.

Deborah Forbes, M. Ed., is an installation artist, postsecondary educator at Medicine Hat College (Medicine Hat, AB. Canada), and PhD candidate (Westminster University, London UK). Forbes has had solo exhibitions across Canada and has been included in group exhibitions in USA, and UK. She has been recipient to many provincial and federal arts grants including, most recently, a major Canada Council for the Arts, Explore Create grant to research and produce a sound/video/sculpture installation work: *Sea Jellies, Next Generation*. Forbes's main area of research is developing and using creative confidence in everything we do.

Ronald Peter Glasberg, Ph.D., has a background in the history of ideas (University of Toronto). He has taught at Mount Saint Vincent and the University of Western Ontario before coming to the University of Calgary where his focus is on inter-cultural history (i.e., East Asia. South Asia and the West) as well as the paranormal. Glasberg's primary orientation is to develop what might be called an integral hermeneutics whereby externalist forms of knowing (e.g., physics) and internalist approaches to reality (associated with spirituality) are brought together with a view to cultivating what might be called a holistic way of understanding the world. His primary goal is to facilitate both inter-cultural and inter-disciplinary discourse.

Rory Schacter, Ph.D., is currently a Research Fellow at Tokyo College, The University of Tokyo. He previously served as a Lecturer on the politics and ethics of technology at MIT and was a Postdoctoral Research Fellow in the Harvard Department of History. His research and interests are in the history of political and economic thought, and the contemporary geo-politics of advanced technological innovation (especially digital technology). He holds a Ph.D. in Government from Harvard University and before that studied politics, philosophy, religion and classics at the University of Toronto and the Hebrew University of Jerusalem.

Kathryn Shailer, Ph.D., earned her MA and Ph.D. in German Studies from Princeton University and has published multiple articles and given dozens of invited talks and conference presentations on German Romanticism, German cinema, and a range of topics in higher education. Her work experience includes faculty and administrative appointments at University of Winnipeg and Ontario College of Art & Design University. She served as Provost and VP Academic at Mount Royal University (Calgary, Alberta) and Acting Chief Research Officer and Special Advisor for Graduate Studies and Internationalization at the Alberta University of the Arts. She lives and writes

in SW Ontario and BC's lower mainland. For information on her current writing, see <https://klshailer.ca>.

Graham Taylor, Ph.D., is a Canada Research Chair and Professor of Engineering at the University of Guelph. He co-directs the University of Guelph Centre for Advancing Responsible and Ethical AI and is the Research Director of the Vector Institute for AI. He has co-organized the annual CIFAR Deep Learning Summer School, and trained more than 80 students and researchers on AI-related projects. In 2016 he was named as one of 18 inaugural CIFAR Azrieli Global Scholars. In 2018 he was honoured as one of Canada's Top 40 under 40. In 2019 he was named a Canada CIFAR AI Chair. He spent 2018-2019 as a Visiting Faculty member at Google Brain, Montreal.

Dr. Carolyn Willekes is an Assistant Professor in the Department of General Education at Mount Royal University. She received her Ph.D. in Greek and Roman Studies from the University of Calgary, and her research focuses on human-equid relationships in the ancient world, with a particular interest in the intersection of equine behaviour and its representation in art and text. More broadly, her pedagogical interests examine the reception of Classical antiquity in later contexts and the influence this has on social and cultural traditions. She is the author of *The Horse in the Ancient World: From Bucephalus to the Hippodrome* (I.B. Tauris, 2016) as well as several articles and chapters examining the horse in Classical sport and warfare.

Index

A

AI, xii, xiii, xiv, xv, xvi, xvii, 1, 2, 3, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20, 22, 24, 26, 27, 28, 32, 33, 34, 80, 81, 82, 85, 86, 88, 89, 90, 93, 95, 96, 100, 101, 104, 138

AI algorithms, 25, 28

Alan Turing, 72, 87, 91, 96, 97, 98, 103, 105

Alcmaeonids, 31

Alexander, 7, 17, 18, 20, 21, 22, 33, 34

Alexander the Great, 20, 22, 33

algorithms, xv, xvi, 3, 4, 5, 6, 8, 11, 20, 24, 25, 26, 27, 28, 33, 34, 66, 85, 86, 90, 91, 95, 96, 97, 100

Aristotelian, 115, 120

Arrian, 21, 22, 33

Artificial Intelligence, xii, xv, xvi, 1, 2, 3, 7, 15, 16, 18, 28, 33, 85, 87, 95, 97, 100, 101, 104, 105, 107, 108

artificial intelligent systems, xv

automation, 146

automaton, 20, 63, 65, 68, 70, 71, 77, 78, 81, 85, 89

B

Bentham, xvi, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128

Benthamite, xvi, 107

C

C.P. Snow, 149

Camus, 62, 74

Charlie Chaplin, 79

Chrestomathia, xvi, 108, 109, 112, 113, 114, 115, 117

Christa Wolf, 149

Cleitus, 21, 22

Consciousness, 87, 88, 89, 94, 96, 98, 100, 102, 104, 105

Creativity, 86, 87, 91, 92, 93, 96, 98, 100, 102, 104

Cyberverse, xvi

D

Deep Learning, 5, 12, 13, 17, 18

Democracy, 128

digital, xvi, xvii, 73, 85, 86, 129, 130, 135, 136, 138, 139, 140

digital technologies, xvi

Dionysus, 22

F

FAANG, 2, 7

G

Google's Tensor Processing Unit, 5

GPT-2, 9, 10, 14, 17

H

Harari, 7, 8, 16, 95, 105, 137, 138, 140

Hume, 63, 65, 84

I

Individualism, xvii, 129, 134
 Integrated Studies, xvii, 143
 IT, 61, 62, 63, 80, 83

J

Jeremy Bentham, 127, 128

K

Kant, 63, 64, 65, 70

L

learning, 1, 2, 3, 4, 5, 6, 8, 9, 10, 11,
 13, 14, 15, 20, 24, 25, 26, 27, 28,
 31, 34, 90, 92, 101, 104, 139
 liberal arts, xvi, xvii, 61, 138
 liberal education, xiv, xvi, 3, 14, 15,
 32, 107, 108, 114, 115, 116, 118,
 120, 125, 126, 129, 138
 Locke, 63, 130, 132, 140

M

Machine Learning, 2, 3, 4, 6, 8, 10,
 11, 12, 13, 16, 17, 26, 28, 33, 34,
 101, 104
 Marshall McLuhan, 73, 81, 84
 moral sentiment, 133

O

Open-source tools, 11

P

Persian War, 31
 Pinocchio, 71, 72, 83
 Plato, 82, 114, 116
 Platonic, 120
 Plutarch, 21, 34

R

Reproducibility, 7, 8, 10
 Reproducible Research, 8

S

Self-regulation, 7, 9, 10

T

technical skills, 146
 Themistocles, 30
 Tocqueville, xvii, 129, 130, 132,
 133, 134, 135, 136, 137, 138, 139,
 140, 141
 Turing Machine, 96, 97

W

Warhol, 87, 89, 96, 98, 99, 103, 104,
 105