

instance, Ngai interprets Henry James's late fictions – whose elaborate narratives of coincidence regularly feature instances of 'occulted' domestic and service labour – as indirect indexes of the author's shift from 'writing longhand, silently and alone, to dictating to a hired typist' (the typist and type-writer both representing instances of labour-saving techniques), as well as 'the rise of an incipient service economy that would come to supersede manufacturing and industry in Great Britain and other wealth nations'. This contrived, if always engaging, reading of James's late narratives stands in contrast to an earlier chapter focusing on the Norwegian post-conceptual artist and photographer Torbjørn Rødland, whose kitschy yet enigmatically seductive photographs of people and objects serve to illustrate the gimmick's comprised form in a relatively straightforward manner. Despite the capacious and eclectic character

of Ngai's study, there remains, moreover, a latent provincialism in the book's archive, which comprises artists and writers deriving exclusively from North-America and Europe, as well as Ngai's retention of 'postmodernism' as key periodising and critical category in the face of its critical displacement by the globalisation of the resurgent concept of modernity. For if the aesthetic judgement and form of the gimmick tells us something central about 'the basic laws of capitalist production and its abstractions as they come to saturate everyday life', it makes sense to ask in what ways 'capitalism's most successful aesthetic category' comes to be unevenly registered beyond the metropolitan centres of the capitalist world-system? Or does the judgement of the gimmick, like the phenomena of postmodernism before it, name a narrowly conceived Euro-American capitalist modernity exhausting itself?

Alex Fletcher

Normativity at the edge of reason

Cecile Malaspina, *An Epistemology of Noise* (London: Bloomsbury, 2018). 256pp., £90.00 hb., £28.99 pb., 978 1 35001 178 6 hb., 978 1 35014 176 6 pb.

In recent years noise seems to have become an interdisciplinary concept *par excellence*, apt to capture important dynamics at work whether in technological, scientific, social or aesthetic domains. But when economists, biologists, psychologists, and musicians speak of noise, are they all referring to the same thing? Cecile Malaspina takes this dispersion of the notion of noise as a starting point, accepting that, when removed from its mathematical formulation in information theory and spread into diverse disciplines, noise takes on a metaphorical ambiguity. Yet rather than eliminate this ambiguity, Malaspina sets out to account for it. The key problem in *An Epistemology of Noise* is not to identify the legitimate usage of the concept of noise, but rather to examine what happens when noise moves between disciplines, and what the 'noisiness' of this movement tells us about the conditions for interdisciplinary knowledge. Noise here is both an object (or many objects) of inquiry and a condition for that inquiry, and presents us with the problem of how knowledge can find its ground in these 'shifting sands'.

While not aiming to dispel the ambiguity that noise takes on when adapted for new fields, Malaspina does differentiate her overall theoretical perspective from the notion that has allowed much of this adaptation to take place: that is, is the 'negentropy' associated with cybernetics and Norbert Wiener, where noise is opposed to information. Negentropy, or the negation of entropy (the tendency towards disorder), describes the means by which machines or systems, as bearers of information, self-regulate. The interdisciplinary concept of noise is often posited in relation to such a notion of negentropy, with noise being what forms of organisation, 'from the organism to the ecosphere, from socio-political to economic relations, from networks to the idea of globalisation', fend off in their processes of self-regulation. Malaspina proposes that in the information theory of Claude Shannon we find something quite distinct from this uptake of Wiener's thought. In Shannon's work we find a profoundly counterintuitive proximity between information and noise, and *An Epistemology of Noise* follows

the consequences of this counterintuitive formulation.

Part 1 of *An Epistemology of Noise* commits to the careful work of definition and distinction around the notions of information entropy, negentropy, and noise. A first disciplinary translation takes place when, aiming to define information, Shannon adopts Ludwig Boltzmann's mathematical formulation of physical entropy. It is not a direct adoption: Shannon subtracts from Boltzmann's formula the physical constant, in so doing increasing its ambiguity. The ontological arbitrariness that Shannon introduces thus makes this definition less constrained and more apt to adoption in other fields, and this constraint reduces further still when entropy is translated from a mathematical notion into a discursive one. This is already an instance of what Malaspina consistently highlights in the notion of noise: that an increase in noise, in ambiguity and uncertainty, serves as a condition for novelty. Noise comes to be associated with 'freedom of choice'.

By then defining information not in opposition to noise or entropy, but as itself 'information entropy', Shannon can be seen to face head-on a certain paradox of information. Information is associated with order – as for instance when the philosopher of information Luciano Floridi argues that information must be 'well-formed' – but in a purely ordered system nothing novel could take place, and so no 'new' information could be transmitted. In rejecting the intuitive association of information with order and certainty, and noise with disorder and uncertainty, Shannon avoids this paradox, but leaves his readers with the problem of dealing with a lack of clear distinction between what counts as information and what counts as noise.

This, for Malaspina, is to Shannon's great merit. Such ideas have further provenance in French philosophy – take, for example, Bergson's rethinking of the distinction between order and disorder – and Malaspina bolsters her examination of noise by turning to that tradition, with particular reference to the thought of Gilbert Simondon (whose *On the Modes of Existence of Technical Objects* she translated in 2017) and Georges Canguilhem. Simondon's notion of metastability is introduced, almost in passing, to show how noise within a system allows for the system to respond to a changing environment. Metastability, a term also used in Wiener's *Cybernetics*, names a state 'between entropic dispersion and structural iner-

tia', at the fuzzy border between noise and information, and so, despite receiving little further explication, the notion of metastability underlies much of the inquiry that follows its introduction. Simondon is also significant later, with his concept of transduction helping account for the translations that noise undergoes between fields. Transduction is a concept that Simondon uses to think across domains without reducing them to each other, and for Malaspina it is crucial that 'thinking in terms of noise differs from domain to domain' and that no 'universal key of conversion' will be easily found. Transduction thus provides for Malaspina the principle of transdisciplinary movement.



Arguably even more important is the short discussion of Canguilhem that closes the first part of the book. Foucault's now well-known summation of Canguilhem's philosophy, where error is said to be 'at the root of what makes human thought and its history', is taken by Malaspina to be key to understanding the varied conceptualisations of noise. It is here that the epistemological stakes of her project become clear. For Shannon information, formally speaking, is not about meaning,

and on his terms the meaningfulness of a message is not the concern of information theory. What in a message is considered to be information and what noise is thus a decision that precedes, and is outside of, the process of transmission itself. As such, with regards to meaning, the distinction between information and noise is rarely ready-made. What Canguilhem brings into focus is how the relation between information and noise, or, in terms closer to Canguilhem, between reason and contingency, is, moreover, always a *normative* relation. Thought is said to involve ‘the act of generating new norms’, of refiguring the line between information and noise. In this act, reason opens the question of its own grounding: for Malaspina a key distinction here is between a philosophy that aims to provide foundations for certainty and a philosophy that shows the limits of established norms and produces systematic uncertainty, and in the thought of Shannon and Canguilhem she finds a basis for the latter approach.

As information is a normative category, noise is often presented as its abnormal, even immoral, outside. Part 2, ‘Empirical Noise’, examines in different fields and disciplines the drawing and redrawing of the distinction between information and noise. After the detailed conceptual explication of Part 1, Part 2 captures the expansive reach of the notion of noise, dealing with discourses of noise in finance, statistics, biology, physics, and more. Throughout the question of normativity remains prominent, as in the ‘moral caveat’ that is widely and diversely inserted into common definitions of information. In statistics, for example, ‘the objective of maintaining stability of power through knowledge becomes a culturally determining factor for the definition of information and noise’, while strategies of ‘noise abatement’ have drawn an intrinsically political line between acceptable social sounds and unacceptable social noise.

Yet in contrast to these distinctions by which noise is taken as something to suppress or eliminate, what emerges in the process of Malaspina’s inquiry is a reinforcement of the notion that, following Shannon’s formulations, noise is not an object to be identified and studied, but a relational figure. Addressing the links between the psychology of acoustic perception and the use of noise as a deterrent or even a weapon, Malaspina identifies instances when acoustic noise is clearly decoupled from information theory’s conception of noise in the channel

of communication: the meaning of the noise made by acoustic weapons is clear, as it is intended to threaten or to injure. But where noise continues to be found here is how it is received, not as an object perceived or cognised, but as the incapacitation of perception and cognition itself. The closing pages of Part 2 introduce, via the sound theorist Steve Goodman, practices of inaudible sound being used to subvert conscious perception and rational cogency. Whether deployed by artists, the defence industry, or mass media, inaudible or barely audible sound has been shown to be able distort the critical faculties of those subjected to it. Here noise becomes not only a normative problem in various fields, but a problem for thought itself.

This theme transitions into the third and final part of *An Epistemology of Noise*: ‘The Mental State of Noise’. Yet while one might suppose that the concern here is going to be with the troubled condition of thought in an age of information overload, Malaspina adopts a quite different perspective. The starting point is a little-discussed 1986 article by the psychologist Steven Sands and the psychiatrist John Ratey, entitled ‘The Concept of Noise’. In this article Sands and Ratey define the ‘mental state of noise’, as a condition of distress caused by a sense of crowding and confusion in response to stimuli that the subject fails to tolerate and organise. As Malaspina points out, Sands and Ratey’s definition is implicitly in terms of a cybernetic sense of homeostasis, where the failure on the part of the self is a failure to self-regulate in relation to its environment. Noise here is, again, not an object of perception, but a disruption to perception, and thus at stake are ‘not the noises we perceive, but the noise of cognition constituting itself, against the always looming crisis of its dissolution’. In describing this state Sands and Ratey will speak of the ‘vicious whirl of sensations’ supposed of infant experience, and thus the mental state of noise is understood as a kind of regression.

Yet Malaspina finds in Sands and Ratey’s account an ambivalence between the mental state of noise as an excessive openness and a healthy openness associated with both infant learning and the poet John Keats’s notion of ‘negative capability’. For Malaspina, negative capability supposes a more radical perspective than Sands and Ratey assume. Rather than only affirming a ‘tame liberal motto of refraining from preconceptions’, for Keats negative capability involves existential risk, a putting in

jeopardy of one's stable identity in the name of artistic creation. Here the implicit cybernetic frame of Sands and Ratey's account is key: what is at hand with negative capability is not a question of a negentropy by which a system sustains itself in relation to its outside, which itself risks the 'catastrophic reaction' of shutting the self off from the outside, but a negation of negentropy, a step into 'the abyss of reason'.

This clearly distinguishes the project of *An Epistemology of Noise* from much of the recent work that has applied the cybernetic notion of negentropy beyond its original domain. In cybernetics information is said to counteract entropy 'in the service of an already constituted and correctly functioning entity', and at its limit, where the cybernetic account of man-made machines becomes a paradigm for social systems, this is linked to a logic of control as 'the idea of totalitarian domination without noise'. Just as calculating the level of contingency, or noise, in a mechanical system renders the system predictable, so this is supposed of social systems: we might picture here individuals as mere nodes in the circuits of an increasingly precisely controlled social system. Yet Malaspina highlights that such a high degree of control is only feasible when mathematical standards apply, and the application of a cybernetic model will be incomplete if it does not have an account of the *limits* of control, which, as Malaspina's transdisciplinary explorations show, are significant when working in discursive rather than mathematical terms. The adoption of notions of negentropy and control into the analysis of social systems may suppose that noise can be tamed far more than is the case.

Here Malaspina's emphasis on noise as 'freedom of choice' is key. The presence of noise ensures that a system cannot proceed mechanically, and that the opportunity of choosing between possibilities exists. The problem is not one of maintaining a system in the face of outside noise, but of facing up to the proximity and shifting line between information and noise that Shannon's definition of information as information entropy presents us with. In this light Malaspina can return again to Canguilhem for a crucial definition of normativity: normativity is to be understood as 'the individual's reassertion of his or her power to act, judge and decide, in other words, the power to generate new norms in answer to

life's contingent events'. What *An Epistemology of Noise* thus provides is a compelling instance of what Ian James has called 'the technique of thought', a concern with how reason constitutes its own grounds that James identifies as a key theme in recent French philosophy. While not denying that thought faces many mechanisms of control, at the core of Malaspina's project is a faith in reason to constitute new norms for living.

This places *An Epistemology of Noise* in an interesting position in relation to some other theoretical discourses on noise. Malaspina acknowledges that her entry point into the problem of noise was noise music and noise art, but sets aside direct engagement with scholarship in that area. What is distinctive in this scholarship is that noise is often not viewed as a problem, as it tends to be in other fields. For example, the editors of the 2012 collection *Reverberations: The Philosophy, Aesthetics and Politics of Noise* speak of 'the pleasures of transgression and subversion', and more generally the transgressive capacities of noise are celebrated by theorists including Greg Hainge, Paul Hegarty, and Jacques Attali. Malaspina's project, to an extent, goes along with this, aiming as it does to retrieve noise from 'the theoretical exile of negation into which it was thrown'.

Yet the logic of transgression behind this work has been subject to significant critique in scholarship on sound, with theorists including Eric Drott, Robin James, and Marie Thompson highlighting how, among other instances, Jacques Attali's fantastical yet widely influential account of music anticipating social change relies on attributing to music the logic of capitalism's self-transgression and self-transformation. *An Epistemology of Noise* is doubtlessly more subtle and measured in its dealing with the critical potential of noise than is this work, and moreover it suggests crucial questions for these champions of noise – where does the normative element lie if not in pure transgression? And where do we want it to lie? – but its own confrontation with 'the abyss of reason' requires a careful consideration of the limits of a logic of transgression. *An Epistemology of Noise* does not present any easy answers to these questions, but, in its series of asymptotic approaches to the shifting problem of noise, it makes clear their significance to any attempt to engender new forms of thought.

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