

This is a section of [doi:10.7551/mitpress/14186.001.0001](https://doi.org/10.7551/mitpress/14186.001.0001)

The Science-Music Borderlands

Reckoning with the Past and Imagining the Future

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Citation:

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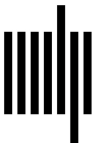
Edited by: Elizabeth H. Margulis, Psyche Loui, Deirdre Loughridge

DOI: 10.7551/mitpress/14186.001.0001

ISBN (electronic): 9780262373043

Publisher: The MIT Press

Published: 2023



The MIT Press

4 Humane Treatment, Sound Experiments

Rachel Mundy

Introduction

In the science-music borderlands, the music of animals brings with it profound questions about the sentience of other species that cross disciplinary boundaries. In this chapter, I explore the implications of “humane” laboratory ethics for questions related to animal musicality. I frame these questions in a broad historical context and ask how thinking carefully about ethics in the science-music borderlands can help researchers engage with multispecies contexts that cannot be accounted for by emphasizing human uniqueness.

In traditional science, animals’ rights are approached through an ethic known as “humane treatment.” Humane treatment in scientific research is governed in the United States by the Animal Welfare Act (AWA), which first became law in 1966 and subsequently led to the standardization of oversight committees in the 1980s. Although the AWA and related legal guidelines use *humane* intervention or assessment as the central tenet of research ethics, they do not define the term. Instead, many guidelines offer specific examples or cases. For example, the US Department of Agriculture’s (2020) *Blue Book* on animal welfare, which reproduces the AWA and related legislation, uses *humane* treatment as the standard of care without defining the term, relying instead on detailed explanations of standards for housing, experimental design, and so forth. This approach is reflected in institutional applications of the legal guidelines, such as the University of California–Los Angeles’s website on laboratory oversight, which instructs researchers to assess whether humane intervention is needed based on the quality of housing, the need for veterinary treatment, or the need for euthanasia.¹

The word itself is compelling, for it suggests the very boundaries that so many of this book’s contributors question. It has historical roots in notions of a *humanizing* education—what we call *the humanities* today—which was once thought to be the

anchor of both rational science and aesthetics.² The word was adopted in the American literature on experimental oversight in the mid-twentieth century, against the backdrop of social movements and changing discourses concerned with human rights.

As veterinarian Richard Haynes (2008) notes, there are two schools of thought about animal laboratory ethics: the welfare school and the liberation school. The welfare school accepts the premise that nonhuman animals can be used as human resources but seeks to minimize their suffering. The liberation school does not accept the use of animals as human resources. The language of humane treatment is primarily (but not exclusively) used by proponents of the animal welfare approach. In the context of this chapter, I engage primarily with the traditions and practices of the welfare tradition.

By drawing attention to the tension between humane ethics and the boundary-crossing methods in studies of animal musicality, I'm also highlighting a more fundamental problem that lurks in the humane ethics we aspire to. Intellectuals have been writing about a crisis in the humanities since the early 1900s, expressing surprisingly consistent worries about the professional viability of a college education in fields such as literature, philosophy, music, and art (Jay, 2014, p. 8). More recently, writer Amitav Ghosh (2016) questioned whether there is a crisis in the sciences as well, noting that decades of compelling research on climate change have not meaningfully affected public policy. Both diagnoses suggest a crisis of faith—faith in the ability of the arts and sciences to prepare us for the present and future. Are the rudiments of modern science and humanism aligned with the realities of the twenty-first century? Sometimes they are, but the answer must be no, not yet, when we ask whether institutionalized conceptions of the humane can answer the ethical dilemmas of a world whose problems transcend biological boundaries.

Humane Treatment and Its Origins

Although today the idea of humane treatment applies primarily to animals, the notion was popularized by nineteenth-century aid societies and newsletters in the United States and Great Britain. Humane societies of the nineteenth century championed the protection of domestic animals and addressed the living conditions, medical needs, and education of poor communities of color, prisoners, and the mentally ill.

Being humane in this context meant displaying a kindness and compassion that were unique to human beings but not “natural” to humans. Instead, humane behavior came from one's religious or secular education. As nineteenth-century British theologian Nathaniel Dimrock explained in a sermon titled “On Humanizing Humanity”:

Even the very existence of such a verb as *to humanize* (in its ordinary sense) bears witness—that men regard man in the condition with least affinity to the lower animals in creation, as the most truly human. And if this be right, then this necessary conclusion follows, that man's condition is natural just in proportion as it is least human, and that man's nature is human just in proportion as it is least natural. (1885, p. 16)

Nineteenth-century dictionaries defined the words *humanize* and *humane* with reference to the civilizing or softening effects of cultural and religious education, further emphasizing the connection between culture and human identity (see, e.g., Stormonth et al., 1895; Webster, 1895). As historian Janet Davis (2016) has pointed out, the pursuit of the humane was primarily the work of the educated middle and upper classes, particularly white women in British and American society. To be humane was to possess a kindness that distinguished human beings from nature; but only some human beings had the resources to achieve this ethical standing.

By the twentieth century, the language of the humane was increasingly being associated with the subject of animal welfare through the emergence of public debates about animal vivisection. According to Davis, in the 1910s and 1920s, the language of humane treatment represented an essentially conservative social ethic that was first associated with the antivivisection movement and later appropriated by those in favor of medical vivisection (2016, pp. 80–83). Both opponents and advocates of animal vivisection argued that humane behavior was at stake, whether that meant protecting animals from experimentation or defining standards of treatment when they were used as scientific research subjects.

By 1966, when the Animal Welfare Act was passed, the language of humane treatment was applied far less frequently to human beings, with the exception of prisoners of war.³ This may be due in part to another important backdrop of the period: the American civil rights movement. The year the Animal Welfare Act became law, the Black Panthers were founded; three years prior, Americans had seen Martin Luther King's March on Washington, and throughout the 1960s Congress passed a series of acts to reform Americans' access to voting rights, education, and other opportunities. Although I do not address this context in depth here, it is worth noting that although humane ethics and its implications of civilized stewardship were central to animal rights legislation of the 1960s, the language of humane behavior was rarely used in civil rights activism and legislation. Instead, civil rights literature expressed the ethical treatment of human beings through language such as *person*, *human being*, or *citizen*.⁴ Implicit in this distance from humane treatment was the suggestion of action between equals, an approach that was significantly less common in the language of animal protection.

Musical Animals

Just as the humane treatment of animals has important precedents in nineteenth-century notions of the human, the scientific study of animal musicality has similar roots in claims to human identity. I explore the latter history in greater detail in my book *Animal Musicalities* (Mundy, 2018) but briefly summarize some of that history here. Around the same time that humane societies were being established in Britain and the United States, a surge of interest in the animal origins of musical ability was inspired by widely read debates about Darwin's theories of aesthetics. Music was believed to be a contested ability, one that might—or might not—be unique to human beings. Understanding whether animals could make music was a way to clarify what it meant to be human.

Between 1880 and 1950, hundreds of collections of folk songs, bird songs, insect songs, and national and indigenous music were published under the broad rubric of this evolutionary quest as part of an attempt to document and compare music's diversity across a spectrum of national, racial, and species differences. Like contemporary notions of humanizing education, to many intellectuals, being human in this context meant being *fully* human. While Bach, Beethoven, and Brahms were unequivocally heard as human in this tradition, other sounds, such as jazz, folk songs, and indigenous drumming, were compared to the primitive songs of birds and other animals. Some special birds, like the hermit thrush and nightingale, were even praised for having songs that were comparable to European classical music (see Doolittle, 2020; Rothenberg, 2019). Attempts to document animal music included a translation of a seventeenth-century essay on the music of bees (Hayes, 1925), a letter to the *Musical Times* arguing that the blackbird sang "old-time melodies" (Andrews, 1930), and a book-length treatise on the evolution of British bird music (Witchell, 1896).

In the aftermath of World War II, such comparisons between species and cultures were rejected as tools of racial stereotyping (see Mundy, 2014). Music scholars were particularly shocked to discover that German culture, which they had considered the most evolved musical culture in the world (epitomized by Bach and Beethoven), had fostered genocide (Mundy, 2014, p. 750). Suddenly, comparisons that had once seemed neutral were full of loaded metaphors. For example, a study of song sparrow phrases by ornithologist Aretas Saunders (1951) meticulously notated and analyzed 174 sparrows' songs to construct a typology of the species' song style. Although the project set an unusually high standard for research, it also implied comparisons with human cultural development, delineating primitive song types that raised echoes of older comparisons between the imagined sounds of human prehistory and the present-day songs of animals.

The response that emerged in the 1950s to these kinds of comparisons was twofold. Biologists rejected the old science of eugenics in favor of its cousin, genetics, arguing that genetic data would protect the sciences against racial stereotyping (see the introduction to Mayr & Provine, 1998; also see Cowan, chapter 16 of this volume, on these issues in the history of music psychology). Music scholars, in turn, tried to study music through its structures and forms—that is, “the music itself” divorced from social, historical, and racial claims (Mundy, 2014, pp. 749–758).

One unintended result of this shift was a division of labor between human and animal knowledge filtered through the humanities and the sciences. While postwar humanities scholars treated music as an exclusively human area of cultural study—a humanity—scientists focused on animal voices in the laboratory and the field as a source of bodily information about language acquisition. Studies of birdsong in particular adopted a language of objectivity, turning from music to language and emphasizing laboratory practices over field research (see Radick, 2007).⁵

A final element of this history is the unique status of visual evidence in scientific research. In contrast to sound, visual images had a long and trusted history of serving objective quantification within the sciences (Bull, 2018). Furthermore, images were printable—whether one did research in the 1920s or the 1980s, sounds couldn’t be published in a research journal, but pictures could be (on visual vs. acoustic evidence in the history of music science, see Deutsch, chapter 14 of this volume).

One of the more curious side effects of this emphasis on images was an interlocking history that connected early psychoacoustic research and sound recording technology to the same debates about vivisection that had had such an impact on the language of humane treatment in animal welfare circles. As I have shown elsewhere, the technology behind early phonographs, which consisted of a rotating cylinder attached to a playback armature, derived from the cylinder-and-armature devices used to record visual images of animal vivisections in the mid-1800s. In the 1920s, several prominent music scholars and critics, some of whom were familiar with the phonograph’s counterpart in vivisection, appropriated the language of vivisection as well as its technology, urging their peers to objectively study music as it “died” under the knife (see Mundy, 2018, ch. 4). Because these musical vivisections were framed by the period’s evolutionary outlook, the songs “killed” in this type of research were those of non-Western, colonial, or otherwise othered subjects.

As a result of these intertwined histories, studying animal musicality after 1950 meant navigating a path between science and humanism, and there were many elements at stake. Central to that pathway was the distinction between human and animal subjects, particularly in the case of domesticated animals such as mice, rats, canaries,

and other species with long-standing use in laboratory research. Highly refined methods of visual analysis, in addition to the nonhuman status of animals and the histories that made some species more likely research subjects than others, set the stage for a version of science that was deliberately distanced from the practice that we call humanism, yet one that was reliant on the outcome that American and British intellectuals had once believed would come only from studying the humanities: a humane ethic. As scientists and humanists today attempt to reengage with each other, they face this dual history, particularly in the context of animal-based research.

Animal Welfare

If today's humane ethic is connected to this complex history of racial science and its aftershocks, what does it mean to be an animal in this context—especially an animal worthy of care? The 2020 version of the Animal Welfare Act defines animal as follows:

The term “animal” means any live or dead dog, cat, nonhuman primate, guinea pig, hamster, rabbit, or such other warm-blooded animal, as the Secretary may determine is being used, or is intended for use, for research, teaching, testing, experimentation, or exhibition purposes, or as a pet; but such term excludes (1) birds, rats of the genus *Rattus*, and mice of the genus *Mus*, bred for use in research; (2) horses not used for research purposes; and (3) other farm animals such as but not limited to livestock or poultry, used or intended for use as food or fiber, or livestock or poultry used or intended for use in improving animal nutrition, breeding, management, or production efficiency, or for improving the quality of food or fiber. With respect to a dog, the term means all dogs including those used for hunting, security, or breeding purposes.

Here, animals are defined as animals—as nonhuman beings worthy of a standard of care—according to conditions that might seem quite bizarre at first. They must be warm-blooded; they cannot be birds, mice, or rats; and they cannot be any kind of animal that is made into food or clothing. Dogs, in this odd rubric, are always animals, even though other creatures are not.

Domesticated breeds exist at the margins of the “animal” as it is defined by the AWA, occupying a space that is neither nature nor nurture. They represent what Philip Howell and Olga Petri (2020) call the “unnatural” history of animal culture, a hybrid world in which modern human technologies and colonial history intersect with animal agency. There are layers within these layers—for what makes an animal domesticated? How do we ascertain the history of a domesticated species? What does domestication signify in experimental contexts, where familiar residents of the laboratory such as the canary, zebra finch, and macaque are so often the result of forced migration by colonial powers? (Mundy, 2022).

The AWA's mention of "livestock or poultry" and "food or fiber" reveals the underlying conflict between human benefit and animal welfare that underpins these bizarre classifications and omissions. The purpose of the act is not to define animals' rights but to define exceptional cases in which animals are entitled to a particular standard of care. As the word *humane* suggests, human beings are not animals in this assessment; they are in a separate and unique category. And their rights are sometimes in conflict with notions of animal welfare.

Within these limitations, the concept of humane treatment in the United States is applied primarily through committee oversight. The process was formalized in a 1987 amendment to the AWA that established the role, duties, and constitution of Institutional Animal Care and Use Committees (IACUCs), which are still the primary method of review for the care of research animals. Each institution or university has its own IACUC, appointed by the head of the institution. Each committee must have at least three members; at least one member must be a veterinarian, and at least one member must be from outside the institution. The IACUC reviews proposals for research involving animal care and inspects research facilities every six months. Just as researchers studying human subjects have to submit proposals to an institutional review board for approval, researchers studying animals have to submit paperwork to their institution's IACUC.

Although the paperwork and the review process differ slightly from one institution to another, the guidelines are standardized by the Animal Welfare Act, and the questions are similar. Here is an example from the University of Southern Maine's IACUC:

List and describe the animals to be studied. Indicate the anticipated number of animals to be used in each Pain Category of Research and the total number of animals involved during the three-year approval period of this protocol. Indicate whether Pain Category B: Breeding or Holding Colony Protocols. Pain Category C: No more than momentary or slight pain or distress and no use of pain-relieving drugs, or no pain or distress. For example: euthanized for tissues; just observed under normal conditions; positive reward projects; routine procedures; injections; and blood sampling. Pain Category D: Pain or distress appropriately relieved with anesthetics, analgesics, and/or tranquilizer drugs or other methods for relieving pain or distress. Pain Category E: Pain or distress or potential pain or distress that is not relieved with anesthetics, analgesics and/or tranquilizer drugs or other methods for relieving pain or distress.⁶

Readers unfamiliar with this system, myself included, might recoil from a standard that treats "euthanized for tissues" and "positive reward projects" as comparable. Yet many scientists confronted with such reactions respond, correctly, that the IACUC process provides a higher standard of care than that used for "food and fiber" contexts. Those who use animals in the laboratory are part of a complex, detailed, and ongoing conversation about what it means to pursue the ethical treatment of animals.

Ethics

At the center of the IACUC's review process is the belief in an intrinsic difference between the human and the animal. That belief is at the core of standards of humane treatment, the concept of animal welfare, and many of the questions we ask about music as well. "Is our musical predisposition unique, like our linguistic ability?" asks Henkjan Honing (2019, p. xi), echoing Darwin. How, wonders Steven Brown (2022), did human beings come to dance in a way that is unique from other animals? What can singing seals tell us about early hominids, asks a team of European scientists? (Ravignani et al., 2016). These questions are not just about the musical traits of a particular species; they are about how animals might reveal something about being human.

Animals, in this system, are not "humans and *other* animals" but rather a catchall category against which human uniqueness can be compared.⁷ This catchall category is such a foundational concept in Western culture that it is difficult to summarize, trace, reduce to a few sentences, or even question. To acknowledge it as a concept cracks open a hundred passageways leading to places unknown. Once "the animal" is questioned, it raises questions about the uniqueness of "the human" and about whether the human as we know it can even exist if it does not cast a shadow that covers every other species in the cloak of the animal.

Although the human-animal binary is not a topic that has been widely explored in the sciences, it has been considered in depth in two closely related niche fields in the humanities: animal studies and posthumanism. Founded in the 1980s and 1990s, both fields emerged from a series of questions about the legal status of animals and machines and the viability of the category of the human. Foundational works drew heavily on American feminism and explored colonial, racial, and gendered biases in natural science (Haraway, 1989; Bal, 1992), the legal and philosophical status of animals (Singer, 1975; Callicott, 1980), and definitions of the human in the computer age (Haraway, 1985; Hayles, 1999). Later texts in the late 1990s and early 2000s drew inspiration from continental philosophy (Latour, 1991; Derrida, 2002; Wolfe, 2003). More recently, a backlash against this later movement has reoriented the field closer to its origins in feminism and black studies (Weheliye, 2014; Boisseron, 2018; Jackson, 2020; Fraiman, 2012; Probyn-Rapsey et al., 2019).

In the last several years, scholars in animal studies have engaged questions of the human largely through the context of interlocking cases of race and animal rights, such as divergent perceptions of pit bulls adopted by white and black owners or differing representations of animality in African and European art (Dayan, 2018; Boisseron, 2018; Jackson, 2020). This movement, which draws on methods in black studies, history, and

art criticism, has argued that the human-animal binary is not just about labeling some sounds—and some singers—as more human than others. It is about a network of ideas in which categories such as species, race, gender, nation, and other forms of difference are mutually necessary to define one another within Western culture. According to Sylvia Wynter (2003) and Zakkiyah Iman Jackson (2020), categories such as race, gender, and animal are interdependent within the social and historical contexts in which both science and humanism operate. In those contexts of taken-for-granted assumptions and implied beliefs, categories of difference such as race, gender, and species tell us who, exactly, is fully human in the modern world.

Drawing on these perspectives developed in animal studies and posthumanism, let me suggest some of the elements that make up the ethic of humane treatment:

1. The animal in this context is a category premised on the exclusion of human beings.
2. The human in this context is a category informed by particular exclusionary traditions of western Europe and the United States, even if actors using this terminology are not citizens of those regions.
3. Historically, those exclusions include both the animal and humans beings who were deemed “natural,” uneducated, or uncivilized in nineteenth- and early-twentieth-century scientific circles.
4. If one accepts 1, 2, and 3 even in part, it is necessary to reconsider what is at stake in studies of animal musicality, human musicality, and the humane ethics that guides them.

If this account is even partially correct, the postwar division of music into human culture, on the side of the humanities, and animal bodies, on the side of the sciences, obscures a daunting debris of unexamined beliefs about race, gender, nationality, sexuality, species, and other forms of difference. These issues have substantial implications for the way we ask questions about music and what we hope to gain from the answers, particularly in collaborative experimental contexts.

Questions

At the broadest scale, the human-animal binary at the center of humane ethics is also at the center of the humanities and the humanities-science divide. Rethinking that binary is not a simple thing. As I and other scholars have shown, the human is defined by, and defining for, notions of race, gender, nationality, sexuality, species, and other otherness; rethinking the human means rethinking all these categories and how we use difference to compare and evaluate life and selfhood. This creates a domino effect, where one change leads to another and yet another. Rethinking the human is not something that

will be worked out in this chapter or even in this book. It is the work of a generation and a movement.

With that in mind, what are some of the implications for studies of musical capacity? Several contributors to this book touch on some of the stakes in play. To name just a few: Duengen, Sarfati, and Ravginini examine the limitations of using nonhuman animals to make anthropocentric claims. Patel argues that the value of music in human life is not contingent on evolutionary claims of uniqueness. Ilari and Habibi show that the musician-nonmusician paradigm carries colonial and Western baggage that implicates the broader category of the human. Such approaches point the way to new ways and reasons to measure and assess the thing we call musicality.

An issue that arises in studies of animal musicality is the goal of translation. In research contexts involving nonhuman animals, translation is the idea that discoveries and experimental results for one species will be applicable to another species. The concept is often used in medical research, where scientists use biological similitude to hypothesize whether the effects of a chemical or medical intervention on a specific animal (such as a dog or a mouse) will result in similar effects on human subjects. This, too, is part of a humane ethic codified in the 1947 Nuremberg Code, when medical experts involved in the Nuremberg trials drafted ten principles meant to set ethical boundaries for research on human subjects. Among other things, the code required voluntary consent from human subjects and a reasonable expectation that the research would not harm them; it also required that medical experiments on human beings be based on the results of animal experimentation.⁸

In studies of music, the concept of translation is used to hypothesize behavioral rather than biological similitude. For example, in classic studies of song learning in chaffinches by W. H. Thorpe, one of the most valued outcomes was the parallel between how baby finches learn to sing and how human infants learn language (Soha & Peters, 2015). These translations can lead to some very unlikely connections, such as comparisons of macaques, finches, and seals; a more informal connection has been made between human musical expressions and birds, a mismatch between one species and an entire class of them (see, e.g., Honing, 2019). Furthermore, such species translations often rely on loose notions of musicality that are themselves deeply steeped in historical associations and measurements that originate with Western culture (see chapter 17). Those historical measures and associations valorize an “evolved” human musical ability as it was defined by scientists in the colonial and racialized atmosphere of nineteenth-century Europe (see Mundy, 2014, 2018; Zon, 2014).

In this environment, researchers may feel external pressure to pursue funding opportunities framed by human achievement or human development, language grounded

in an anthropocentric ethos that rewards comparisons between chaffinches and human beings but deters comparisons of song learning in the common chaffinch (*Fringilla coelebs*) and its cousin the Madeiran chaffinch (*Fringilla coelebs maderensis*). There are, as Margaret Landi, Jeffrey Everitt, and B. Berridge (2021) recently pointed out, no standard guidelines for determining which cases translate between species and which do not.

Rethinking concepts like translation outside of a human-animal binary opens up new possibilities for thinking about how scientists and scholars can collaborate and obtain financial support. Why do we study music? If we set aside the idea of studying music to find out what makes us human (who are we? what do we mean by this?), what kinds of things would we like to know? What will be useful, interesting, and powerful to hear in the twenty-first century and its contexts? If the canary's song and body are not resources for research, what are they, and why?

Today, questions about ethics occupy a startling amount of the literature on animal laboratory research, raising questions about translation, animal welfare, the emotional and physical health impact of human-animal relationships on researchers, and even philosophy and virtue (Landi et al., 2021; Nobis, 2019; Walker, 2019). This is a moment with considerable potential for ongoing discussions about ethics in the science-music borderlands. With passionate interest, active discourse, and meaningful history in play, scholars and scientists are well equipped to rethink how ethics should be structured in music-science collaborations.

By examining ethical questions as historical artifacts, it is possible to develop a rich context for these collaborations. That context puts in play profound questions about who we consider human and how we hear them. These questions date to the middle of the twentieth century, when scientists and humanists were redefining their work in response to the Holocaust. Today in the twenty-first century, we are again redefining what we do in order to account for a future that includes global research and ecological crisis. Humanists, who have become so skilled at mapping our ignorance, and scientists, who excel at mapping what we can know, each bring traditions to the table that can inspire us to develop better and more truthful musical relationships with those who are unlike ourselves.

Notes

1. See <https://rsawa.research.ucla.edu/arc/humane-treatment-and-endpoints/>.
2. See, for example, Vartanian (1999); Riskin (2002). For an overview of the connections among the emergence of specialized musical knowledge, colonial conquest, and the humanizing education of the eighteenth century, see Agnew (2008).

3. See, for example, the language of the 1949 Geneva Convention governing prisoners of war (Article III, “Humane Treatment of Prisoners”). Interestingly, unlike most material on animal welfare in the US, the convention defines the word *humane*: “In accordance with the ordinary meaning of the word ‘humane,’ what is called for is treatment that is ‘compassionate or benevolent’” (para. 1573).

4. See, for example, the language of the 1964 Civil Rights Act, Martin Luther King Jr.’s 1963 “I Have a Dream” speech, and Newton and Seale (1967, p. 3).

5. The notable exception is the discovery of humpback whale song in 1969–1970, in which Payne and McVay (1971) adopted a very different approach to musical listening. Their approach affected subsequent studies of cetacean vocalization but seemingly had no significant impact on birdsong research such as Nottebohm’s (1981).

6. University of Southern Maine, IACUC Form Submissions template (May 17, 2018), https://usm.maine.edu/sites/default/files/orio/IACUC_Form_Submissions_template.pdf.

7. As I describe the challenges presented by this approach to human uniqueness, I want to note a separate but related practice that plays a role in the ethics of IACUC oversight: the idea that human needs take priority over the needs of other animals. In practice, this often functions more as a claim about kinship than a fundamental claim about human primacy, or what Frances Bartkowski (2008) calls the relationship of “kissing cousins.” Consider, for example, how debates about animal trials in early research on COVID-19 vaccines were framed in the popular culture in 2020: although the animal experiments were quickly approved and conducted, rumors that such animal trials had been skipped prompted some to reject the use of vaccines for human beings (see, e.g., Dupuy, 2020; Reuters, 2021). There were no debates about whether it was *ethical* to test vaccines on animals. The principle here seems not to be about the uniqueness of human beings (indeed, animal trials are worthless if they cannot translate to human bodies) but about what we owe one another. Although in this case only humans were judged “kin,” the same principle is easy to extend across species: an individual might conduct an experiment on a dog in the laboratory that he or she would never perform on the pet dog at home, not because humans are unique but because one dog is family and the other isn’t. For the sake of simplicity, I don’t address this position in the chapter, but it is an important alternative perspective.

8. The Nuremberg Code is reproduced in *British Journal of Medicine*, 1448(December 1996), 313, <https://doi.org/10.1136/bmj.313.7070.1448>.

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The MIT Press would like to thank the anonymous peer reviewers who provided comments on drafts of this book. The generous work of academic experts is essential for establishing the authority and quality of our publications. We acknowledge with gratitude the contributions of these otherwise uncredited readers.

This book was set in Stone Serif and Stone Sans by Westchester Publishing Services.

Library of Congress Cataloging-in-Publication Data

Names: Margulis, Elizabeth Hellmuth, editor. | Loui, Psyche, editor. | Loughridge, Deirdre, editor.

Title: The science-music borderlands : reckoning with the past and imagining the future / edited by Elizabeth H. Margulis, Psyche Loui, and Deirdre Loughridge.

Description: Cambridge, Massachusetts : The MIT Press, 2023. | Includes bibliographical references and index.

Identifiers: LCCN 2022014716 (print) | LCCN 2022014717 (ebook) | ISBN 9780262047647 (paperback) | ISBN 9780262373036 (epub) | ISBN 9780262373043 (pdf)

Subjects: LCSH: Music—Psychological aspects. | Musical ability. | Cognition. | Neuropsychology.

Classification: LCC ML3830 .S293 2023 (print) | LCC ML3830 (ebook) | DDC 781.1/1—dc23/eng/20220328

LC record available at <https://lcn.loc.gov/2022014716>

LC ebook record available at <https://lcn.loc.gov/2022014717>