

# EARLY MODERN LITERARY STUDIES



**Bradley J. Irish, *Shakespeare and Disgust: The History and Science of Early Modern Revulsion* (London: Arden Shakespeare, 2023). x + 270pp. ISBN 978-1-350-21398-2.**

**Debapriya Sarkar, *Possible Knowledge: The Literary Forms of Early Modern Science* (Philadelphia: University of Pennsylvania Press, 2023). 265pp. ISBN 978-1-5128-2335-6.**

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As their full titles indicate, both Bradley J. Irish's *Shakespeare and Disgust: The History and Science of Early Modern Revulsion* and Debapriya Sarkar's *Possible Knowledge: The Literary Forms of Early Modern Science* are examples of a productive strand of critical enquiry that over recent decades has sought to link early modern literary and dramatic texts to the enterprise of gaining knowledge about the universe and the things in it. For simplicity's sake this enterprise may be referred to as 'science', although that term can in some contexts be anachronistic ('natural philosophy' might be more recognisable to early moderns) as well as eliding other bodies of thought such as alchemy that helped bring modern science into being but that were subsequently discarded. Critics working in this field have long since gone beyond examining the influence of early modern scientific thought on the likes of Donne or Milton, instead adopting increasingly nuanced theoretical models for the ways in which literature and science interacted (and continue to do so). The books under review reflect two very different approaches to this topic.

In *Possible Knowledge*, Sarkar acknowledges the work of critics such as Mary Baine Campbell, Elizabeth Spiller, Frédérique Aït-Touati and Claire Preston who have argued that the relationship between literature and science was reciprocal: not only did writers make reference to the scientific ideas of their age, natural philosophers used 'literary tropes, figurative language, generic conventions' in their own writing. However, Sarkar's book takes a different approach: it identifies 'the imaginative dimensions of

emergent scientific methods as components of a *literary* epistemology’ (p. 5). What this means is that the literary quality of early modern scientific writing was not merely rhetorical: the ways in which early modern scientists sought to acquire knowledge about nature were, in effect, literary ones. In an era when ‘the slow collapse of the Aristotelian cosmos’ was generating a ‘dual crisis of epistemological uncertainty and ontological precarity’ (p. 1), understandings of the universe were inherently provisional, contingent, and incomplete. Like the poet described in Philip Sidney’s *Defence of Poesy*, who is not concerned with ‘what is, hath been, or shall be’, but with ‘the divine consideration of what may be and should be’, early modern scientists were obliged to hypothesise possible knowledge and possible worlds.<sup>1</sup>

Although Sarkar’s book includes chapters on Francis Bacon and Margaret Cavendish, both of whom are noteworthy figures in the history of early modern science, the texts on which she focuses tend to be ones which most critics would describe as literary rather than scientific (indistinct as the boundaries between the two were during the period under consideration). She begins with one text that famously constructs an imaginary world that is both sprawling and detailed, namely Spenser’s *Faerie Queene*. Instead of examining ‘moments where the poem obviously engages with natural history and philosophy’ (p. 26), Sarkar is concerned with how possible knowledge is thematised within it. One example of this relates to the ontological status of Faerieland itself, which Spenser discusses at length in the Proem to Book II. Spenser defends his fiction from the accusation that it is an idle forgery by citing lands in the New World of which Europeans were once ignorant; thus, Sarkar argues, ‘The poetic imagination can generate methods to explicate the unstable status of entities that cannot be represented by the conventional calibrations of space and time’ (p. 33). Sarkar also cites the way Spenser’s romance formally embodies deferral and incompleteness; the way Arthur bridges Britain’s mythical past, the Elizabethan present, and imagined futures; and the uncertain prophetic vision Britomart sees in Merlin’s glass, which ‘presents to her how the future could be, but only if she participates in it’ (p. 51).

The contradiction inherent in prophecy, which offers a vision of the future but, in being uttered, seemingly offers the chance to change that future, is famously central to *Macbeth*, whose protagonist is faced with the question of what he actually needs to do in order to bring about the witches’ prediction that he will be king. Macbeth’s mistake, as Sarkar sees it, is that he reads their prophecies as recipes like those that might be used in cookery, medicine or alchemy, in contrast to Banquo who repeatedly questions

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<sup>1</sup> Sir Philip Sidney, *The Major Works*, ed. by Katherine Duncan-Jones, rev. ed. (Oxford: World’s Classics, 2002), p. 218.

both what the witches are and what their words mean. As with *The Faerie Queene*, literary form is crucial to the way *Macbeth* deals with the theme of possible knowledge: its audience watches as prophecy becomes history on stage, and, in the case of court performance, sees the play's prophecy of the Stuart monarchy actualised in the body of James VI/I.

The chapter that follows is of central thematic importance to Sarkar's book in so far as it deals with a writer whose deep preoccupation with scientific method greatly influenced scientific thinking in the decades after his death, namely Francis Bacon. Sarkar finds Bacon's inductive reasoning, which begins with the observation of particular phenomena and works upward from these to develop increasingly generalised axioms, to be analogous to the narrative deferrals and digressions of romance. This is because of the way attempts to derive axioms invariably direct the scientist back to observe new particulars in which those axioms may be more broadly and securely grounded. As Sarkar puts it, 'The middle axiom activates a strategy of wandering that directs naturalists away from their original quests [...] each new finding will produce its own quests, leading the naturalist to further new works and particulars' (p. 94). It needs to be emphasised here that the romantic language of wandering and quest is Sarkar's, not Bacon's; although she legitimately notes similarities between the *New Atlantis* and romance, in particular its sudden ending (which prompted others to offer their own conclusions, as with Sidney's *Arcadia*), it is Sarkar herself who links inductive reasoning to romance digression. That does prompt the question of what relationship, exactly, Sarkar is positing between literary and scientific texts. She tends to use words like 'homologies' (p. 90) and 'analogies' (p. 92) that identify similarity while avoiding explicit assertions of influence; as she puts it in one longer formulation, she is interested in 'the ways in which induction is constituted by imaginative techniques typically associated with the linguistic and narrative extravagances of romance' (p. 91). That does not invalidate her argument: it is perfectly legitimate to find formal similarities that never left a paper trail of evidence because of the deep cultural level at which they operated. However, it does mean that at times *Possible Knowledge* is more productively to be regarded as a work of speculative formalism, albeit formalism underpinned by sensitive and sophisticated close reading of specific passages, than of conventional literary history (or history of science).

In her next chapter, however, Sarkar addresses a writer who was much more frank about the relationship between her fictions and her scientific writing, namely Margaret Cavendish. Like Spenser, Cavendish explicitly theorises the process of world-making, having her fictional avatar in *The Blazing World* imagine and then discard a series of possible worlds constructed according to different scientific principles (Pythagorean,

atomist, etc.). Sarkar considers the familiar topic of Cavendish's transition from atomism to vitalism in her scientific thinking, and suggests that one reason for it may have been the demands of her own fiction-writing: while atomism suited the fragile worlds imagined in Cavendish's lyrics, the process of world-building represented in *The Blazing World* implies a physical model where matter is held in coherence by force of will. The process imagined by twentieth-century historians of literature and science, where new ideas about the universe influenced literary production, is here turned on its head, as the narrative requirements of the fiction dictate the scientific theory.

Sarkar's final chapter concerns a text that foregrounds the problems of knowing explored throughout her book: *Paradise Lost*. She takes the phrase 'sad experiment' used by Eve at 10.967 as her basis for linking Eve's decision to eat the fruit to the experimental methods promoted by the Royal Society from the 1660s onward. (There is some sleight of hand here, since Eve actually uses the phrase to refer to her ineffectual pleadings with Adam after the Fall.) Sarkar takes issue with earlier critics who have discussed this topic in arguing that whereas early modern experimental method assumed the replicability of scientific experiments, the Fall is inherently non-replicable as it changes the nature both of the universe being observed and of the humans observing it. I would have appreciated more discussion of whether the experiment is, in fact, replicated when Adam accepts the fruit from Eve (and if not, why not), but Sarkar's analysis provides a bracing justification of the power of poetry to critique the assumptions of scientific practitioners. This might have led, in Sarkar's coda, to an argument in favour of the humanities in a modern context in which they seem perpetually embattled; in the event, however, she offers a more balanced acknowledgement of the way the imaginative construction of possible worlds in early modern literature may have fed appetites for colonialist domination and exploitation. Such imagined worlds open up 'the possibility that things *could be otherwise*' (p. 193); whether that is for better or for worse depends on how we respond to them.

While Sarkar's book reads early modern literature in relation to the concepts and practices of early modern science, in *Shakespeare and Disgust* Bradley J. Irish is more concerned with the findings of scientific practitioners today. His book is, as he acknowledges, a product of the 'affective turn' that in early modern studies has been represented by the work of Gail Kern Paster, Mary Floyd-Wilson, Katherine Rowe, Douglas Trevor and others on how relationships between emotion, the body and culture were understood, as well as being informed by work on disgust specifically by historians, legal scholars, philosophers and sociologists. However, the distinctiveness of Irish's book as a piece of literary scholarship lies in the way it 'draws its fundamental understanding of how disgust works' from 'the theories and models of the modern

affective sciences' (pp. 6-7) and the primary research done by biologists and neurologists. This means that his book engages with two very different ways of thinking about disgust: one provided by the humanities, which tends to stress the social construction of emotions and to be wary of claims that they are experienced in the same way in different times and cultures; and one provided by psychology and neuroscience, according to which 'certain aspects of emotion are indeed meaningfully "universal"' (p. 7). In practice this divergence isn't as irreconcilable as it might seem: historians and scientists alike now tend to accept that 'the human brain has certain stable biological properties that nonetheless must inevitably develop within a particular cultural framework' (p. 8). Nevertheless, a basic assumption that disgust has been felt in similar ways, biologically speaking, by us, by Shakespeare's contemporaries and (say) by Neolithic farmers in prehistoric Mesopotamia informs his book and gives it, at times, a somewhat deterministic flavour.

Irish's book is wide-ranging in its consideration of Shakespeare's output: while it devotes entire chapters to the tragedies *Titus Andronicus*, *Timon of Athens*, *Coriolanus*, *Othello* and *Hamlet*, these are interspersed with shorter chapters that set out the work of scientists on various triggers of disgust (e.g. food disgust, disease disgust, body envelope disgust) and discuss them with briefer reference to a variety of texts from multiple genres. A thread that runs through all of these is evolutionary biology: as Irish explains it, scientific theories of disgust see its origin as lying in the need to avoid ingesting substances that may contain pathogens. The 'human disgust system' has since 'expanded its regulatory purview across a variety of increasingly abstract domains' (p. 21), including the disgust triggers listed above. Disgust, it turns out, is an emotion that has evolved in order to help humans survive, giving it a cultural importance that Shakespeare exploits and interrogates.

First, the exploitation. *Titus Andronicus* is a notoriously disgusting play in which murder, rape, mutilation and cannibalism are all staged, graphically so in some cases. It is also one that has enjoyed periods of significant popularity, including a resurgence in interest over recent decades. Irish suggests that the play's early modern success stems from the way its disgusting events 'draw a large part of their theatrical power through their alliance with other social practices in Elizabethan England that similarly transform objects of ostensible disgust into objects of visual fixation' (p. 41) such as public execution, the literature of criminality, dissection, a fascination with the monstrous, and medicinal cannibalism. Early modern audiences 'lived in a culture that routinely invited viewers to gaze upon that which might otherwise cause them to look away' (pp. 60-61); in staging distressing and unpleasant events, Shakespeare and Peele capitalised on this

perverse compulsion. Irish here provides a lively and perceptive explanation of the play's evident appeal.

While *Titus* may elicit disgust, in other plays Shakespeare uses disgust in more subtle ways. Irish's short chapter on food disgust leads into an analysis of *Timon of Athens*, in which problematic eating is both thematically and symbolically central. On the one hand, the play stages scenes of excessive feasting by Timon's parasites; on the other, it concerns itself with the boundaries not only of the natural but of the social body in its treatment of the voluntary and involuntary expulsion from the polis of Timon, Apemantus and Alcibiades. Accordingly, the body's overeating, vomiting and other forms of disturbed consumption serve as figures for the play's interest in the life of the city. In its second half, the play's anxieties over what does and does not make its way into the body shift towards a concern with disease, physically embodied (Timon assumes) in the the sex-workers in Alcibiades' entourage. The prospect of Athens being overcome by plague and violence is, for Timon, a revenge fantasy, but it also embodies the hope that a disruptive and disgusting incursion may somehow serve to cleanse the city of the corruption that besets it.

Irish's analysis of *Timon* sees disgust as giving coherence to a problematic play; in *Coriolanus*, however, it is an emotion that is strategically evoked by the characters themselves. Martius/Coriolanus himself is the quintessentially disgusted Shakespearean protagonist, repeatedly expressing dislike of Rome's plebeians in terms of bodily revulsion; his rhetoric, however, is picked up by the tribunes who mobilise ideas of sickness and infection when demanding his expulsion or death. Irish does well here to link the play's imagery of besieged and assaulted towns with its stress on Coriolanus's own wounded body: as in *Timon*, both the disgusted and the disgusting body offer means of exploring themes of social inclusion and exclusion.

The status of Coriolanus's wounded body as a potential trigger of disgust leads Irish into a wider discussion of so-called 'body envelope disgust' (p. 135). This term refers to the scientific hypothesis that traumatised bodies elicit disgust because of their capacity to transmit infection; more widely, however, any non-normative body can trigger the same response because of the viewer's unconscious assumption that such non-normativity may be a result of disease. A key concept here, and one referred to repeatedly in Irish's book, is that of the 'behavioural immune system' (p. 99), offered by some scientists as an explanation for the way a disgust reaction can be triggered by stimuli that are not, in themselves, harmful. As Irish recognises, this means that the BIS has the potential to act in ways we are likely to find troubling, encouraging the marginalisation of the sick and disabled; for Shakespeare, too, 'those who inhabit

stigmatized, non-normative bodies are more often than not presented as morally suspect' (p. 138), as in the cases of Richard III and Caliban. Another consequence of the BIS, according to Irish's reading of the scientific literature, is that it has contributed to prejudice against people outside one's own social network: 'the disgust system mistakenly interprets human difference as a sign of potential infection that must be avoided' (p. 166). This susceptibility is graphically exploited in *Othello*, Irish argues, where Iago transmits to those around him a racialised disgust that originates in Iago's anxiety that Othello has cuckolded him.

One potential objection to Irish's argument at this point might be that it places too much emphasis on Iago: in asserting that the process whereby 'the citizens of Venice adopt the disgust-based outlook of the racial Other [...] originates in Iago's individual malice' (p. 162), it effectively scapegoats one character as the proponent of racism rather than finding that racism's origins in the wider society. Another, though, might be the opposite. Irish rightly notes that 'Brabantio apparently once "loved [and] oft invited" Othello into the life of his daughter (1.3.129); his bigotry is not absolute, but is rather stoked by Iago' (p. 155). Desdemona, for her part, evidently does not feel the racial disgust that Iago thinks she ought to. This would seem to undermine the assumption that 'outgroup disgust' is ingrained, 'an evolutionary by-product of disgust's biologically protective functioning' (p. 165).

The complex and erratic workings of racism in *Othello* also raise questions about the behavioural (as opposed to the biological) science of disgust and what happens when it comes into contact with the messy and inconsistent nature of human lives and literary texts themselves. Irish is, I would emphasise, at pains to avoid any suggestion that because disgust at certain types of people has an evolutionary origin, such disgust is either inevitable or legitimate: far from it. But one consequence of the way he positions literature and drama in relation to science is that scientific arguments implicitly acquire the status of truths that can then be used to explicate fictional texts — a move that arguably risks pushing to the margins the possibility that fictional texts might be able to interrogate scientific assumptions. If the racialised disgust that Iago feels and mobilises is universal, where does that leave Desdemona? If Gloucester's blinding in *Lear* represents a disgusting reminder of human viscosity, where does that leave the servants who tend to him? What about Lear's intimacy with Poor Tom, or Marcus continuing to call the mutilated Lavinia 'lovely niece' in *Titus Andronicus* (2.4.40)? If 'Jewish people [...] were understood as fundamentally disgusting by many English subjects' (p. 170), how does one explain the very different depiction in *Merchant of Venice* of Shylock and Jessica? Clearly one would not want to present these instances as normative: to do so would risk minimising the prejudice that scholars working in critical

race studies, disability studies and the like have rightly emphasised as a presence in Shakespeare's writing. But forgetting them risks promoting a pessimistic vision both of humans' susceptibility to disgust, and of the capacity of literary texts to promote empathy and to question ingrained attitudes. None of this is meant to diminish the value of Irish's book, which makes a compelling case for the centrality of disgust as a Shakespearean theme and uses it to draw together a wide variety of topics including race, disability, social cohesion and dramatic spectacle. Rather, it is intended to raise questions about what happens when modern science and early modern texts are put into dialogue with one another as Irish so productively does.

The final play Irish examines in detail is *Hamlet*, which he considers in terms of Terror Management Theory — an approach that interprets cultural worldviews as attempts to deal with the prospect of death. Within this framework, disgust can be seen as an attempt to avoid phenomena that remind us of the mortality we share with other creatures. Irish argues that the death of Hamlet's father triggers in the son a traumatised awareness of this mortality, and consequently disgust at another phenomenon that reminds him of his own creatureliness: his mother's sexuality, newly brought to the fore through her marriage to Claudius. Viewed in this context, the play's 'disparate elements — Hamlet's anxiety towards death, his obsession with corruption and decay, his puzzling sex nausea' — seem to make sense, providing 'another example of how Shakespeare may have intuitively anticipated features of disgust that have been articulated in the modern research laboratory' (p. 194). As with the other chapters of his book, Irish provides a lucid analysis of his material that uses the idea of disgust to find illuminating connections within it. However, I'm slightly perturbed by the hierarchy Irish seems to be setting between playhouse and laboratory as potential locations of truth. It's instructive to read his book against that of Sarkar, which provides a reminder of how historically contingent that distinction might be.