

Does not compute: why I'm proposing a moratorium on academics' use of the term "outputs"



*The word "outputs" is now ubiquitous in UK academia, particularly in a REF context that requires authors to think of their publications in such terms. To **Kirsten Bell** this is jarring, with a term previously more commonly associated with the language of computing or economics, where outputs are measured and monetised, clearly not suitable to academia. It's ultimately ideas that academics trade in, a reality obscured by the concept of "outputs" and its connotations of mechanical production and expulsion. It's time for a moratorium on the casual use of the term "outputs" amongst academics.*

As a recent Australian transplant to the UK from Canada, there is one relatively unfamiliar word I have heard repeatedly over the past three months: "outputs". Like most academics, I have been exposed to the term before. [Canadian grant agencies](#) love to talk about "outputs" (and its more desirable sibling, "impacts"), generally in the context of their own "inputs", and based on the following ideal formula: $\$ \rightarrow O^p \rightarrow O^c \rightarrow I$ (the input of funds leads to outputs which lead to outcomes which lead to impacts). However, whenever confronted with the term on grant applications, I always treated it as grant-agency-speak to be ignored. But here in the UK, I hear the term used on a daily basis – not just by university administrators, but by academics to describe their own work.

It has not escaped my notice that we are currently in the middle of a REF cycle – a phenomenon I'd witnessed from afar, primarily via the grumblings of harassed British colleagues, but never personally experienced, given I left Australia before it started its own "era" of national research evaluation. ([ERA](#), or Excellence in Research Australia, is the country's answer to the REF, and, yes, someone actually thought the acronym was clever.) Based on my vantage point as a relative cultural outsider, the REF seems to boil down to "outputs", REF terminology for "publications", so it's hardly a surprise that talk about outputs should be particularly frenzied at present. In the REF context, where daily academic life becomes suffused with its demands, we are all continually forced to think about our publications as outputs, with any consequences this might entail.

As someone for whom the term is not yet naturalised, and whose formative years were in the 1980s, my primary associations with "outputs" are cinematic and computer-related, evoking images of computer and robotic systems gone awry (think *War Games*, *The Terminator*, and *Short Circuit*) – like [Johnny Five](#), a robot whose inputs and outputs suddenly don't match. Likewise, I suspect that for the average person, talk of "outputs" is synonymous with talk about computers. For example, of the six categories [Wikipedia](#) lists under the term, three relate specifically to computing. Notably, however, the other three categories relate to economics jargon, such as the concept of "net output": "the gross revenue from production less the value of goods and services".

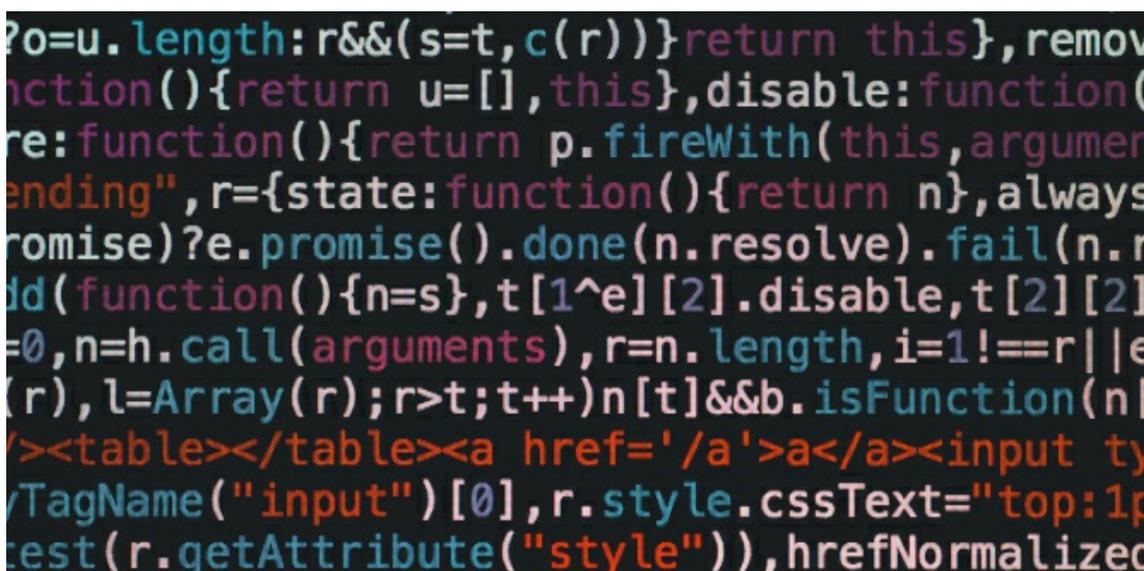


Image credit: [Markus Spiske](#), via Unsplash (licensed under a [CC0 1.0](#) license).

This economic dimension of the word – as something *produced* rather than *expelled* – [dates to the mid 1800s](#). Since that time, the products of manufacturing and other industries have commonly been spoken of in terms of “outputs”. Yet, while we live in an age where defining ourselves in economic terms has become commonplace (talk of how we “add value”, for example), most people do not speak of the products of their individual labour through the language of “outputs”. In fact, if we take Google searches as indicative of how people grasp the term, human outputs are conceived utterly literally, given that the top Google queries relating to outputs generally focus either on computers or the act of peeing (as in “urine output per hour” and “normal urine output”). It is therefore somewhat surprising, to say the least, that academic publications have come to be described in such terms. So how did this come about? And what effects does this language have on the ways we conceive of academic scholarship?

In many respects, these questions have already been answered in Marilyn Strathern’s edited volume [Audit Cultures: Anthropological Studies in Accountability, Ethics, and the Academy](#), which, drawing on the work of [Michael Power](#), attributes these changes to the rise of “audit society” in the 1990s. According to Power, during this period, the growing distrust in professional autonomy was accompanied by the rise of “rituals of verification” that quickly became pervasive across the public sector in the UK. These new forms of public management, Power argued, were themselves connected with the rise of neoliberal values that prioritised small government and reorganised it to mimic the presumed efficiency of the market, seeking to act on and through the interests and motivations of subjects and organisations themselves.

As Strathern and her colleagues demonstrate, academic rituals of verification (e.g. the REF and the TEF) were introduced during this period under the name of “quality” assurance. The resultant distortions in academic scholarship, and the sense of anxiety, insecurity, and powerlessness they have engendered, have been well-documented in the decades since (e.g. Roger Burrows’ [“Living with the h-index”](#) and Rosalind Gill’s [“Breaking the silence: the hidden injuries of neoliberal academia”](#)). Certainly, they put to rest the almost endearingly naïve view that by refusing to quantify what they consider a 4-star output to be, the REF will escape the effects of [Goodhart’s Law](#).

But for the most part, these scholars don’t dwell on the term “output” itself, beyond treating it with the academic equivalent [of a pair of tongs](#) (scare quotes). The key exception is Maryon McDonald’s chapter in [Audit Cultures](#), where she highlights the ways in which the language of accountability has been wedded “with the language of systems (input/output) and of business and the markets (products, productivity, and so on)”. In other words, like me when I first heard the term, she treats it as connected with computing rather than business and markets, quickly moving onto other linguistic culprits in considering the latter. However, it seems to me that it’s worth unpacking the term further, because everything that’s wrong with the REF is arguably reflected in the concept of “outputs” itself.

The key to the problems with the term is provided in the [Oxford English Dictionary](#), which defines an output as: “the amount of something produced by a person, machine, or industry”. Notice the ways in which humans, machines, and industries stand in substitutable relation with each other: they become *equivalent* and *interchangeable*. And, perhaps most importantly, their outputs are measurable (and monetised).



Image credit: [Ant Rozetsky](#), via Unsplash (licensed under a [CC0 1.0 license](#)).

While it makes a certain kind of sense to describe coal and iron production (the contexts where the term was first used) via the language of "outputs", academic "products" are mostly *intangible*. While we might write books and papers, it's ultimately ideas that academics trade in. The concept of "outputs", with its connotations of mechanical production and expulsion, obscures and mystifies that reality. Importantly, the REF's current emphasis on "impact" doesn't undo the conceptual damage but instead compounds it, by treating it as inhering in the "output" itself, rather than the context it is received. (To wit, there are no intrinsically world-leading "outputs", merely those that have a ready-made audience and those that don't.)

Moreover, the concept of outputs implies not only production but consumption. After all, outputs are created to be *consumed*. But, wait, I hear you ask, who are the consumers in this scenario? Why, society, silly! As [Strathern](#) highlights, "society" has increasingly been drawn into the scientific enterprise as a key "stakeholder". In this framing, academics' task is to manage their "outputs" in such a way as to make them disseminatable (a gussied-up version of "consumable"). This, Strathern points out, orients the nature of research in certain directions, encouraging "problem-oriented, task-specific, research-to-find-solutions types of questions". While this might sound well and good, the corrosive consequences of this shift are well-documented, from a [lack of innovation](#) to [narrowly focused and formulaic research](#).

And this brings us to my final concern with the term "output": its erasure of difference. The "output" is, at heart, a strikingly egalitarian term – under its framework, a book, a journal article, a report, and a patent become conceptually equivalent. While, on one level, this seems quite democratic, [Bruce Kapferer](#) has demonstrated the exclusionary potential of egalitarian ideologies, and the ways they can serve to justify and reinforce inequality. Certainly, for anyone who has ever written a book, the idea that it is equivalent to a journal article is laughable (well, cry-worthy). Here, the erasure of difference works in the interests of some disciplines and actively against the interests of others – namely, the humanities and humanistic social sciences. As one [satire on how to do research in the REF environment](#) advises: "Don't write a book or extended monograph: the REF makes no distinction between research outputs, so there is no incentive to undertake long-term projects" (advice academics [seem to be taking to heart](#)).

In sum, my point is that the term "outputs" entails a variety of meanings and associations that are inimical to academic scholarship as most of us conceive it. Yet, while critiques of the REF abound (when a professor of higher education studies labels it a "[Minotaur that must be appeased by bloody sacrifices](#)", you know the REF has an image problem), its language has come to permeate our academic lives in unquestioned ways. If, as [George Lakoff and Mark Johnson have influentially asserted](#), thought is fundamentally metaphoric in nature and metaphors structure the way we think, then "outputs" is hardly the innocent bureaucratic synonym for "publications" or "knowledge" it might appear. I would therefore like to propose a moratorium on the casual use of the term "outputs" amongst academics – unless, of course, we are talking about the ones the average person obsesses over: those expelled from our own bodies.

Note: This article gives the views of the author, and not the position of the LSE Impact Blog, nor of the London School of Economics. Please review our [comments policy](#) if you have any concerns on posting a comment below.

About the author

Kirsten Bell is Professor of Social Anthropology in the Centre for Evolutionary, Social and Inter-Disciplinary Anthropology (CRESIDA) in the Department of Life Sciences at the University of Roehampton; she has previously held academic appointments at the University of British Columbia, Macquarie University and the University of Northern Colorado. Kirsten has published widely in the anthropology of public health and has developed a more recent interest in academic knowledge production. Her ORCID iD is [0000-0001-9008-4663](#).