Introduction: The Experience of Noise

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This volume's aim is to stimulate philosophical interest in and discussion of experiences of noise. A few different reasons can be given for why philosophers ought to be more concerned with our topic. One is naturalistic in tenor. Noise seems ineluctable in the universe, at least inasmuch as it is a phenomenon from which none of the sciences seem exempted. Insofar as human beings live within that universe, they too would be susceptible to and affected by noise, and one might then say noise is a crucial and fruitful matter for philosophy. One implication of this might be that the philosophy of noise ought to draw upon how noise is defined and investigated under different forms – as white or black, pink or brown, among others - within the natural sciences.

Another source of our interest in noise looks not to science but instead to the warp and woof of everyday life. Noise also seems unavoidable in the human world, if not particularly so in our contemporary human world. This is manifest in our technologies and the practices of which they are a part: for instance, in our occupations and pastimes, as we both avoid and seek out forms of noise in light of some evaluative interests. It is also evident in our communications and interactions with others, in which we both cope with and perhaps also mischievously incite forms of noise. From the perspective of 'everyday' human life, noise always shows up, introducing variables that may resist sense-making and coordination with others. In this way it sometimes poses threats to our minds and bodies, while at other moments may disclose the unheralded and the revolutionary. As an unavoidable figure on the scene of human experience, noise may disrupt and disturb, but also shapes the forms that perception, communication, cognition, and aesthetic and evaluative practices take, and perhaps also the forms they cannot take.

Examined more closely, each of these motivations can come under critical pressure. The naturalistic interest builds off the idea that there is a relationship between noise as a scientific phenomenon and some types of experience that may seem noise-like, and that the one may be understood in terms of the other. Yet that is a tricky matter. Even if noise phenomena are ineluctable from a scientific perspective - i.e. every science confronts some or other forms of noise - the actual distributions of noise (noise happening somewhere, sometime, somehow) have unclear implications for human experience. That is, even if one would insist that no part of the universe is exempt from noise, still one might wonder about how that claim applies to experience. It may not be taken out of hand in what respect human experience is to be understood as 'a part of' or co-extensive with the universe and thereby as liable to incur or undergo the types of noise contained within it.

Challenges emerge just as quickly on the side of the presumption that noise is a frequent or unavoidable aspect of the human world or everyday experience. A key consideration here is that noise as a concept may seem insuperably linguistically if not culturally relative. To take an example from our (European) frame of reference, here are some substantives in Dutch by which one might translate the term 'noise': *lawaai, knal, herrie, kabaal, geruis, rumoer, storing.* The first six have a clear auditory dimension, and go from denoting crash and bang, to ballyhoo and din, and then to hiss and drone; the last one ('interference, disturbance') would be more prevalent in communicative or technical contexts. Yet none of those terms would be a natural choice to describe, in Dutch, a painting such as Carlo Carrà's *I funerali dell'anarchico Galli* (1911). This is arguably so, even when our viewer would be aware of Carrà's own claim to have "partly rendered (...) sounds and noises (rumor)" in that work. (1913, 3, emphasis added) This example is but one of many that

could be given, concerning how the concept 'noise' fractures differently in various cultural and linguistic contexts. It thus points to questions about whether there are shared or 'common,' i.e. non-relative, experiences of noise, even if its implications are not clear-cut. It might be taken to point to something missing in Dutch - e.g. the lack of some broader concept, 'noise,' which underlies or unites its various guises as din, ballyhoo, etc. 1 Or it may be taken to indicate that there is no such lack to speak of in the first place, because claiming a painting or a plate of food manifests 'noise' is a misplaced abstraction.

In drawing together contemporary philosophical research on noise, the goal here is not to put such concerns to bed. Challenging though it may be to know where science and human experience meet up, or to formulate a coherent concept of noise for all cultures and peoples, or for all epochs and circumstances, it nonetheless seems to us a crucial and fascinating task to investigate what it is that we experience and denote here and now - in this world, or this part of it - as noise. There certainly seems to be something going on with noise in contemporary human lives, as it arises in different guises, and this is reflected, among other places, in a burgeoning contemporary discussion of noise. In the ensuing, we shall highlight some of the manners in which noise has been studied and discussed in the sciences and human sciences, and point to some openings where philosophical investigation of the experience of noise - 'phenomenologies of noise' - can meaningfully intervene.

1. The state of noise today

Let's take a beat; what are the experiences to which our interest is drawn? Which kinds of experiences are experiences of noise? If the short answer here is that there are many indeed, it is equally true that their lines of demarcation may seem blurred, their differences and relations to each other confusing. At the risk of oversimplification, then, an example - of an actual event - will help to open up a conceptual space for considering our topic. In August 1991, some people gathered at a pavilion in a park in Gonju, Korea, to listen to a sonic performance by the Japanese artistic project, Merzbow, led by Masami Akita.² The performance, as evidenced by audio and video recordings, is not easy to characterise. What the artists produced seems insistent and unruly, disruptive if not disorientating, alienating for some and perhaps intriguing for others. One description - one which Akita has embraced throughout his productive oeuvre - seems particularly fitting; it was a performance that affords an encounter with noise.³

This description of Merzbow's performance jells with some typical conceptions of noise. In common parlance, noise is often referred to in at least five main registers: (a) as clamour, commotion, or din; (b) as disagreeable or vexatious sounds; (c) as manifestations that disturb, obscure, and make uncertain; (d) as stimuli or data that are irrelevant or devoid of meaning; (e) as

¹ All the same, some linguistic and cultural contexts may be more pliable than others in how they refer to properties and events that may seem 'noise-like.' In Sicilian dialect, while *scruscio* would be a more common term for auditory noise, *burdèllu* (*bordello* in Italian, whose literal meaning is 'brothel') could in the context of describing the painting plausibly be interpreted as referring to some 'noise' or 'messiness' manifest on Carrà's canvas.

² This performance took place during the "The International Natural Fine Art Exhibition of Kum-River," in Gongju. A recording of this event can be heard on the track "Soul to Seoul" on Merzbow (1993). A partial video recording of it is also available at: https://www.youtube.com/watch?v=mpMs7KYWDh4 (Retrieved May 5, 2024).

³ Cf. Hegarty (2007), especially p. 138 ff., for discussion of Merzbow's work and its context. For comparable examples of performances of noise, including the viewpoints of the artists involved, cf. Cornelius's documentary (2008) on the Portland, Oregon noise scene.

sheer sound or sound that is unidentified.⁴ At least four of these registers are applicable to the performance in Gongju, even if some seem more apt than others. It is hard to dispute that the artists produced a sonic pandemonium (a), and going by the reactions of persons recorded on video (covering their ears, leaving the scene) it was not equally agreeable to all of them, and would not necessarily be for anyone listening today (b). Likewise, anyone listening then or now could hardly be faulted if they found the sonic performance disturbing or disruptive, even when listening to it at a low volume (c). Lastly, it is not easy to discern just what, if anything, is behind this performance, as a plan, structure, score, or theme; i.e. just what one ought to listen to in the performance, and why. Yet this might also have to do with the nature of the impure, distorted sounds the artists drew from their objects (d). Yet if, in all these ways, listening to Merzbow's performance may be counted as an experience of noise, this does not rule out that there may still be other manners of encountering or undergoing it as well.

The idea that there are experiences of noise, like that of listening to Merzbow's piece but also others, currently draws a wealth of attention in the sciences and the human sciences. This is notwithstanding the fact that, in those discussions, noise is sometimes conceived in ways that range beyond its standard or everyday deployments. A brief, barely representative tour of the landscape of recent research confirms this. Presented in no particular order, there are at least four prevailing perspectives on noise within that terrain, which sometimes overlap. First, there is extensive interest, inspired by Shannon and Weaver's seminal work, on noise as a crucial factor which may interfere with, but also be necessary to, the transmission and reception of signals (1964). This 'signal versus noise' paradigm is influential in just about any topic one might think of, from biology to linguistics and sundry other areas.⁵ There is, second, a voluminous literature comprising diverse fields (e.g. neuroscience, psychology, acoustics, sociology, urban studies), which approaches noise as an intrusive or even nefarious element in one's environment: whether as "environmental pollutant" (Arjunan and Rajan 2023; Ruiz and South 2019), or as a hazard or "risk factor" for the health and development of forms of life (Kamerer et al, 2019; Themann and Masterson 2019; Gill et al 2015; Makopa Kenda et al 2014). Third, noise is sometimes approached, for instance in neuroscience and psychology, as a perturbation or interference in human perceptual, cognitive, or communicative processes ("random perturbations," Baker 1962; Swets 1964; Pelli 1981; Faisal 2008; Szalma and Hancock 2011; Cowan 2016). Under this conception, such noise may be either "intrinsic" or "extrinsic" to those processes and their systems (Aston et al 2023; Pelli 1981).6 Fourth, in those same fields there is an overlapping but still distinct interest in noise where noise is framed as the dynamic variability, uncertainty, or disorder of either a set of perceptual or cognitive stimuli or of the perceptual or cognitive processes that deal with them (Sands and Ratey 1986; Levi et al 2005; Handel 2006). Strikingly, two or three of these conceptions may on occasion be invoked in one same study (Arjunan and Rajan 2023; Battaglini et al 2023; Aston et al 2023). It is important to note here that when a concept of noise is invoked in these fields, it is not always clear whether the 'noise' under consideration involves 'phenomenal noise,' i.e. such as the noise that is forthrightly encountered in Merzbow's piece. One example here would be the numerous studies of so-called neuronal noise ("aperiodic brain activity," Landau 2021), sometimes framed as "stochasticity" in the brain (Tsuda 2001; Uddin 2020; Malach

⁴ Wordnik. (n.d.). "Noise." Retrieved May 5, 2024, from https://www.wordnik.com/words/noise. Cf. Schafer (1977, 182) for a comparable set of definitions of noise.

⁵ Cf. Malaspina (2018) for discussion of this notion of noise and its influence.

⁶ N.b., within this perspective one needn't suppose that such 'systemic noise' involves anything like a signal.

2024). In respect of the focus of these studies, it should not be presumed that some noise in the brain entails that one has an experience of noise in some respect or other.⁷

Regarding how noise is taken up in philosophy and philosophy-adjacent fields (sound studies, literature and art studies, communication and social theory, digital theory, ...), we should remark a distinction in line with the one just noted. Namely, in philosophical discussions as well one ought to distinguish between perspectives that take an interest in noise per se - e.g. as a scientific concept or phenomenon - and those that explore or invoke a perspective on experiences of noise ('phenomenal noise', 'experiential noise'), for instance, such as when looking at how noise might both affect and be present in some perception. The former interest is pursued in the context of the philosophy and history of science (Cohen, L. 2004; Bogen 2010; Woodward 2010; Wittje 2016; Montuschi 2017). The latter focus defines our scope here, and in such studies analogues of previously mentioned conceptions of noise can readily be found. Some examples of such would be Schafer's development of the idea of "soundscapes" that can come to be infested by "noise pollution" of contemporary urban and industrial environments (1977), and Attali's conception of noise as "weapon" and "violence" (2009, 24, 26). The idea of noise as irrelevant or meaningless data is pervasive in contemporary philosophical discussions enrooted in information-theoretic perspectives - see, for example, current debates on perceptual and predictive processing - of which Dretske was arguably one of the philosophical pioneers (1981). A kindred, communicative conception of noise (i.e. as that which is opposed to 'signals'), though conveyed in a far different philosophical register, is pivotal in Serres's influential account of noise in Genesis (1995) and other works.

There are nonetheless a few lines of approach more particular to the study of experiences of noise within philosophy and related fields in the humanities. Three stand out in particular. One that has provoked much debate is the relationship between noise and music, stemming from a thesis often attributed to Helmholtz. Broadly speaking, this is a discussion regarding whether, on the one hand, there is something which sets musical sounds apart as a set of sounds. For instance, on Helmholtz's hypothesis, this is due to their "perfect regularity" and temporal periodicity, by which they acquire pitch (Helmholtz 1971 (1857), 76; 1954 (1885), 8 ff.), which other sounds may lack. On the other hand, it is a discussion about whether 'noise' may simply be understood as whatever is 'non-musical sound,' or rather a subset thereof.⁸

A second key philosophical idea explored in the humanities takes noise to be 'sound out of place,' i.e. as analogous to a kind of impurity or 'dirt' that may contaminate one's environment if not one's experience. Arguably enrooted in the anthropologies of either Claude Lévi-Strauss or Mary Douglas, this line of thought takes 'noise' to be a fluctuating social category. This means its social grounding or construction must be understood in terms of the evaluative, epistemological, and political priorities (among others) of the communities in which such a classification has proved to be more or less convenient or reliable (Kahn, 2001; Bailey, 1996; Cockayne, 2007; Cohen, 2004; Dubois, 2016). This conception adds particular complexity when it comes to grappling with the ethics of noise; understanding who is exposed to noise in our contemporary world and also who is entitled to generate noise for others, and why (Bijsterveld 2008, 31 ff.; Malaspina 2018, 143, ff.; Musser 2024; Destrée 2013).

⁷ This is to say, some research has hypothesised that such neuronal noise may be involved in the optimal functioning of the brain.

⁸ Chion (2016, chapter 5) and Truax (1984, 85 ff.) have both advanced pointed criticisms of a "static labelling" (Truax) of certain sounds as noise. One basis for their reservations is how there seems to be music, particularly in the world outside Europe, that incorporates non-periodic or non-pitched sounds; another is the fact that even the sort of music that Helmholtz focuses upon involves non-periodic sounds (Truax, *ibid*.).

Third, there is an extensive and widely-diverging literature on the aesthetics of noise. While it would be impossible here to give a representative synopsis of such discussions, such inquiries are chiefly concerned with what might be either aesthetically pleasing or at least aesthetically intriguing about works of art and artistic practices that seem to incorporate noise. In some cases, noise or noisiness is considered solely as a feature of music, where the issues concern what such noise contributes to or how it comes to define that music (Miller 2022; Bucknell 2020; Klett and Gerber 2014; Gracyk 1996). In other discussions of aesthetics, noise is not solely considered as sonic noise or as an aspect of 'sound art' (e.g. Hainge 2013; Hegarty 2021; Thompson 2017; Labelle 2015; Voegelin 2010). At the risk of being uncharitable, one might discern in the latter discussions three frequent concerns in their philosophical approach to noise: a commitment to the idea of the existence and ubiquity of noise in both the world of art and the human world as a whole; a tendency to frame noise as resistant to theorising about it, and particularly, to any theorising taken to be reductive, monolithic, or deflationary in its aims; 10 and a disposition to draw in particular on certain French theorists of the late 20th century, particularly Gilles Deleuze and Michel Serres.

Concerning current conceptions and discussions of noise, these views are just the tip of the iceberg. Nonetheless, a few things may be extrapolated from this sweeping overview. First, there do seem to be a few common threads between so-called everyday conceptions of noise and scientific and philosophical discussions of noise; see, for example, the recurrence of ideas of noise as disturbance, irrelevance, or adulteration. A second takeaway is that while noise is commonly conceived in terms of auditory experience, it is not always conceived as such. Third, and most significantly, it should be clear that there is a considerable plurality of conceptions of experiential noise - that is, of what an experience of noise involves - whether in terms of its more everyday conceptions or as the focus of some research. Between some of those perspectives on noise, perhaps some bridges or connections seem available. Between others - such as noise as vexatious sound and noise as irrelevant data or useless information - the paths between them may seem far less clear, if available at all. This is to say that one need not be a linguistic relativist in order to harbour hesitations about the idea of 'experiences of noise' as some sort of unified or coherent category; the multitude of approaches to noise we have just reviewed also motivates such concerns. And yet, with due respect to the sceptical view, an outright denial that there are experiences of noise - somehow, sometimes - hardly seems viable. For anyone who ever encountered art like Merzbow's, or has tried to communicate under difficult circumstances, or who has gone for a walk during a gale, the notion that there are experiences of noise seems hard to escape.

In light of the plurality of conceptions of noise, there is thus much opportunity for philosophical clarification. Thinking back to our earlier example, if Merzbow's art affords an experience of noise, what are other such examples, and what might, if any, be common features between them? How can clear lines be drawn for understanding what is or is not an experience of noise? What grounds experiences of noise, and how might one be mistaken about noise - for instance in not perceiving noise under some form when one should?

The nature of such clarification certainly could and probably should take different shapes. It might be better to be a bit cautious or uncertain about the nature of noise and its experience, and thus not to be too headstrong in adopting just one philosophical approach or framework for approaching it. For instance, one might forego the search for an all-encompassing account of noise and focus instead on what is philosophically intriguing about one or a couple of the ideas

⁹ Cf. Thompson (2017, 175); Goddard et al (2012).

¹⁰ Cf. Hainge (2013, 274-75) for an instance of this view.

of noise reviewed above. One might set out the terms for understanding what 'experience' involves in the first place – e.g., according to a Husserlian phenomenological framework or according to popular tenets within contemporary philosophy of mind and perception - in order to arbitrate the question of what could or could not count as an experience of noise. ¹¹ One could explore the philosophy of listening, as for instance developed by Dufrenne (1991), Nancy (2007), Jankélévitch (2003), Idhe (2007), and others in order to discern their alertness to questions of noise. Without prejudice to the shape that such clarification could take - there could be many - there are no few important questions regarding noise and its experience to which it could be devoted. The following are a few of them.

2. Experiential domains of noise

How might philosophical exploration of the component parts, conditions, and distinctive character of human experience - 'phenomenology,' broadly conceived - aid the disambiguation of experiences of noise, and particularly, of which kinds of experiences are properly 'of noise'? How might it help to see which of the above conceptions are interlinked, and which may in fact have little to do with an experience of noise at all? Let's take a few questions here for a brief spin.

One way of coming at that disambiguation would be to delve into the different types or classes into which human experiences fall, and to explore whether noise makes up a manifest part of all or only some of them. The idea that there are experiential classes is one that tends to hold a lot of stock for 'phenomenologically-minded' philosophers. It rests on a complex premise that an experience such as a perception, as when one witnesses a gale, is critically different from certain other experiences such as imagining or remembering a gale, and that these may be different again from other types of experience: i.e. different from having an emotion in or about the gale (fear, exhilaration), cognising or coming to a belief about the gale ('We're in the teeth of it'), or taking action in the gale (taking shelter, flying a kite). The thought that there are experiential classes could be a useful tool for understanding experiences of noise; it may be worthwhile to consider whether noise may be something encountered across the full spectrum of the classes of human experience.

Moreover, one might also consider whether significant differences between experiences of noise emerge when the latter are carefully distinguished according to the class of experience in which noise is putatively encountered. That it, it may be interesting to explore whether noise is encountered in the same way within each experiential class. For instance, this might mean that the way some perception involves manifest or phenomenal noise has to be distinguished from how one discovers one's beliefs or cognition to be infused with noise; for in the former case what one might describe is a sense of the "indeterminacy" of one's perception, as when one cannot distinguish the shade of some object (Beck and Languedoc 2023, 5), whereas in terms of the latter what one might recognise is the *inconsistency* or apparent randomness of one's own beliefs ("level

¹¹ Such an approach may be said to characterise Benoist's rich study of noise, though ultimately he arrives at a sceptical position about whether phenomenology is in a position to say much about noise or experiences of noise (2013).

¹² In current times, different conceptions and practices of phenomenology are in circulation, where they may not always seamlessly line up with each other. Here, we shall not take a stance on which of these phenomenological perspectives ought to take precedence over any other, but will aim to frame some questions relevant to many of them.

¹³ These experiential classes should not be taken to exclude each other; one can certainly have an emotion while acting or perceiving, but then one's experience may be said to combine the characteristics of the experiential classes which comprise it. The composition of the basic experiential classes is subject to much debate; the list presented here is purely illustrative.

noise," Kahneman et al 2021). Insofar as indeterminacy (of a perception) and inconsistency or randomness (of one's beliefs) ought not be conflated, where each has its own conditions and experiential character, one would thereby arrive at a manner by which to pull apart the concept of 'experience of noise.' Such a path of inquiry may lend support to the idea that 'experiences of noise' can mean quite different things which do not always line up with each other; in this way, the notion that noise surfaces differently across these classes may help to account for some of the plurality of conceptions of noise discussed above.

Experiential classes are not the only way to carve up human experience for fruitful philosophical analysis. Another angle of approach enquires into the kinds of access to the world – access for example to objects, events, and situations, and their features - that our experience at least seems to grant. One popular, age-old version of this question looks at perceptual experience in particular, where so-called 'external' or empirical perception encompasses accesses of presumably incommensurate sorts; seeing a cleft in the bark of a tree is not the same as feeling it, and these are both unlike smelling it. Such different sorts of access to the world are sometimes referred to as the various sensory modalities of human perception, and here another interesting perspective on the experience of noise opens up. Is noise something that is disclosed across all these sensory modalities of perception? Is it present more in some than others? Does noise sometimes have nothing at all to do with some types of our sensory access to the world?

A suggestive datum here can be drawn from the synopsis of conceptions of noise above. Even though noise is not always taken as simply synonymous with 'sound' or 'unidentified sound,' we have seen that some theorists do have a predilection to conceive of noise in terms of auditory perception. There is clearly something attractive about the idea that noise is only or chiefly a sonic phenomenon, and a definite aspect of human aural access to the world. This idea opens the way to thinking that 'other' conceptions of noise are simply notions abstracted from auditory experience, and thereby offers a tempting deflationary stance on how to construe phenomenal noise. Still, not all ambiguities about the experience of noise would thereby be resolved in such a stance. One such would be why certain sounds seem like noise and why others do not. Are there certain sounds which intrinsically have the character of noise, as Helmholtz seemed to think, and if so, and on account of what? Is it their effect on the human aural system, the sources from which they stem, the information they either furnish or obscure, or something else? Or should one think that only certain combinations of sounds can seem like noise - which combinations are then the noisy ones? Lastly, there would remain a puzzling question about the relationship between the noisy and the loud. Not all auditory experiences of loudness seem aptly described as encounters with noise; think of a drum and bass performance, a crowd cheering on some athletes, or waves crashing on rocks at the coast. Moreover, no few experiences of noise seem unconditioned by aural loudness; one may only faintly hear the neighbour using an angle-grinder down the street, but it may still seem like unbearable noise. The loud and the auditorily noisy seem both importantly connected and ill-disposed to be identified with each other.

There may however be forms of noise that affect and come to be manifest in other sensory modalities of human perceptual access to the world. As we have seen, philosophers and others currently studying human vision often refer to noise as an evident or discriminable aspect of such perception; Kahn, Hainge and Thompson all claim that noise is an important component of a number of artistic works that are not sound art (Kahn, 2001, 33; Hainge, 2013, 209 ff.; Thomson, 2017, 130). On such a premise, noise ought not be understood only in terms of auditory experience, and to put the point more strongly still, auditory noise ought not be taken as paradigmatic for noise phenomena in other experiential domains.

There would be different ways of elaborating such a premise via a phenomenology of noise, but here's one go at it. Something quite important that human perception provides access to is the communications of other persons and entities. Indeed, experiencing how access to others' communication may be disrupted or interfered with may be cited as one of the most important and definitive examples of encountering phenomenal noise. We directly confront or become aware of noise when we cannot access others' (auditory) communications, as when we try to understand a friend on the other side of a busy pub. However, if one concedes that communicative scenarios such as this are crucial instances of noise experiences, it seems one has to relinquish any presumption of a strictly auditory conception of noise experiences. This is because communication has no need of the auditory sensory modality. In order to communicate with us, the friend across the pub might wave various flags or pass over to us differently flavoured plates of pralines of identical colour and shape, where our access to such 'communication' by them would be hardly less prone to being affected by noise. Moreover, when our friend might use gestures, i.e. bodily expressive actions, to communicate with us in the pub, these visual communicative inputs themselves might seem noisy, irrespective of whether the pub is (auditorily) noisy or not. For such reasons, one might support the claim that experiences of noise go beyond auditory experience.

This is not yet an airtight argument for the multimodality of phenomenal noise. On the formulation given here, it may be guilty of conflating intuitions regarding the experiential classes of noise with questions concerning the sensory modalities of noise. Without assuaging those worries, we nonetheless take it as indicative of the opportunities to be explored regarding the nature of non-auditory or multimodal noise. The implications of thoroughly elaborating such a picture would be abundant. As seen earlier, there is ample current interest in so-called "noise pollution" and the adverse effects of noise on the development and quality of life of humans, if not other forms of life. Yet in such research, a default assumption is that such noise is auditory in character. However, if there is also non-auditory noise, should such noise also be understood to somehow contaminate human life, or to have ill effects on it? Do different types of noise, as categorised according to their sensory modality, have different potentials of effects – good, bad – for the forms of life encountering them? The philosophical task of clarifying the types of our perceptual access to the world is an ongoing project, to say the least; both in terms of delimiting their supposed distinctness, and also in terms of exploring their interrelation and overlaps. But it could be that such clarification, and its impact on how to understand noise, has much to contribute to questions of the effects of noise, once the latter to understood to include more than the auditory.

3. The ontology of noise

Some phenomenologies are taken to be in the service of ontology; others are not. It really depends on who you ask. Granted, sometimes phenomenology may not offer the most helpful way to address the nature of the existence and inexistence of certain things; we humans seem to suffer from certain lacks and limitations in terms of our capabilities of experience of the real and the irreal. Nonetheless, examining the nature and conditions of our experience may be integral to revealing certain hidden ontological commitments on our parts, and for coming to terms with them. For anyone open to the contributions of phenomenology to understanding what exists and what does not, here are a couple ways in which clarifying the experience of noise may be of some use for some issues within the ontology of noise.

One key problem is this: what is noise? Is it an object, or a feature or modification of some object (a sound, like the car's horn; a visual datum, like a shadow)? Is it a feature of some conglomerative circumstances in which some entities exist (the creatures and other things that make up a pub, a carnival, a forest)? Is it a property of some action upon one or some other entities (the waves, the rocks)? Is it an aspect or a condition of interaction between certain entities, which is to say, of a system of mutually interrelated entities? Is noise simply the opposite of a signal, and does the existence of noise always presuppose the actual transmission of a signal?

Here is an example of how a phenomenology of noise might inform such ontological questions. A topic of debate is what sounds are; whether they are to be understood as events (Casati and Dokic, 1994; O'Callaghan, 2007) or as features of objects (Pasnau, 1999, Kulvicki, 2008), or as something else. Insofar as noise might be considered a subset of certain auditory experiences, its careful description might then support the one or the other position. For example, one might try to show that the auditory experience of noise has a necessary circumstantiality or contextuality. Such a demonstration would stand in contrast to how it might seem that certain sounds (e.g. Junior Well's harmonica) seem able to be identified no matter the circumstances, and so are able to be conceived as being the inseparable properties of certain objects. If one might argue that grasping or undergoing the sound of that harmonica as noise requires that certain conditions on one's experience must be in place, which must be given and apparent as such, it could be taken to support to the 'event' view of sound, at least as it applies to the subset of sounds that count as noise.

One issue at stake in such ontological questions is that to which we should attribute phenomena of noise. In the example just given, the underlying idea would be that there are noise phenomena because of the way the world is. Another option for exploring the ontology of noise here is that there are noise phenomena because of the way the human being is. For many, this may seem like quite a neat option, because it opens the door to the thought that noise does not exist or is not 'something' in the first place. For instance, one might attribute experiences of noise to faults and defects in human perceptual and cognitive systems, per Kahneman et al's thesis about recalcitrant biases in human judgment (2021) or Sands and Ratey's suggestion that it is because of rigidity and habituation of a person's psychic constitution that they may experience noise. (1986, 292)

This irrealist stance has a long history in philosophy and the sciences, and remains an appealing position philosophically because it treats three issues in one pop. It resolves the question of the existence of noise by taking noise out of the world and making it out to be something that does not really exist, but for our human nature. It also resolves why there are experiences of noise – there is phenomenal noise due to human beings not being able to keep up in one way or another. It resolves, lastly, the no less vexing issue of what phenomenal noise involves, which is to say, what the experience of noise comprises or is constituted by; namely, it is made up of experiential artefacts of human defects or flaws. Such a position might also seem appealing because of the natural analogy it conjures, between human experiences of noise and how noise can be encountered scientific processes and particularly via scientific instrumentation. That is, similar to how someone (e.g. a person committed to the strict harmonious lawfulness of the universe) might think that noise in scientific data is the product of imprecise technologies of measure-

¹⁴ Cf. Casati et al (2020) for discussion and evaluation of these positions.

¹⁵ The implication would be that beings with less rigidity or with less habituation would experience less noise; or is the implication that such beings then experience forms of noise other than the one they are interested in ('cognitive overload').

ment, we might think that noise as we experience it is the product of our frail and finite perceptual and cognitive systems.

The relevance of this irrealist ontological stance on noise today should not be underestimated. As one demonstration of this, this stance can be seen to underlie the premise of the "ideal observer" used in current research on auditory and visual performance in humans, which was already paradigmatic in work by Swets and colleagues in the 1960's (1964, 78, 355). The 'ideal observer' is a methodological premise commonly used to analyse data generated through stimuli discrimination tasks assigned to research subjects. To analyse how well their participants perceive and make decisions about their perceptions, it is informative for such researchers to contrast those subjects' decisions – for instance, about degrees of difference in the noisiness of an image or a sound - with "a machine that 'knows' the stimulus exactly, and that has no internal noise" (Levi et al, 2005, 1836). Thereby, one can arrive at a measure of *how much* noise humans seems to be subject to; a measure of human fallibility, qua measure of their noise.

Here as well, there may be an opening for a phenomenological perspective. Against such an irrealist premise, which attributes noise to our (finite) human being, one might wonder whether there are forms of noise that do not simply supervene on our human nature, and which would not simply disappear if our experiences were somehow purified, or brought closer to that of the "ideal observer." Rather, one could think that there are types of noise which we may come to perceive only by overcoming our human perceptual and cognitive limitations. That is, we may now be confronted with some forms of noise, and oblivious to others, and so must overcome ourselves and our limits in order to grasp them. Perhaps phenomenology is not of much use for getting beyond human finitude, but if it sometimes is, it might help to understand what such more demanding, higher order experiences of noise might involve; throwing open our windows and doors, so to speak, to new forms of noise, such as those researched in contemporary neuroscience or contemporary physics.

In view of such depleting ontological controversies, one might be motivated to adopt a rather different deflationary stance on noise; noise is simply whatever is not a signal. But a phenomenology of noise could interfere with this popular view of what noise is, as anti-signal or as *unter*-signal. Such a view does not fit well with some common experiences of noise, or so it seems. If the jackhammer seems like noise, it seems artificial to describe this as a case where some transmission of a signal has been affected or disturbed. The same would go for the noisy fire alarm; if the loudness of the fire alarm functions to ensure the transmission of the signal, we might say that it fulfils its function very well; we 'get' the signal, i.e. 'There's a fire alarm.' But in such a case it seems we are within our rights to say that despite such successful transmission of the signal, the alarm still seems like noise or unbearable noise. These brief reflections might indicate that there are some, perhaps many, experiences of noise which do not fit the 'signal-noise' paradigm.

4. The Evaluative Dimensions of Noise

It may seem an odd thing to make noise and its experience a target of philosophical investigation. Noise is often understood as that which either is disregarded, or is to be disregarded, as a person perceives or makes sense of the world, ascertains truths, or picks out properties of things that most merit attention or appreciation. If we turn our attention to noise, are we not allowing ourselves to get distracted from where our philosophical focus ought better to lie, i.e. in the meaningful, the good, or the real?

These remarks point to the evaluative dimension of experiences of noise, which throws up no few riddles. It is rare (but not unheard of) to frame noise as an evaluatively neutral phenomenon. More common is to designate it either as bad or unwanted (for instance, in terms of developmental psychology, sociology, urban studies) or, less frequently, as good (for instance, in terms of aesthetics and sounds studies). But already the idea of noise as unwanted or undesired can seem quite puzzling, and this is easy to demonstrate in terms of the common notion of noise as 'unwanted sound.' (Gyllenstein et al 2023; Kamerer et al 2019; Bartlett 1934) If noise is taken in this way, one might also like to know whether such wanting or 'unwanting' is ever learned or acquired. That would raise the possibility that one might then learn to want what one perceives as noise (or learn not to not want it); such learning or acclimation might on this hypothesis remove from those sounds their character as noise. And if one does not want a certain sound, can one do so for the wrong reasons? If so, can our experience of noise then be corrected, or is it somehow recalcitrant? Moreover, it is not clear how exclusively such a determination of noise applies; might there be other kinds of unwanted things to which it might apply? Perhaps there can also be noise as unwanted light or darkness, as unwanted textures or unwanted smells?

The clarifying role of noise as that which is unwanted is also up for grabs. By way of example, in a passage from *The Passenger*, Cormac McCarthy describes the aftermath of the atomic bomb that was exploded over Hiroshima:

In that mycoidal phantom blooming in the dawn like an evil lotus and in the melting of solids not heretofore known to do so stood a truth that would silence poetry a thousand years. Like an immense bladder, they would say. Like some sea thing. Wobbling slightly on the near horizon. And then the unspeakable noise. (2022, 116)

If, per McCarthy, the noise of the bomb was terrible, "unspeakable," is the explanation for this the fact of the loudness of the sound of the bomb above the city? Or could there have been some other reason for its being a kind of noise? Was the noise terrible because the bomb or its sound was unwanted? But then, which bombs and sounds of bombs are? The 'unwanted sound' of the bomb may not get us very far in terms of understanding its terrible noise, such as we might. One might instead think that the noise of the bomb was "unspeakable" and thus unwanted because of its terrible noise. An analogous issue here is the way that some kinds of noise seem painful, such as very loud fire alarms or roofers smashing roof tiles into their tip. Perhaps the fact that those forms of noise are painful suffices to account for why the noise in those cases seem bad (Roberts, 2021). Yet one might still question the relation between experiences of pain and experiences of noise, and whether painfulness is the most basic explanation one can give for the badness of noise. One might appeal to how not all noise that is bad needs to be painful in order to seem bad, at least not without significantly stipulating the nature of the painful as such. Moreover, one might still wonder how to conceive of the proper order of explanation between the painful and the negative evaluative character of (some) noise; perhaps pain is a response to (the badness of) noise, rather than making some noise seem bad.

Questions about the evaluative seeming of noise can branch out in other ways when if one takes into consideration two ways in which noise experiences appear to be subjectively relative. Within the first kind of relativity, one's experiences of noise can in the sense that some kinds of noise seem good, and others seem bad, and some may be experienced neutrally, as neither good nor bad. This is intra-subjective variance; for an experiencing individual or a collective thereof (for instance, sharing some environment, cultural background, or habituated practices) there is the question how the set of experiences of noise seems to include the good, the bad and the neutral. What may be perplexing about this is that one and the same set of stimuli may seem like bad

noise at one moment, and something good, if not 'good' noise, at another. ¹⁶ If we say that one has to be in the right mood to listen to Merzbow or Thelonius Monk, we acknowledge the subjective relativity of our evaluating something as noise (due our not having the 'right' mood), yet perhaps without really understanding it. Yet what is it that changes - either in us or in our interaction with the environment - so as to make Monk's playing seem intolerable or sublime?

A second kind of variance is one that can be observed across individuals; what one person can find good about some noise, another finds it bad, and it can leave a third neutral. This is intersubjective variance - variance between individuals and their communities. One issue here is whether this evaluative range is in some way grounded in or afforded by some properties of noise, or whether there are only ever extraneous reasons for why noise can seem either good or bad. At first sight, the latter view makes sense, in that the evaluative character of noise can seem to depend upon some perceptual, cognitive, or aesthetic goals orienting one's experience. That is, noise seems 'bad' insofar as it is an obstacle to a certain intentional aim of an individual, or due to its hindering a behavioural function or tendency in some individuals or some community.

It seems difficult to claim that noise could have an intrinsic evaluative character, for then it would be hard to understand how it could range from seeming good to seeming bad. Nonetheless, it may be worth considering whether some forms of noise push for their evaluation as good or bad; their evaluative character as noise does not seem to depend on who or what one is, or what one is oriented towards in one's life with others. Certain things can be experienced as bad - the invasive noise of jackhammers, the insidious noise of bustling, garishly decorated airports - where their badness seems directly connected to their noisiness. The negative evaluative character of those forms of noise can seem objectively grounded, and may not simply be a function of harbouring some subjective aim or preference orienting one's experience. It is not just that such aims or preferences would be hard to specify; rather, there is arguably something about the noise of the jackhammer or the airport that seems negatively evaluable as noise irrespective of one's having them or not.¹⁷

A similar question might be advanced in terms of certain forms of noise that have an appreciable or positive evaluative character. Standing on sea cliffs during a gale, the noise one encounters - visual and tactile no less than aural - has something sublime about it. Yet if such noise seems breath-taking, is that only to be explained with reference to a breakdown or obstacle to one's own subjective ends or functions – for example, it is breath-taking noise because one cannot comprehend the scene with which one is presented? This question also seems available with regard to aesthetic works incorporating noise, for instance, in certain performances of noise music, in certain forms of installation art, or in certain forms of film. In such works, something beautiful or incredible can be encountered, which is precisely due to their embodying or manifesting noise; one shouldn't suppose that in such works the artists simply seek to disturb to or disrupt the ends of one's perception (although that is also a way in which art may be understood to incorporate an experience of noise). Thus there is a question here; if the reasons for why noise

¹⁶ One example of this would be in jazz improvisation, in which the artists suddenly incorporate 'bad' noise into their music. A musician may hear the ringtone of an audience member's phone ('bad noise'), and quickly emulate it, thereby inciting the other artists' performance and taking the harmony and melody in new directions. Something similar could be said about how a classical melody may suddenly appear in the midst of one of Merzbow's performances.

¹⁷ That is, not unless one ambitiously posits some persistent, global intention on the part of the experiencing individual ('to live in peace,' 'to experience the world harmoniously,' to 'coordinate with one's environment').

¹⁸ In other words, a question arises here concerning the manner in which the aesthetic object incorporates some or other form of noise within its composition or structure.

may seem good or bad may be manifold, which if any of these have to with what noise is, or how it comes about, such that it is experienced evaluatively in one way or another?

6. The Ethics of Noise

Humans can make noise in a multitude of ways. Some of these are familiar enough; not only on the massive scales of human industry and travel, political protest and cultural celebration, our wars and our waste, but also in the mundane ways we garble and mangle our communications with others, or putter about on the streets or at home, or even, per Bailey, the ways we dress and groom ourselves. (1996) Where questions about such 'anthropogenic' noise have been raised in recent research, the focus has tended to lie with either auditory or communicative forms of noise. Yet we are living at a time when our capabilities for making noise for each other is ever growing, and so the notion may be beginning to be dawn that there are other kinds of noise that humans make that need to be understood better. That is, it is no longer only via 'analogue' means that humans may generate noise for each other. Ours is an age characterised by a massive proliferation of 'digital noise,' on top of already existing unprecedented levels of 'worldly' (industrial, transit, touristic, communal) noise (Schwarz 2011; Nechvatal 2011; Krapp 2011). These might be, for instance, ways of making noise in our digital lives within today's digital worlds, i.e. via interactive and social technologies; what we do with and in such forms of technology may also be quite 'noisy.'

The fact of the proliferation of human noise in our contemporary world raises a slew of ethical concerns. What are our responsibilities towards others in light of our generating noise for them? Should one have a right to a noiseless existence? Should others not have to be exposed to our noise? Is making noise instead some kind of social good or inviolable right? Is noise a part of the good life with others? These concerns no less apply to our digital lives; there as well, should one aspire to construct a space without noise, where it and its ilk – disruption and error, glitch and chaos – would be banished once and for all? The thought here might be that the persistent diminishment of noise would be for the betterment of the 'system' and the experiences of individuals within it. On what grounds, if at all, should one wish for a human experience within a noiseless world?

These concerns might be usefully developed within a phenomenological framework if one could account for the underlying experiential conditions of *making noise for others* and likewise those underlying our *exposure to others' noise*. In terms of the latter, it would be a worthwhile project to understand our exposure to the noise of others, and the conditions and habitualities according to which we come to acclimate ourselves to or embrace such noise, or by which we come to resist or reject it – as being too much or too little, as being a nuisance or a reassuring fact. How is it that we come to accept the noise of others, or to harden ourselves in the face of it, and are we consistent or rational or understanding in how we do so?

In terms of making noise for others, it may be difficult to ascertain the extent to which one can experience one's own making noise, i.e. of the manners in which a person, or their community and practices, contributes to the noise of the world. This may require a special kind of self-awareness ('to be self-aware of one's noise-making'), one which is perhaps not just bodily, and which is also distinct from more formal or abstract kinds of self-awareness. Discovering one's own noisiness and one's impositions of noise on others seems like a good reason for learning to manage one's own noise, even if this is a discovery to which not everyone is privy. The phenomenological question that emerges here then concerns the conditions under which such a discovery might come about – what does it take for one to come to a recognition that one 'is noise' for

another. Why does the neighbour think we are 'raising hell,' that our abode is a 'burdèllu' for them? As Fanon would encourage us to think, such a recognition might come about due to realisation of the prejudiced ideological framework in which one is encountered, as when (European) "classical musicologists" took that which was other to their music to be 'noise.' (Fanon 1964, 36-37; Chion 2016, 64) On the other hand, perhaps such a recognition of one's own noise can only come about when one surrenders one's own preoccupations and projects, because we cannot hear the noise we make from within a life swept up with its own 'sensus privatus.' Perhaps, then, only by escaping one's own obsessive 'instrumental rationality,' might one come a recognisance of the relentlessness of striving for one's own ends, and then of the senseless noise ('Why this? Why here? Why now?') that one engenders for others in such single-minded pursuits.

Lastly, the question of one's awareness of making noise for others may be taken in the direction of communicative ethics. One might wonder whether there is ever an' ethical responsibility to communicate without noise, where this last ought not to be conflated with an ethics of communicating truthfully. In the latter, faithfulness to the 'true' would be definitional for what is 'good' about one's communications. In the former, what is 'good' or 'ethical' about one's communications would have to be understood in other terms; for instance, consistency and clarity, relevance and coherence. These are overlapping but distinct concerns; my communication may be faithful to the truth but still seem quite noisy or incomprehensible. That is, they are two communicative ethical concerns which needn't get in the way of each other, but which sometimes might, because they have different conditions of fulfilment. It may then be that in some situations the one ethical concern, at a minimum, has to be weighed against the other, i.e. one might to have to pay attention as much to the noisiness of one's communicating as to its truthfulness. One example of this would be ethical situations in which a warning would be necessary, where focusing only on communicating the true can incur a risk of noise. On the other hand, one might also wonder whether the one kind of concern can or has come to dominate the other in our ethical sensibilities; where an overriding concern for communication without noise is taken by default to override concern for truthful communication, for example for fear of the latter's confusing or subversive effects.

6. Volume Synopsis

The contributions in this volume, representing a range of philosophical perspectives, relate to some of the questions about the experience of noise highlighted thus far, while also raising and exploring still others. They are grouped in three thematic sections, ranged according to the types of experience of noise on which they focus.

The first set are exclusively concerned with issues concerning auditory experience and acoustic noise. In Chapter 1, Di Bona considers noise as something that can be defined objectively, i.e., as related to the physical qualities of sound, and as subjective, i.e., in terms of sounds that can triggering unpleasant perceptions. In terms of the former, she draws on Helmholtz's analysis of sounds, and demonstrates how such 'objective noise' may be integral to the continuity of auditory experience, as when one makes sense of others. On the other hand, she accounts for the subjective quality of noise in functional terms; 'unwanted sound' is that which stands in the way of community practices and individual ends. It is argued that these notions of objective and subjective noise both capture important aspects of the experience of noise, although their analysis may belong to different disciplines (one concerned with how things are, the other with how we perceive them), making their relation unclear.

In Chapter 2, Seron discusses the hotly debated issue of the difference between noise and musical sounds. Taking a historical perspective, he first gives a detailed account of Helmholtz's distinction between tones and noise, and then examines the challenges to that theory raised in particular by Wilhelm Wundt. Central to the debate between the two is the key issue, still relevant in debates today, whether a theory of sound and noise ought to be answerable to 'phenomenological arguments,' i.e. to what one takes to be the content of one's auditory perception. In Seron's terms, this is the question whether the difference between noise and musical sound is a primitive psychological feature or not.

In Chapter 3, Taieb delves into the work of early phenomenologists, particularly Conrad-Martius and Schapp, to shed light on their view that sounds and noises offer via auditory experience insight into the material constitution of physical entities and reality as a whole. He argues that this provocative thesis is noteworthy because, contrary to widespread positions in philosophy and natural sciences, it holds sensory experience to be in qualitative continuity with what science shows about the world. In this perspective, what "tones" and "noises" present in auditory experience depends not on mental associations, but rather on immediate acquaintance with differences in the material composition of objects and with arrangements between their parts.

In a related vein, Mattens in Chapter 4 stresses the importance of our ability to hear sounds and how that capacity, in conjunction to our ability to reproduce sound, contributes to our knowing of worldly events, rather than objects. In developing this idea through examples and thought experiments, his perspective moves beyond the common tendency, shared by many philosophers, to consider noise from the point of view of the correlation between sounds and the properties of material objects. Mattens take this stance on sounds and noise as a launching point for enquiring about the affective implications of sounds and noises. Noise is taken as something that we feel, for example by "sensing" the mechanical processes (e.g., friction, impact) involved in the reproduction of sounds, and from there he points to the relation and differences between noise, pain and natural sounds - noises can be painful because of the intimate knowledge our bodies provide of the sounds we hear, suffusing or overwhelming our senses.

The next group of papers looks beyond auditory noise, in considering other types of perceptual experience that may involve noise and the issues that they raise. In Chapter 5, Vassilicos discusses some reasons for thinking that noise may not simply be auditory, and sets out some benchmarks for a philosophical picture of such experiences. He then extracts from discussions in contemporary philosophy of perception some views on the nature of perceptual noise, and weighs them against each other. He suggests that underlying such views on perceptual noise is the idea that there is something like a disunity of experience, which can come about in many ways and which is a good candidate for understanding the many guises of noise.

In Chapter 6, Laasik provides a phenomenological study of visual noise that develops against the backdrop of a Husserlian account of visual experience. On that basis, he presents and defends two definitions of visual noise. The first is based on the Husserlian notions of fulfilment and disappointment, while the second is developed from a notion of "place" and "noisy environs." Laasik deploys these two notions in order to gain a foothold on the conceptual openness of noise and to offer a phenomenological account that accommodates recurrent registers in the usage of the term.

In Chapter 7, McGann offers a study of noise that draws on work in enactive and ecological approaches to perception and action, and on the phenomenological conception of the perceptual relation between the figure and the ground in what is perceived. He suggests that rather than conceiving of noise solely in terms of disturbance or hindrance, noise is better understood as

that "inexhaustible texture" of the world in which embodied action must ever find its orientation. Noise within this melding of central enactive and ecological notions is then a "messiness" and an "excess" encountered at different scales of experience, overwhelming us but also inviting open perception and adaptive agency.

In Chapter 8, Pellizzer provides a phenomenological clarification of the idea of noise as "useless information." He does so by building on Heidegger's view of handiness and relevance, in order to investigate the ways noise, understood as perceptions that are broken and therefore useless, disrupts action and tool use, affecting the affordances of places and things, while also emphasising the formative role of action and tools in (re)shaping the boundaries between noise and useful information.

The third cluster of papers considers the experience of noise from a broader perspective still, as it might be undergone in a range of human endeavours: not only in everyday intersubjective relations and in communicative and aesthetic practices, but also in scientific, technological, and even philosophical enterprises. Knudsen contributes to communicative perspectives on noise in Chapter 9 by working out the idea of "dialogical noise," as an experience of unintelligibility of language and communication (generally described as "gibberish"). In the process, he elaborates a model of communication inspired by Heidegger's notion of discourse, locating different forms of gibberish in the disruption in the constitutive elements of discourse (e.g., in terms expressive affordances, and affective and practical couplings between humans and between humans and the environment).

In Chapter 10, Breeur takes a distinctive stance on noise, which at its core is a reflection on the significance of the noise humans have arrived at being to make in our current age. Drawing inspiration from the metaphysical notion of *creatio continua* in Descartes and Spinoza's critique of anthropocentrism, among other sources, Breeur elaborates a "metaphysical fable" where noise is understood as a human product disrupting God's immanence, in order to get a grasp of our contemporary crises and how they are defined by the emergence of noise within them. His hypothesis is that the apotheosis of anthropogenic noise in the 20th and 21st century can be found in the radical figure of the atomic bomb (as "the noise of all noises"), which is the unmediated legacy of the rational quest for knowledge and mastery of the world around us; for Breeur, it is the symbol of the annihilative forces that that project has always carried within it.

In Chapter 11, Torre first provides an analysis of different roles of noise in contemporary technological practices, such as recording and encryption, showing that noise is sometimes a boon, and sometimes a nuisance. He then argues that the aim to minimise noise as much as possible as evident in how we engineer our devices today - is not without significant risks, especially when it is carelessly taken to apply not just to technologies but also to their users. A life without noise, he argues, can have deleterious, and in some respects devastating, consequences for the lifeworld of both individuals and the groups they live within. This is particularly so, claims Torre, in the case of those whose existence unfolds within so-called digital societies.

In an expansive account in Chapter 12, DeWarren eruditely exposes the ways in which any concept of noise is never complete or final. In a voyage that guides the reader through the legion manifestations of noise - e.g. in music from across the ages, in epics and mythology, in semiotics and sociology - De Warren "stills" us so that we may pick up on the noise emerging and receding deeply within diverse registers of human experience. In so doing, he embraces the plurality of noise as its key feature, and urges us never to settle on, and thus to resist, the possibility of a noiseless concept of noise.

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