

The Mirror of Information in Early Modern England

*John Wilkins and the
Universal Character*

JAMES DOUGAL FLEMING



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For my family, always

TEXTUAL NOTE

This book is largely about John Wilkins's *An Essay towards a Real Character, and a Philosophical Language*, published in London by the Royal Society in 1668. Beginning in my fourth chapter, I'm going to be examining Wilkins's book in considerable detail. The nature of the book is that you really need to *see* it to grasp it, especially for the layout of Wilkins's Philosophical Tables, and the design of his real character. While I have included images of the pages that are most crucial for my discussion (see Figs. 1–4), including them all is impracticable. But lo: the infosphere comes to our aid. Wilkins's *Essay* is on Google Books. I strongly urge the reader who finds my paraphrases and descriptions of it confusing to open up an e-copy and follow along.

ACKNOWLEDGEMENTS

An awkward question is: How long have you been working on this book? The brief answer—a couple of years—is almost dishonest, but a full answer would be embarrassing. I started to think almost a decade ago that the concept of information was key to the epistemic differences between the early-modern period and our own. But it has taken the informational technologies that have emerged and matured during that decade—notably the internet and its associated networks—to render my inchoate thought at least somewhat utterable. Since then, it has all been a race of research and writing. Which I guess is the short answer.

An analogous, but more pleasant, conundrum: Whom do you want to thank? The academy; my high school history teacher; the inventors of wine and oil. But more narrowly, I can begin with Kevin Killeen and Peter Forshaw, whose 2004 conference on Biblical exegesis and early-modern science (Birkbeck, University of London) really got me thinking in new ways about these matters. Steve Matthews, whom I met for the first time on that occasion, has been a friend and co-laborer since. The delegates, plenary speakers, and supporters of the *Scientiae* conferences: All have my respect and gratitude, but I can especially mention Peter Harrison, Mario Biagioli, Stephen Clucas, Sachiko Kusukawa, Howard Hotson, Thomas Wallnig, Peter Dear, Anthony Grafton, Claire Preston, Jonathan Sawday, Per Landgren, and Sven Dupré. And, maybe even more loudly, the members of the conference's executive committee: David Beck, Vittoria Feola, James Lancaster, and Richard Raiswell, in addition to the aforementioned Matthews. I am very grateful to the staff of the Huntington, British, New York Public, Columbia, University of Toronto, Simon Fraser

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Here finally is where I get to thank my beautiful, brilliant, fabulous wife, Cynthia van Ginkel, and our unbelievably wonderful children: Lucas, Nica, Sage, and Troy. In their case, a full comment really is impossible to give.

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Introduction: The Mirror of Information in Early Modern England

In *Gulliver's Travels* (1726), Jonathan Swift imagines a truly objective discourse:

An Expedient was therefore offered, that since Words are only Names for Things, it would be more convenient for all Men to carry about them, such Things as were necessary to express a particular Business they are to discourse on. And this Invention would certainly have taken Place, to the great Ease as well as Health of the subject, if the Women in conjunction with the Vulgar and Illiterate, had not threatened to raise a Rebellion, unless they might be allowed the Liberty to speak with their Tongues, after the manner of their Ancestors; such constant irreconcilable Enemies to Science are the common People. However, many of the most Learned and Wise adhere to the New Scheme of expressing themselves by Things, which hath only this Inconvenience attending it, that if a Man's Business be very great, and of various kinds, he must be obliged in Proportion to carry a greater Bundle of Things upon his Back, unless he can afford one or two strong Servants to attend him. I have often beheld two of those Sages almost sinking under the Weight of their Packs, like peddlers among us; who when they met in the Streets, would lay down their Loads, open their Saddles and hold Conversation for an Hour together.

This book is about an early-modern method for communicating via things. Not, to be sure, in quite the manner of Swift's famous satire.¹ But some of the "most learned and wise" of the seventeenth century did imagine replacing human languages with a much more efficient and objective kind of intensional notation. For Bacon, Mersenne, Leibniz and others, the

hallmarks of all human languages were inaccuracy, redundancy, ambiguity, and unreliability. Words distorted thought, impeded communication, and prevented knowledge. Yet the mind, *prior* to language, seemed to reflect the world; much as a mirror reflects the face that is before it. Therefore (it was thought), if you could craft a symbolism to *reflect the mind's reflections*—without falling back into “language”—you would, effectively, have a way of denoting things directly. This would be what the period called a *real character*: “real” from Latin *res*, thing. Writing down the notions of the mind, if that were possible, would amount to writing down the truth of the world.²

For Jonathan Swift (1667–1745), it offered only a way to write down a joke. But then, Swift found much that was funny, when he looked back on his own era. The Academy of Lagado, visited by Gulliver in the famous episode quoted above, clearly satirizes the Royal Society for the Improving of Natural Knowledge, founded in London in 1663. As a pioneering institution of what we now call natural science, the Royal Society looks to Swift like an easy target for satire. A measure of the historical distance between him and us. More recent satirists—think Christopher Hitchens, or Bill Maher—typically get their laughs *on behalf* of science, not at its expense. Anyway, the real-character project was closely associated with the early Royal Society, as a key component of the intellectual reforms envisioned by Sir Francis Bacon (1561–1626). Crafting a real character proved much more difficult than theorizing one. Nonetheless, the Baconian version of the real-character project culminated in the *Essay towards a Real Character, and a Philosophical Language* (1668): published by the Society, with contributions from a number of its associates, under the overall authorship of the intellectual impresario John Wilkins (1614–1672).

Despite its title, Wilkins's *Essay* was not just another theoretical sketch of the real-character idea. Rather, it offered the public a coherent, comprehensive, and usable version of an (allegedly) objective script. Six hundred and two massive folio pages long, complete with engravings, fold-out tables, and detailed user instructions, the *Essay* put a real character on the desk of everybody who bought it. To be sure, achieving a usable character meant sacrificing some of its ideal potential. The “great undertaking” had not quite been completed, as Wilkins wrote, “with all the advantages of which such a design is capable.” And yet it clearly tended toward “the Universal good of Mankind,” with the potential to improve trade, unify religion, and increase scientific knowledge.³ What we have here is the combination—perhaps more recognizable to the twenty-first century than

to the seventeenth—of hubris and humility in a moment of innovation. The *Essay towards a Real Character* was a best-possible application of cutting-edge knowledge, with the plausible goal of empowering people and improving their lives. More than a book, it amounted to a *device*.

Certainly Wilkins's admirers saw his real character as a game-changer. They learned it, corresponded in it, and sought to build upon it.⁴ The historian John Webb, writing in 1669, expressed the serious expectation that Wilkins's work could overcome the obstacles to communication presented by the multiplicity of human languages.⁵ A Latin translation of the *Essay*, to put the obsolescence of language on a pan-European basis, was being prepared by 1670.⁶ The inventor and polymath Robert Hooke, who was devoted to Wilkins, said that his "Universal and Real Character" needed no amendment "to make it have the utmost perfection." Hooke used the character for a proof-text in one of his many public disputes over intellectual property, stating that he hoped thereby to "bring into use and practice that excellent Design."⁷ And John Aubrey, gadfly of the early Royal Society, proposed an ideal academy where "Dr. Wilkin's cuts [prints] of the real character" would be placed in every student's room, and where the character would be used for writing out proverbs, for botanical field-work, and for the overall knowledge (as Aubrey rather compendiously puts it) of "things."⁸ Annotations and corrections in surviving copies of the *Essay* indicate that the work was not only bought, but also closely studied.

And yet very few readers of the *Essay* seem to have become its users. A vector of adoption for Wilkins's work, if one got started among his admirers after 1668, seems to have gone nowhere. Aubrey's academy (as far as anyone knows) remained notional. Hooke's efforts to promote the character were lonely. The upgrades for which Wilkins's associates hoped, and on which they labored, never appeared. In 1708, thirty-six years after Wilkins's death, his scientific books were republished in the omnibus *Mathematical and Philosophical Works of the Right Reverend John Wilkins*. Here the reader can find Wilkins's Copernican treatise, *A Discourse Concerning a New World and Another Planet* (1640); his book on signals, *Mercury, or the Secret and Swift Messenger* (1641); and his work on mechanics, *Mathematical Magic* (1648): all reprinted in full. But not the *Essay*. Of this great work of the early Royal Society, which Wilkins called his "darling" and for which he expressed such high hopes, the 1708 editors print only an abstract; while commenting that Wilkins's "design of the Real Character" was now "wholly neglected."⁹ By the early eighteenth century, it seems—even among people

who were genuinely interested in Wilkins's work—the project for a real character was barely worth remembering.

In that sense, it is actually quite odd that Swift, writing in the 1720s, carefully includes the real-character project among the satirical targets of *Gulliver's Travels*. True, he also seems to want the famous Academy of Lagado episode to invoke the philosophy of John Locke—a more recent, and more prominent, articulation of the view that words were only “Covers of Ignorance” for “the true Knowledge of Things.”¹⁰ But this is only an introductory note in a satirical episode that leads back almost to the year of Swift's birth. The Lagadans' belief that they can actually *reduce* words to their common objects, although alien to Locke's thinking, is an admissible caricature of Wilkins's. Their view that “in reality all things imaginable are but Nouns” is consistent with the account that Wilkins gives in what he calls his “Natural Grammar.”¹¹ Gulliver tells us that thing-talk is supposed to function as a universal language¹²—a signature hope (as we will see) of the real-character project. Swift even places the “new scheme” on what he calls the “speculative” side of his pseudo-Royal Society. He makes that point, and uses that word, three times in his introduction of the episode.¹³ “Speculative”—from Latin *speculum*, mirror—is opposed to “practical” knowledge in the early-modern period. It suggests, in a way that proved very important for the idea of a real character, the attempt to articulate and contemplate things just as they are.¹⁴ As I have just suggested, it is unclear that Swift's contemporaries would have gotten any of this. Yet Swift is determined to satirize the real-character project anyway. Why?

Jonathan Swift was one of the very last people in the history of the West—until very recently—who could criticize the world envisioned by modern science and technology *without* taking up a Romantic position (of unreason, passionate feeling, productive chaos, etc.). According to the usual history of ideas, there isn't much that is modern, or scientific, or technological, about the seventeenth-century search for a real character. Its epistemology is faulty; its technical consciousness, poor; and it is saturated (as we will see) with Christianity. From this kind of perspective, Wilkins's *Essay* looks, at best, like a dim by-way of modern intellectual history. By contrast, Locke's *Essay Concerning Humane Understanding* (1690) looks like a canonical super-highway. Yet Swift seems to perceive the real character project as being on this same historical line. If anything, he seems keener to knock down Wilkins's ideas than Locke's. Swift evidently saw the previous century's visionaries of a real character as bona fide, and dangerous, prophets of modernity. Was he right?

I'm going to argue that he was. Specifically, I'm going to argue that Wilkins and his peers were prophets of what we now call *information*. I don't mean that term vaguely, as a mere label for communicable knowledge. Rather, I mean the specific form of communicable knowledge that is associated with modern telecoms and computing. Not, to be sure, at the technical level; the real character is not digital, or based on binary code, or (needless to say) electronic. But at a deeper level, having to do with its fundamental *management* of communication on the way to possible knowledge, I am going to argue that the real character manifests some important *shapes* of information. A modular semiotic operating in alienation from any natural language; the possibility of universal communication emerging from just that alienation; and a vision of corraling all knowledge into a single, commanding database: these are some of the facets in which Wilkins's mirror of the world seems to reflect, across the centuries, the information age.

It is striking that we now routinely participate in, and take entirely for granted, conversations that go way beyond the ones Swift satirizes in *Gulliver*. We don't just hold up things and point at them, while others do the same. We hold things up—or carry them, or wear them, or ingest them—that point at each other, processor to processor. Dropping out entirely, “language” is replaced by a code of electronic pulses that no human ear can process, no mouth speak. Swift, if he could have learned about such conversations, would (I think) have been horrified. But Wilkins would have been fascinated. Or so I would like to argue.

Now, mine is not the first book to talk about Wilkins's *Essay*—not by a long shot. But it is different from its neighbors on the library shelf, in three main ways. First, previous studies, especially those of a literary-historical bent, have been strongly contextualizing. Their authors have sought to situate Wilkins within his cultural and personal cohorts; and/or, to situate his *Essay* within its intellectual and informing currents. Both are extremely important, even necessary, agendas. So we learn a lot, on the one hand, about the early Royal Society, its correspondence networks, and scientific hopes.¹⁵ On the other hand, we learn a lot about the widespread period fascination, especially in England, with the possibility of real or universal characters; which, in turn, opens up into broader European stories about language reform, cryptography, logic, and mnemonics.¹⁶ On both hands we find superb studies (I hasten to state), without which the present book would be impossible. Nonetheless, the imperative always to trace historical circles around Wilkins's *Essay* has

left the latter somewhat neglected in the middle. No study focuses, in a sustained and (more-or-less) comprehensive way, on Wilkins's *Essay* as a topic in its own right: a transformative communications product, grounded in the seventeenth-century real-character movement, yet without parallel therein. Taking the time to give the *Essay* its due: that is part of what I am going to attempt in this book.

The second difference has to do with the nature of Wilkins's product—what we are supposed to notice, what makes it such a big deal. The *Essay*, per its full title, has to do with *a Real Character* and *a Philosophical Language* (my emphasis). Scholars, without exception, have approached it via the second part of that clause: subordinating Wilkins's written "character" to his oral "language," or frankly and even casually conflating the former with the latter. As I will argue, this is a way to miss the point of Wilkins's achievement. A real character is precisely *not* supposed to be reducible to a language, in early-modern terms—and not in post-modern ones, either. Rather, the character is supposed to be a non-linguistic, or perhaps para-linguistic, system for doing the kind of intensional and communicative work that is normally done by language. How we can understand such a relation is part of what we need to try to find out. To be sure, "character" and "language" are typically discussed together in the early-modern period. But—if we think about it—that is precisely how we can know that they are different. Abbott and Costello, let's say, are always seen together. That is how we know that the one is not the other. The real character, as such, and as *distinct* from "language," is the *point* of Wilkins's book. Accordingly, it will also be the point of this one. To a degree, and in a way, that no previous study has attempted (as far as I am aware), I am going to try to show how Wilkins's real character works.

The third difference is the one I have already indicated. I wish to read the *Essay* as an illuminating episode in the history of information—not in a general, but in a fairly specific, sense of that term. I am not proposing a genealogy, but an analogy. The late Paolo Rossi, in his great work *Logic and the Art of Memory*, describes the seventeenth-century synthesis of artificial mnemonics with hopes for "universal" learning, in a period that "has justifiably been called 'the age of manuals'." "The time was right," Rossi observes, "for the development of a conceptual mechanism which, once it was set in motion, could 'work' by itself, in a way which was relatively independent of the individual, until one arrived at a 'total knowledge'." Rossi has in mind the fully-fledged and semi-mystical art of memory, which, he wishes to point out, was in the eighteenth century "*erased* from

European culture” (the emphasis is his).¹⁷ And no doubt he is right. Yet it is impossible today to read his book, originally dating from 1983, without constantly being reminded of the information-technological claims and agendas that have emerged since then—in what Luciano Floridi calls the “infosphere,” Stephen Wolfram calls the “computational universe,” Apple and Google and Microsoft just call theirs. The automation of knowledge, a dream of the early-modern world, is becoming a reality in the post-modern one. The time is right, therefore, to go back and see what was happening, while we were still asleep.

A number of humanities scholars have talked about “information” in the early-modern period. However, the concept of information *itself* has for the most part not been treated critically in these studies. It has just been used.¹⁸ The problem with such an approach, as I will discuss in Chap. 2, is that information is an historically contingent concept *par excellence*. It is *only* because of technical developments in communications and computing, in the decades after the Second World War, that we talk about information as much as we do, benefit from information technology (IT), and live in an information age (recently upgraded, as we will discuss, to Floridi’s “infosphere”). Therefore, to *assume* information as always-already “there” in the early-modern period is to risk anachronism. What I want to do, instead, is to construct Wilkins’s real character as an emergent period *site* of what we now call information—on the basis of a prior, technical, explanation of the latter. *If* the construction is valid, we then may be in a position to learn something, from the period avatar, about the modern field.

Other humanists have mounted allegedly critical discussions of contemporary information theory and technology. All too often, however, “critical” work of this kind just means “finding occasion for literary or cultural comment or performance.”¹⁹ It means *deploying*, rather than examining, key concepts and claims of the digital age (such as machine intelligence, cyborgs, code, information itself); while connecting them, more or less formally, to this-or-that text, this-or-that theory, of the contemporary humanities. The result is a kind of exciting talk *within* the world of information, but not really about it.

To be sure, a fully technical account of the relevant issues would take us right into them, when all we want to do is gain a critical perspective on them. An interdisciplinary conundrum. Nonetheless, a number of philosophers, including John Searle, Hubert Dreyfus, and Albert Borgmann, have demonstrated how to perform the necessary balancing act.²⁰ I’m not really going to be able to do what they do; but I am going to try to report on it.

A final opening comment. This is a book primarily for students of the seventeenth century, especially those interested in the methodological and epistemological issues that tend to be raised by the period's emergent science and technology. At the same time, I will be engaging, on a much less secure basis, with several other disciplines, including information theory (in a fairly strict sense); the philosophy of information (Floridi and friends); and phenomenology, especially the philosophical hermeneutics of Hans-Georg Gadamer (1900–2002). The danger, of course, is that readers who come to this book from any of those latter areas will find its treatment of them jejune, its seventeenth-century discussions hard slogging. So I have tried to make the historical discussion accessible, the theoretical side acceptable. Which all but guarantees the countervailing danger: that seventeenth-century specialists will find my historical discussions (in places) elementary, my theoretical commentary opaque. If there is any hope of squaring these circles, it rests on an articulation of my central proposition: that Wilkins's *Essay towards a Real Character* can interestingly be read as an early-modern manifestation of an informational phenomenology.

In the bit-stream of information, at the machine level, John Wilkins and his peers would have recognized—I would like to argue—a wondrous version of what they called a real character: a para-linguistic, and non-ambiguous, script of things. The basis of this script in mathematics would have pleased Wilkins even more; and its reliance on binary code would have sent shivers down his spine. For Wilkins (as we will see in Chap. 2) prefigured this innovation, both in the *Essay*, and in earlier work.

So perhaps we have some reason to say that information is like the real character. Perhaps, conversely, the real character is like information. In the mirror of its past, maybe we can read some of the contours—and limits—of our informational future. I'm going to argue that we can. In fact, I'm now going to argue that we have to.

CRITIQUES OF THE INFOSPHERE: GETTING TO OH

In 2001, the distinguished American philosopher Hubert Dreyfus published *On the Internet*. The book was the latest installment of work that Dreyfus had been doing throughout his career: debunking, from a pragmatic and phenomenological perspective, the hype surrounding new information technologies. The World Wide Web, a mass technology only since the early 1990s, was still very young at the turn of the twenty-first century—and it showed. “Surfing” the web was fun; but *searching* it, a

bore. Oh, as long as you knew what specific site you were after, things worked pretty well (connection speeds aside). We all kept careful lists of our doubleUdoubleUdoubleUs. But if you only knew what general *kind* of site you wanted, the millennial network was hopeless. An online attempt to find information about tortoises (in Dreyfus's bookish but accurate example) might lead you instead to sites on pre-Socratic metaphysics (because a tortoise features prominently in Zeno's famous Paradox). There were many so-called search engines, but none that actually worked very well.²¹

For Dreyfus, the search problem was rooted in the difference between syntax and semantics: that is, between the mere ordered form of a symbol (e.g., the sequence of letters in "TORTOISE SPEED"), and the intention it encoded (e.g., "I'd like to learn how quickly a tortoise can walk"). Pre-computing search platforms, exemplified by libraries, worked semantically: through meaningful categories organized by embodied humans for the benefit of each other's intentions. But a disembodied and non-intentional computer network could only work syntactically—which meant that it could scarcely organize information, let alone categorize it, at all. What was worse, the sheer *amount* of information available online was growing, and looked destined to grow, exponentially and incessantly. Before long, it seemed, the landscape of online search would become little more than a vast wilderness of tortoises—and whatever else you might care to name—each piece of it inextricably entangled with every other. "One thing is sure," Dreyfus concluded his first chapter, grimly: "As the Web grows, Net users who leave their bodies behind and become dependent on syntactic Web crawlers and search engines will have to be resigned to picking through heaps of junk in the hope of sometimes finding the information they desire."²²

In 2009, Dreyfus brought out a second edition of *On the Internet*. The revised first chapter draws a big red line through the original. For as Dreyfus freely and fully acknowledges, his critique of less than a decade before had been undermined—in something like the etymological, fatal, sapper's sense of that word—even as he was writing it. There was this computer scientist at Stanford called Terry Winograd, Dreyfus recalls; and he had a couple of bright graduate students (Larry Page and Sergey Brin) working on the search problem. The young men realized that the meaningfulness of a given website for a specific search term, although subjective to the searcher, could nonetheless be quantified objectively by the searcher's clicks under that term. Even better, the larger and denser the online wilderness, the more relative significance would attach to groupings of