

EXPERIMENTAL BODIES: ANIMALS, SCIENCE, AND COLLECTIVITY IN CONTEMPORARY SHORT-FORM FICTION

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ABSTRACT. *Experimental Bodies: Animals, Science, and Collectivity in Contemporary Short-Form Fiction.* In the relatively short time since its establishment as an area of research, literary animal studies has become a burgeoning field covering a significant amount of intellectual terrain: traversing, for example, thousands of years of history and an array of human-animal encounters like pet ownership and breeding, hunting, farming, and biotechnology. However, few scholars have focused their attention on “experimental animals”—that is, animals used in experiments within and beyond laboratories—and fewer still have investigated the aesthetic and ethical challenges of representing these animals (and literary animals more generally) as collectives. This article uses the polysemy of “the experimental” to think together innovative literary forms and descriptions of scientific research and experimentation. In particular, it considers some of the tensions that arise in literary experiments that feature representations of animal collectives in science. In place of an in-depth study of a single text, I draw on Natalia Cecire’s vocabulary (2019) of the “flash” to explore how Tania Hershman’s short story “Grounded: God Glows” (2017), Karen Joy Fowler’s “Us” (2013), and an excerpt from Thalia Field’s *Bird Lovers, Backyard* (2010) constitute an ecology of experimental texts which, when considered alongside one another, highlight patterns of animal multiplicity and movement. Foregrounding literary strategies like fragmentation, we-narrative, and synecdoche and juxtaposition, I argue that snapshots of animal collectives in Hershman, Fowler, and Field accumulate into a shimmering and hybrid multitude of bodies resistant to uncritical forms of literary anthropomorphism and impersonal scientific practices that frequently transform such bodies into readable and interpretable “data.”

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REZUMAT. Corpuri experimentale: animalele, știința și colectivitatea în proza scurtă contemporană. În timpul relativ scurt de la înființarea acestui domeniu de cercetare, studiile literare despre animale au avansat semnificativ pe teren intelectual, traversând milenii de întâlniri între om și animal, și surprinzând aspecte precum proprietatea asupra animalelor de companie și reproducerea acestora, vânătoarea, agricultura și biotehnologia. Cu toate acestea, puțini cercetători și-au concentrat atenția asupra animalelor experimentale – cu alte cuvinte, asupra animalelor utilizate în experimente în interiorul și în afara laboratoarelor. Și mai puțini au investigat provocările estetice și etice ale reprezentării colective a acestor animale (și a animalelor literare în general). În articolul de față, mă folosesc de polisemia „experimentalului” pentru a gândi împreună forme literare inovatoare și descrieri ale cercetării științifice și experimentării. Specific, mă refer la unele dintre tensiunile care apar în gândirea despre experimentele literare ce conțin reprezentări de colectivități de animale în știință. În loc de un studiu aprofundat al unui singur text, recurg la vocabularul prozei „flash” al Nataliei Cecire (2019) pentru a arăta modul în care povestirile „Grounded: God Glows” (2107) de Tania Hershman, „Us” (2013) de Karen Joy Fowler, precum și un fragment din *Bird Lovers, Backyard* (2010) de Thalia Field constituie o ecologie a textelor experimentale care, luate unul lângă celălalt, evidențiază modele ale multiplicității și mișcării animaliere. Recurgând la strategii literare precum fragmentarea, narațiunea colectivă, sinecdocă și juxtapunere, susțin că, spre deosebire de genul de „roman experimental” pe care îl avea în vedere Zola, care își domină subiectul/subiecții dintr-o privire, instantaneele colectivităților animaliere din textele lui Hershman, Fowler și Field se acumulează formând o colectivitate fulgurantă și hibridă de corpuri care se opun impersonalizării și generalizării unei „metode experimentale” – metodă ce caută adesea să transforme asemenea corpuri în date lizibile și interpretabile.

Cuvinte-cheie: *animale de laborator, experimentare, flash, formă, fragmentare, narațiuni colective, sinecdocă, juxtapunere*

Introduction: Animal Collectives

In the third and final part of Yōko Tawada’s *Memoirs of a Polar Bear* (2014 trans. 2016) zookeeper Matthias stares into the eyes of the young polar bear Knut: “...your eyes aren’t empty mirrors,” he says, “you reflect human beings.

I hope this doesn't make you mortally unhappy" (187).² In each section of Tawada's curious book, generations of polar bears 'reflect' humanness: standing in as symbols for migrant experience and anthropogenic climate change as well as performing human desire in circus acts and zoo exhibitions. The bears in Tawada's book tell their own stories and her use of anthropomorphism, or the endowment of nonhumans with human traits, is a device common to representations of literary animals. Yet, rather than a type of straightforward and uncritical anthropomorphism that risks erasing animals and animal experience, Tawada's bears dance across what Lars Bernaerts et al. have called a "double dialectic" of "empathy and defamiliarization" (69). These literary animals

prompt readers to project human experience onto creatures and objects that are not conventionally expected to have that kind of perspective (in other words, readers "empathize" and "naturalize"); at the same time, readers have to acknowledge the otherness of non-human narrators, who may question (defamiliarize) some of readers' assumptions and expectations about human life and consciousness. (69)

The bears' status as metaphors and visible, readable 'objects' of spectacle is both enabled and challenged by a form of nonhuman focalization that navigates this double dialectic. As the three bears grapple with the human worlds around them, they simultaneously perform and defamiliarize the humans reflected in their gaze: "Matthias loved to say hello to Knut 'nose to nose,' while Knut disliked it. Every time, he found himself worrying about Matthias, whose human nose lacked moisture. If an animal had a nose as dry as Matthias's it would probably be a sign of illness" (186).

I use this brief gloss of Tawada's work to introduce this essay's key concern: investigating the ways in which short-form, experimental literature negotiates some of the aesthetic and ethical challenges of representing literary animal collectives. Rather than a type of simultaneous vocalization of collectivity Natalya Bekhta has labelled "we-narration" (2017, 2020), Tawada's bears narrate, to use Susan S. Lanser's terminology (1992, 21), "sequentially," creating a sense of ursine community through the accumulation of their stories and, more abstractly, through their status as symbols and species representatives. Chiming with Knut's reflective eyes, this essay offers narratological readings of three

² The third section of Tawada's book, "Memories of the North Pole," is a fictional rendering of a real-life bear of the same name who was rejected by his mother and raised by humans in the Berlin Zoo from 2006-2011. At the age of just four years old, Knut suffered a seizure that led to his drowning. The seizure is now thought to have been caused by an autoimmune inflammation typically found in humans ("anti-NMDA receptor encephalitis")—a fact which has led researchers to consider testing human treatments on animals (Amos 2015, n.p.).

nonhuman collectives that negotiate fuzzy boundaries between the human/animal and the individual/multiple. In place of circus and zoo animals who are often highly visible, I look instead to the comparatively ‘unseen’ and ‘invisible’ bodies of animals in laboratory spaces.

Within critical literary scholarship, animal collectives have received relatively little attention. While a number of narratologists have begun to investigate forms of human collective narration, Dominic O’Key and Marco Caracciolo are, to the best of my knowledge, the only two scholars to turn their gaze on nonhuman animals who narrate and/or act in the plural.³ In “Animal Collectives” (2020)—an essay also citing Tawada’s collective of bears—O’Key argues that despite “the fact that billions of animals live out a collective species life, in flocks and herds and swarms,” there exists a paucity of examples of Anglophone novels that feature a collective nonhuman animal narrator (81). Indeed, he is unable to identify “a single long-form narrative voiced by an animal collective” (125). The reason for this absence is, according to O’Key, the “individuating logics” of novelistic form (2020, 75), and, we might add, its well-charted “anthropomorphic bias” (Fludernik 1996, 9). Where the novel falls short, O’Key finds in poetry and short-form prose instances of collective animal narration, noting as examples Les Murray’s “Pigs,” Margaret Atwood’s “Song of the Worms,” and Karen Joy Fowler’s “Us.” What is interesting about O’Key’s survey is its focus on collective enunciation. While likely beyond the scope of his essay, the examples cited do not allow for speculation about forms of nonhuman collectivity that exist prior to or beyond enunciation. This raises the question: Does a focus on ‘voice’ risk anthropomorphically limiting our recognition of nonhuman collectivity? And, if so, what might the alternatives look like? Caracciolo’s essay, “Flocking Together” (2020), offers a preliminary response by tracing three different forms of representing nonhuman animal collectivity in literary prose: like O’Key, he considers “animals that embrace a collective ‘we’ to critique the individualism of contemporary society,” while also investigating “animals that function as a collective agent” and “animals that communicate a shared mind through dance-like movements” (239).

This essay draws inspiration from O’Key’s and Caracciolo’s work to consider the representational possibilities for literary animal collectives. At the same time, it develops this work in a specific context by investigating animal

³ For more examples of narratology’s growing interest in collective narration, see Susan S. Lanser’s *Fictions of Authority* (1992), Uri Margolin’s “Telling in the Plural” (2000), Alan Palmer’s *Social Minds in the Novel* (2000), Monika Fludernik’s “The Many in Action and Thought: Towards a Poetics of the Collective in Narrative” (2017), and Natalya Bekhta’s influential “We-Narratives: The Distinctiveness of Collective Narration” (2017) and *We Narratives: Collective Storytelling in Contemporary Fiction* (2020).

multitudes in short-form, experimental writing—writing that tangles visibility, literature, and science. Here I place side-by-side three different literary texts that feature ‘flashes’ of nonhuman collectivity in representations of science. The examples are notable for their brevity and fragmentation, for their interest in the visual, or what Roman Bartosch calls “gaze moments”—the “fleeting yet forceful moments of creaturely recognition [involving] a reciprocal gaze between human and nonhuman characters” (2017, 220).⁴ In place of an in-depth study of a single text, I consider how Tania Herschman’s short story “Grounded: God Glows” (2017), Karen Joy Fowler’s “Us” (2013), and an excerpt from Thalia Field’s *Bird Lovers, Backyard* (2010) constitute an ecology of experimental texts from which certain rhythms of relation emerge. More specifically, across these texts, snapshots of animal collectives accumulate to create a shimmering image of the nonhuman which foregrounds patterns of animal multiplicity and movement.⁵ This movement operates both within and across textual bounds: animals interacting with and modifying their storyworlds, and the motion of *emotion* as affect moves across textual and species boundaries—a move that creates both empathy and defamiliarization in readerly experience. All readings are framed by a broad notion of ‘the experimental’ and I use the concept’s polysemy to think together innovative literary forms which refuse, or play with the limits of, anthropomorphism, and descriptions of scientific research and experimentation.

Experimental Gazes and Flashes

Within the relatively recent “animal turn” (Ritvo 2007) of cultural and literary scholarship, the nonhuman gaze has played a recurring role in theorizing both real and literary animals. Indeed, “[t]he word theory,” as Philip Armstrong writes, “comes from the Greek *theōrein*, to gaze upon: our theories about things are intimately related to how we look at them” (Armstrong 2011, 175). As evidenced by a brief trek through the theoretical terrain of human-animal philosophy and criticism, the gaze of the animal has a certain, and enduring, gravitational pull. Scholarship in cultural animal studies (CAS) often draws on

⁴ In focusing on these short texts and their ‘gaze moments,’ I am inspired by Roman Bartosch’s (2017) investigation of literary representations of *brief* transspecies encounters which nevertheless have significant “narrative impact” (160). He looks at the role literary forms play in “the creation of affect” and “short moments of ‘epiphany,’ in which the human and animal met and exchange gazes as points of entry for creaturely interpretive and affective response” (2017, 160). While this essay borrows a number of key concepts from Bartosch’s approach, it differs in its focus on the role that particular formal features play in expressing the epistemic virtue of the flash, or insight-at-a-glance into human-animal relations in scientific contexts.

⁵ This essay does not look explicitly at examples of human-animal relationships in ‘flash fiction’; however, the form would be very likely be amenable to the arguments I develop here.

philosophical works like Levinas' ethics of the face of the Other (cf. Atterton and Wright 2019) and Derrida's vulnerability in front of the gaze of his cat (2008). In cultural and literary studies, John Berger's oft-cited "Why Look at Animals" (1980) proposes an "abyss of noncomprehension" between human and animal, while a more recent counter-essay by Anat Pick, "Why Not Look at Animals" (2015), raises concerns about animal privacy. Literary animal studies scholarship frequently engages directly or tangentially with the common (and contentious) anthropocentric assumption that animals

are always the observed. The fact that they can observe us has lost all significance. They are objects of our ever-extending knowledge. What we know about them, is an index of our power, and thus an index of what separates us from them. (Berger 16)⁶

Zooming in further still, narratological approaches to literary animals frequently consider how narration and focalization might offer insight into and approximate animal experientiality—including animals' capacity to 'look back' at the human (Herman 2011 and 2018; McHugh 2011; Bernaerts et al. 2014; Caracciolo 2016, ch. 5). Similarly, description—traditionally (though not exclusively) read in opposition to narrative—has been discussed as the "visual" in narration, associated with techniques like ekphrasis and the tableaux (D. P. Fowler 1991; Beaujour 1981). With its vocabulary of lenses, frames of reference, illuminations, observations, highlights, reflections, obfuscations, and foreshadowing, it is difficult to detach literary criticism more generally from ways of seeing, from taking certain views or perspectives. However, when brought into conversation with research from Science and Technology Studies, this emphasis on the centrality of vision in (transspecies) encounters and interpretive processes risks reinforcing boundaries like subject/object, active/passive, human/animal (cf. Puig de la Bellacasa 2017, 95-122). Largely, this relates to vision's reputation in Anglophone culture as "the least embodied of the senses," as "the human sense most associated by scientists and philosophers with objective knowledge, and the one most associated by poets and prophets with the transcendental imagination" (Waugh 2009, 132). The technical or scientific gaze—a "view from nowhere" (Nagel 1989)—is cultivated in practice through the use of various technologies and instruments and rhetorically via writing which relies heavily on passive grammatical constructions that erase human and nonhuman animal actors. One might challenge the 'distance' of the (scientific) gaze by reading the visual sensory modality as

⁶ See for example Wendy Woodward's *The Animal Gaze: Animal Subjectivities in Southern African Narratives* (2008) and Jutta Ittner's "Who's Looking? The Animal Gaze in the Fiction of Brigitte Kronauer and Clarice Lispector" (*Figuring Animals* 2005).

haptic—as a form of touch-look Eva Hayward labels “fingeryeyes” (2010).⁷ However, instead of attending to the haptic quality of the gaze, this essay considers how the accusations generally levelled against ‘the scientific gaze’—its reductiveness, distance, and depersonalization—might be productively taken up and transformed when read through the instantaneous, condensed, and accumulative tendencies of a way of reading I call, following Natalia Cecire’s work in *Experimental: American Literature and the Aesthetics of Knowledge* (2019), ‘the flash.’

For Cecire, ‘the flash’ forms part of her literary-cultural attempt to think through the ways in which literature and science meet and muddle in the concept and practice of ‘the experimental.’ In literary studies the term ‘experimental’ “has long been recognized as [...] contentious” and “difficult-to-define,” associated with a kind of “scienciness,” “newness, innovation, invention” and an interest in “language’s purchase on reality” (Cecire 2019, 29; 57). While literary experimentation is often treated formally, this essay also takes into account experimentation on the level of content; for example, literary representations of laboratory spaces. The ability of ‘experimentation’ to semantically float in the way it does is largely related to a process of abstraction that began in an especially concentrated manner in the nineteenth century. In places like England, France, and the US, scientific experimentalism was progressively detached from the material conditions of ‘the experiment’ as scientists increasingly gravitated towards the idea of a ‘scientific method’ portable and translatable across not only different fields of science, but also—some claimed—across disciplines (Cecire 2019, 51). In one of the most notable examples of such a ‘translation,’ author Émile Zola attempted to put the methods of science to work in the fictional domain. In his 1880 (trans. 1893) essay “The Experimental Novel,” Zola asks, “Is experiment possible in literature, in which up to the present time observation alone has been employed?” (1893, 6). Where observation is associated with ‘mere’ representation, experimentation involves *intervention* (Cecire 2019, 73). Zola cites approvingly nineteenth-century vivisectionist Claude Bernard’s contention that the methods of experimental medicine “will result in dispersing from science all individual views, to replace them by impersonal and general theories, which will be, as in other sciences, but a regular co-ordination deduced from the facts furnished by experiment” (Bernard in Zola 1893, 45). For Zola, this meant a type of novel that would master its subject(s) and depict its processes and findings in general and impersonal terms. Despite its hype, however, the notion of a consistent, abstract,

⁷ Fingeryeyes is, for Hayward, a type of haptic-optic gaze, or ‘touch-look.’ It describes the “synaesthetic quality of materialized sensation”—moments in which “senses are amalgamated, superimposed” (2010, 580). For more on how Hayward’s concept might be employed in a reading of literary descriptions of animals used in science, see Lambert 2021.

and portable scientific method—one rid of individual views and oriented towards the impersonal and general—was essentially nineteenth-century “propaganda” (Cecire 2019, 10); instead, ‘the scientific method’ was a mental model, a collection of ideal practices and postures through which a scientific self could be both cultivated and represented.

It is important to note experimentalism’s distinct meanings and consequences for literature and science—namely, that fact that textual bodies are vastly different to lived, fleshy ones. However, it remains possible to track across disciplines the patterns of some of these ‘ideal practices and postures.’ According to science historians Lorraine Daston and Peter Galison, loose blueprints through which individuals attempt to cultivate a scientific self can be understood as “epistemic virtues” (2007). Like ‘the experimental,’ epistemic virtues are sites of convergence—between, primarily, the epistemological and ethical. In one sense, epistemic virtues are (like moral virtues) understood as character traits desirable for knowledge production and acquisition—they are principles and norms “internalized and enforced by appeal to ethical values as well as to pragmatic efficacy in securing knowledge” (Daston and Galison 2007, 40–41). While changeable across history, common contemporary examples include precision and objectivity, as well as creativity and attentiveness (Daston and Galison 2007, 43).

Cecire’s work focuses on ‘flash,’ ‘objectivity,’ ‘precision,’ and ‘contact’—virtues that overlap with (and contradict) one another. In this essay, I work with ‘flash’ alone. The ‘flash’ is, for Cecire, the epistemic virtue bound up with population dynamics, with an interest in collectivity and species-level thinking. To clarify the link between the flash and the social body, Cecire turns to the nineteenth-century’s fascination with the crowd and the stirrings of a field that would later be called sociology.⁸ As a nebulous mass, the crowd is in constant motion—something unable to be captured via large-scale statistical information. While there’s undisputable value in the kinds of insights afforded by statistical, quantifiable studies of populations, the knowledge afforded by the flash is distinct: it emphasizes the object of study as “temporally specific, changeable, and likely to change over time” (Cecire 2019, 93). Importantly, flash not a method but is instead “a set of values aimed at the management of information, and especially too much information” (Cecire 2019, 89). With its instantaneous and momentary illumination of the opaque, it is temporally tied to brevity and to a

⁸ As examples, Cecire touches on Walter Benjamin’s reading of Poe’s “The Man of the Crowd” (1840), Henry Bowditch Pickering’s image *A Group of Saxon Soldiers and Their Composite* (circa 1892), Jacob Riis’s woodcut-illustrated newspaper essay “Flashes from the Slums: Pictures Taken in Dark Places by the Lightning Process” (1888), and geographer Henry Gannett’s work on the 1880, 1890, and 1900 statistical atlases for the US Censuses.

certain reductiveness. However, this reductiveness does not, contra Susan Sontag's critique of photography, produce a mimetic miniature of reality, but is instead closer to Ezra Pound's "luminous detail" (1911, 130)—a detail that "doesn't begin to describe the whole, and yet it's all you need to know" (Cecire 2019, 121). For Cecire, flash orbits around qualities of "condensation, instantaneity, and chiaroscuro," or contrasts between light and dark (2019, 127). By combining an epistemological desire for a "comprehensive and accurate view of the whole" with the ethico-political desire to "see the 'big picture,'" flash takes on its status as an epistemological value (Cecire 2019, 16). Put another way, flash describes an aspiration to obtain a *sense* of the whole (for example, a certain collective or a population) at a glance. Introducing the vocabulary of the flash to an investigation of literary animal collectives allows me to attach fleeting textual encounters to epistemological and ethical concerns—a move that opens onto questions like: how are animal collectives represented and what kind of insight (if any) do we get from a writerly and readerly 'glance,' from fleeting transspecies 'gaze moments'? What kind of resistances might we find to this way of looking?

In what follows, I investigate the potential to read fragmentation, 'we-narration,' and synecdoche and juxtaposition as formal manifestations of 'gaze moments,' as 'flashes' expressing an associated epistemological and ethical desiderata for comprehensiveness and the ability to "see the big picture," or to see animal collectivity at a glance (Cecire 2019, 16). On the one hand, formal manifestations of qualities like instantaneousness and condensation evoke the scientific gaze (with the aforementioned critiques that attend it). Yet, when viewed together, the 'gaze moments' of these literary texts draw attention to a fundamental ontological ambivalence that inheres in human-animal relations in experimental settings. In both scientific and literary contexts, experimentalism often reflects an awareness of its own artificiality. I thus increasingly draw out the non-mimetic quality of these 'flash' encounters, emphasizing the "luminous details" or insights we can gain from self-consciously artificial texts that do not seek to portray animal experientiality through anthropomorphism or an *Umwelt* representation of nonhuman consciousness, but instead linger on the transspecies insights or 'epiphanies' specific to fictional encounters (Herman 2011; 2018).⁹

⁹ *Umwelt* is a term proposed by the German-Estonian philosopher-biologist Jakob von Uexküll to describe the potential to "figur[e] the lived, phenomenal worlds [...] of creatures whose organismic structure differs from our own" (Herman 2011, 159). It is a way of conceptualizing what perceptual cues *matter* to a creature in its environment and the ways in which its body is equipped to engage with certain environmental stimuli. For a critique of *Umwelt* and seeming *objective* representations of "what it is like" to be a particular animal, see Thomas Nagel's famous essay "What Is It Like to Be a Bat?" (1974). Here Nagel argues that our understanding of nonhuman experience will always be

Fragmentation: “God Glows”

Published in 2017, Tania Hershman’s short story collection *Some of Us Glow More Than Others* explores the relationship between change and uncertainty—especially feelings ushered in by the increasing entanglement of science and technology in our contemporary moment. These are strange and captivating stories: the language is scientifically precise, yet often tends to sensation over comprehension. Here I argue that ‘flashes’ of insight into nonhuman collectives are just as much affective as informational (in the sense of quantifiable data)—indeed, the reading here demonstrates that insight is also to be found in what refuses illumination. From Hershman’s collection of vignettes, I turn to a fragment within a fragment: “God Glows” from the first section “Grounded.” In “God Glows,” readers meet Emmylene, a woman who, we learn from textual cues, seeks refuge in a nunnery from an unspecified romantic event of the past. Across the text’s eight pages, religion and science rub up against one another. Before becoming a nun, Emmylene was a physicist; feeling drawn back to science, she convinces the monastery’s Mother Superior to allow her to conduct biological research. To undertake this work, Emmylene orders a lab coat and equipment, as well as “a cage of knockout mice” (13)—animals whose genes have been ‘turned off’ or replaced with an artificial piece of DNA sequence. The story “God Glows” is a brief one and the mice’s role in it is relatively minor. However, despite—or maybe because of—this fleetingness, the mice help me to explore issues related to the power dynamics of an epistemic virtue like the flash, which seeks population knowledge, or knowledge about a species, at a glance.

In contrast to the other two texts explored in this essay, Hershman’s interest in collectivity operates on a higher level of abstraction—namely, that of genetics. This interest in genetics appears in a number of places: in Emmylene’s experiments, in references to Gregor Johann Mendel (1822–1884)—a friar who was the first person to scientifically study genetics— and in the presence of the knockout mice. In one of her first experiments, Emmylene “decides to extract some DNA” (14) following a protocol she’s printed out for work on a line of HeLa cells.¹⁰ A couple of pages later, as she fiddles with her pipettes, Emmylene is “startled” when “the word ‘Mendel’ comes into her head” (16). While Emmylene is taken by surprise, Hershman gently foreshadows Mendel’s appearance by

limited by the human mind and sensory-motor differences (439; Caracciolo 2016, 143). Indeed, as Marco Caracciolo reminds us, “literature does not provide tools to validate insights into animal experience—it can only offer imaginary reconstructions whose perceived plausibility reflects the biases (and limitations) of the human imagination” (2016, 144).

¹⁰ For more on the life of Henrietta Lacks and the ethically-problematic use of her cells in research, see Skloot 2010.

planting a reference to peas just the page before (Emmylene speaks, “spearing a pea” [15]). In his research, Mendel explored the concept of ‘trait inheritance’ by breeding pea plants and tracking certain characteristics like the plant’s color and size. In the moment he appears, Emmylene is positioned as an ‘inheritor’ of Mendel’s legacy, with his monastic title evoking a sense of paternal lineage: while at first startled, Emmylene then “understands. He had his peas, she has her lab. Father Gregor” (16). In place of peas, Emmylene’s lab houses HeLa cells and knockout mice. While the HeLa cells raise their own important ethical questions (largely related to consent), here I consider how the knockout mice are portrayed as both a concentrated and resistant site of genetic ‘information.’

In biomedical laboratories, animals are frequently bound up with practices of condensing multiplicity to facilitate insight at a glance. In his well-known study of neurobiological research, Michael Lynch charts how in the moment of their “sacrifice” laboratory animals undergo a conversion from “naturalistic” or fleshy, material creatures to disembodied, analytic, and interpretable data (1988). In a great number of cases, informational data is politically and ethically productive (and essential); however, practices of ‘sacrifice’ in the lab frequently translate animal bodies into ‘readable,’ two-dimensional information in ways that troublingly obfuscate their presence and sentience.¹¹ To ensure the (nonhuman) crowd is made legible, the ‘sacrifice’ facilitates the animal’s conversion into ‘readable,’ two-dimensional information. Yet, as Simone Dennis points out, this bifurcation of the animal between pre- and post- sacrifice overlooks a reality in which animals are reduced to readable, informational bodies long before their death in an experiment (2011, 85). From around the 1970s, Waugh notes, “the burgeoning sciences of molecular biology and the discourses of cultural and literary theory became obsessed with an understanding of the body as ‘written,’ as text” (133)—a view that was reinforced in 2000 when the Human Genome Sequencing Consortium published a report which “spell[ed] out the very ‘grammar’ of the human body as a string of three billion letters, proclaimed as the recipe for knowing, and therefore creating, a human self” (Waugh 2009, 136).¹² While Mendel studied inheritance, biologists now also study the behavior and function of DNA on the levels of the cell, organism, and population. Depending on the research, knockout mice cut across all of these scales. By modifying DNA, scientists are able to isolate particular genes and investigate their operation(s). Emmylene for example, watches an instructional video “...looking for a particular gene that she knows is definitely activated in the mice” (17). However, in contrast to the body of the frog with

¹¹ For an example of a study that explores these tendencies of rhetorical erasure, see Migeon 2014.

¹² The National Human Genome Research Institute specifies that the “complete DNA instruction book, or genome, for a human contains about 3 billion bases and about 20,000 genes on 23 pairs of chromosomes” (August 24, 2020, n.p.)

which the story opens—a body “slit open” for the touch-look of “prying fingers” (13)—Emmylene’s encounters with the mice are characterized by opacity and a seeming inversion of biomedical ‘gaze moments.’

It is possible to locate the flash’s tendencies of “condensation” in a “literary register” (Cecire 2019, 105). We might imagine, for example, an omnipresent godlike perspective, a panoramic view, or the sweeping and instantaneous military *coup d’oeil* (Cecire 2019, 105). Both the title and monastic setting of Hershman’s text gesture to an awareness of the ways in which ideals of omnipresence permeate both religious and scientific thinking and rhetoric. In the domain of science, the all-seeing gaze we find in Psalm 139 (“even the darkness will not be dark to you”) translates as what Donna Haraway has called “the god trick”—the capacity “of seeing everything from nowhere” (1988, 581).¹³ Like God, the scientist’s ability to modify nonhuman bodies (Mendel’s peas; genetically-modified mice) denotes “not only omniscience but also ultimate *creative power*” (Dennis 2011, 77, original emphasis). “God Glows,” however, refuses the dynamic in which a scientist gazes upon, reads, and writes experimental bodies. Instead, the story both inverts and obscures this gaze: “She starts to write to her biochemist friend, while wearing her lab coat, watched by her red-eyed mice” (16) and “She wriggles out of the lab coat and stands for a while in her underwear. The mice scurry” (17). Throughout, the mice remain to Emmylene both “unreadable” and, often, invisible: they “eat, then vanish within the mounds of hay in their cage” (16).

In place of readable nonhuman animal bodies, “God Glows” experiments with ‘gaze moments’ in which animals appear to intervene in and destabilize acts of transcription:

The mice, bolder, stare at her. Emmylene is looking for.
Looking. For.
Looking. (19)

Before this moment, the knockout mice appear in set-pieces that position their behaviour as a reaction to human action:

She puts her pen down. The mice scurry. (16)
And then they’re [Emmylene and Immelda] laughing so hard Emmylene
thinks she might choke. The mice scabble. (19)

¹³ As Haraway has noted, scientists themselves don’t proposit this visual mastery or an all-encompassing objective view. Objectivity is instead another epistemic virtue cultivated through particular “techniques of the self” (Daston and Galison 2007, 381). One is, Haraway notes with self-conscious “disciplinary chauvinism,” more likely to run up against the notion that objectivity actually exists and that scientists “act [...] on the ideological doctrines of disembodied scientific objectivity” in a field like philosophy (1988, 576).

The fragmentation of Emmylene's language of "looking" seems to invert pre-established "grammars" of transspecies relationality (Beer 1983, xxviii): the grammatical position of Emmylene's looking suggests that both this and the attendant linguistic fragmentation are causally-related to the mice's gaze. Hershman pushes this further still. Towards the end of the story, we realize that at work here is not a simple inversion of a 'gaze moment'; instead, it is a total destabilization of the metaphorical mapping between textual and biological bodies.

In the penultimate scene, Emmylene gathers the other nuns to give a PowerPoint presentation of her experimental findings. She's collected blood from herself and Sister Immelda and projects an image of her cells on the screen.

Mother Superior is smiling. "You are keeping us most wonderfully in suspense, child. What have you discovered in the blood?"
 "Love," whispers Emmylene, and her hands find each other, fingers knitting together, and she is crying. (21)

In reading her cells, the Emmylene presents a 'finding' that is affective rather than analytic—a move which makes explicit the story's consistent, if subtle, challenge to reading (textual) bodies. We find this challenge in, for instance, Emmylene's often fragmented and vague focalization and in the fleeting and ambiguous encounters with the knockout mice.

The unreadability of animal and human bodies in Hershman's story highlights the limits of vision, suggesting that flashes of insight also comprise feeling. In biomedical research, the metaphor of the readable body plays a key role in the use of animals as models. The "written body" facilitates translation and substitution: if the body is information alone, alphabetical patterns of genetic code, "then what carries the information ceases to matter" (Waugh 2009, 138). Mice, comprised of almost exactly the same 'text' as humans, can be read as humans (and, in an unlikely scenario, vice versa). In "God Glows," however, Hershman's staccato-like sentences, linguistic fragmentation, and inversions of 'gaze moments' transmit an awareness that "objects of study" (both human and nonhuman) always have an element of unreadability; they are "agential and functionally uncontainable except by surprise, in the briefest of instants" (Cecire 2019, 98). In the spaces in between what we see—the shimmer or chiaroscuro-like play of opacity and illumination, knowledge and ignorance—is something which exceeds both analytic reduction and linguistic representation:

Later, Emmylene makes a list in her notebook. She puts down "taking blood" and then a dash, and that space, the one following the dash seems to scream at her. Why? it shouts. Why blood? What would you do with all that blood? Why would you take needles, look at their arms, look at their skin. Puncture. Puncture. The word rolls around in her mind. Sharpness. A stab. (17)

In Hershman's text, affect punctuates even scientific inscription. Markings on the page scream and deform, reminding readers that 'information' is never separate from bodies or affects. In its resistance to 'readable bodies' and emphasis of a shared transspecies occupancy of a visual field in which humans' status as subjects and objects of the gaze shimmers and blurs, "God Glows" offers a flash of feeling rather than fact—a feeling which is, like DNA, frequently shared. In what follows, I turn to a text which features a collective nonhuman narrator who more explicitly expresses what we might read as genetic memory—memory that stretches across both time and space.

We-Narration: "Us"

The flash is, as noted, bound up with an interest in capturing and condensing the dynamic fluctuations of a collective. It "supplements the crowd's unreadability by giving the crowd a readable face" (Cecire 2019, 122). With its use of a technique Natalya Bekhta has labelled "we-narration" (Bekhta 2017; 2020), Karen Joy Fowler's short story "Us" (2013) condenses time, space, and a multiplicity of bodies into a single readable 'face' or 'flash': the narratorial "we" of a collective of Berkeley rats. According to Bekhta, "we-narration" involves

the narrator speaking, acting, and thinking as a collective narrative agent and possessing a collective subjectivity, which a narrative performatively creates and maintains throughout its course. [...] [T]he we-narrator is a collective character narrator whose voice does not imply an "I." (2020, 11)

As O'Key notes, Fowler's "Us" is one of the very few Anglophone prose texts to use "we-narration" for a nonhuman animal collective—a fact which likely relates both to formal conventions and writerly wariness. As Marco Caracciolo cautions, "[t]here are good reasons for shying away from groups: after all, categorical thinking carries the inherent risk of depersonalizing animals" (Caracciolo 2020, 242). Rather than looking at how "we-narration" might avoid this danger, however it is possible to read the 'flash's' tendencies for 'depersonalization' and reductiveness as effective strategies for mirroring the transformation animals undergo in laboratories. Indeed, it is the very paradox of this reductiveness which creates unstable and flickering transspecies boundaries. I develop this idea by reading the anthropomorphism and artificiality of Fowler's "we-narrative" in the context of the (literary) laboratory.

Despite spanning just five pages, "Us" is broken down further still into seven different subtitled snippets—all of which offer a collage of collectivity that condenses both time and space—a brief study in how "animals function dynamically in human cultures across the span of time" (McHugh et al. 10). The

second section, “Diaspora,” takes readers back to what is likely a recollection of fifteenth-century colonialism: “In those dim and distant days, when famine came [...] we took off together, boarded your ships and sailed in all directions. Our DNA is a map of your migrations” (481). Within the first sentence, the narrator sets up a division between the vocalizing “we” and the readerly “you.” However, it’s not until the fourth section, “You and Your Records” that the identity of the “we” is revealed via a memory of how many of “us” perished in a “raticide” (482). Despite the linguistic division between “you” and “us,” for the duration of the story, human and rat—like the aforementioned DNA—wrap around one another. In fact, the story literalizes this metaphor in the final section, “The Post-Rat,” where readers learn that the specific rats they are being addressed by are “hybrids”: rats with a bit of human “thrown in” (485). In the very first section, these hybrid “Berkeley rats” give this relationship a visual referent: “No one else so often mistakes a mirror for a window” (481). The rats, in other words, are not bodies to be looked through but instead reflect back the human in important ways—ways that both facilitate and trouble scientific ‘progress.’ As we glimpsed in Tawada’s text, this ‘reflection’ of the human opens onto questions of anthropomorphism—or the projection of human traits onto the animal. Nearly all studies of literary representations of animal consciousness and voice must at some point address questions of anthropomorphism.¹⁴ Yet, a representation of a laboratory animal, especially a genetically modified rat, part-animal, part-human, complicates a reductive reading of anthropomorphism as the simple mapping of human traits onto the animal. Instead, Fowler’s “Us” uses anthropomorphism self-reflectively to draw the reader’s attention to multiple levels of artificiality: of the literary animal, the modified real-world animal bodies it depicts, and the appearance of transspecies boundaries.

With necessary caution and awareness of difference, the literary anthropomorphism of animal voice in “Us” is tied to a reality of physiological mirroring and indeterminacy in biomedical laboratories. Where O’Key argues that “despite being a we-narrative, Fowler positions ‘Us’ *against* its ‘we,’” I would counter that the story’s final lines muddy this linguistic differentiation. The hybrid animals we encounter have so much of the human put into them it becomes difficult to differentiate between “us” and “them”: “Already we don’t know if this is our thought or yours” (485). While in general I would agree with Marlene Karlsson Marcussen’s contention that to “anthropomorphize is not purely a mirroring of human forms in things” (2021, 45), in Fowler’s text the device leans heavily into this function. Reflection *is* in many ways the justification

¹⁴ While it is beyond the purview of this essay to offer a detailed exploration of the rich and complicated topic of anthropomorphism in literary animal studies, excellent work on the affordances and limitations of the strategy can be found in De Waal (1999), Greg Garrard (2011, 157), and Jon Hegglund (2021).

underlying humans' use of animals in biomedical research. However, reflection in Fowler's text is a two-way street, a reality mirrored in the form of the text itself: in the beginning, readers are told how rats played a role in the plague, which resulted in a significant number of human and animal deaths. In the end, however, it is humans who are carriers of potential infection: "You keep us in quarantine now, isolated from most human contact, because the more of your DNA we carry, the more fragile we are. Your filthy presence threatens us with fatal infections. We hope you see the irony" (485). In this inversion, Fowler brings into dialogue mirroring on the levels of both content and form.

Within the story itself humans refuse the transspecies exchange of looks Bartosch labels a "gaze moment":

The walls of our world are opaque, because you don't like it when we look at you. You still hear us, incessantly gnawing on our own teeth. The nails on our feet tick like clocks as we move about on the steel floors of our homes. In your eternal light, we ask ourselves philosophical questions. What happens next? How much human DNA does it take to make a human? What are you like in the wild? (Fowler 485)

Readers are, however, offered no such reprieve from this hybrid gaze. With self-conscious artificiality, Fowler's "Us" creates multiple levels of ontological uncertainty: between the textual and the real, and between the human and the animal. How much, readers are forced to consider, "DNA does it take to make a human?" And, how much humanness needs to be 'added' to a literary animal to erase a story's anthropomorphism? Fowler's text functions as a limit case in studies of anthropomorphism, where the "narratorial 'we'" is artificially and intentionally made human to such an extent that we are forced to consider how far the designation of anthropomorphism stretches. By drawing attention to its levels of constructedness, "Us" lands readers in a place of ambivalence—yet, these ambivalences allow us to appreciate the specific affordances of fiction's artificial, constructed status.¹⁵ In Fowler's text what we have is not a mimetic representation of the real but a flash of insight specific to fiction—a form capable of producing a 'readable face' from the sprawling years and geographies of human-rat relations.

Synecdoche and Juxtaposition: "This Crime Has a Name"

Where Fowler leaves us in confusion about the ontological status of the collective we are addressed by, the narrator of "This Crime Has a Name," the third chapter of Thalia Field's *Bird Lovers, Backyard* (2010), leaves no such doubt.¹⁶

¹⁵ For more on the 'ambivalence' of laboratory mice and rats, see Dennis (2011).

¹⁶ This chapter of *BLB* was also published as a stand-alone piece in *Angelaki* vol. 14, no. 2, 2009.

Field's work is frequently described as 'experimental' due to its striking use of formal innovation and ambitious conceptual and philosophical scope. On both the levels of content and form, *Bird Lovers, Backyard (BLB)* stages an encounter between literary and scientific writing. As Jan Baetens and Éric Trudel observe in their attentive and insightful reading of *BLB*, the text does so by assuming "the form of a fuzzy set of fragments belonging to a whole (or perhaps a constellation of wholes) that itself remains incomplete and elusive" (2014, 605). These fragments vary in text type; we find, for example, "observation reports" of human-animal relationships; critical commentary on major ethologists and philosophers; as well as "various attempts to fictionally reconstruct or imagine acts of animal observation, either from the point of view of the human observer or from that of the observed animal" (Baetens and Trudel 2014, 602). Of these, "This Crime Has a Name" is an example of the latter—an attempt to fictionally reconstruct the observations of one particular animal: the now-extinct dusky seaside sparrow. A striking feature of this chapter is that the bird does not 'speak' to humans, but instead *writes*. Further, he does so with the register and authority of a scientist. "Between Air and Space," the sparrow informs us, is "something that has been on [his] mind for many years. Straight talk between organisms might add value for the speaker, or for the receiver—but not many birds write papers" (31). Contra the 'unreadable' animal gaze we find in Hershman's text, the sparrow's observations are exceedingly comprehensible (Derrida 2008). At the same time, however, Field's narrator poses a challenge to the familiar rubrics and categories of narratological theorization on nonhuman animals. Baetens and Trudel explain that the narrator of "This Crime Has a Name"

is light years away from all known literary attempts to invent an animal narrator, be it in the traditional anthropomorphic style or in the more ecocritically correct contextual *Umwelt* approach (to take two extreme positions of the spectrum established by Herman). The bird, who clearly is not the humanized animal we might imagine in our fables and parables, does not speak as a bird; rather, it expresses itself as a human being and writes as a scientist. (2014, 606)

In Field's text, the desideratum of the flash to 'see the big picture' manifests in the literary techniques of synecdoche and juxtaposition. More specifically, the sparrow's body is both an individual and a species, and the juxtaposition of the bird and (as we will see) the Apollo 11 moon landing, creates an analogical shimmering, or flickering, of multispecies networks.

Previously native to the marshes of Merritt Island—along the St. Johns River in Titusville, Florida—the dusky seaside sparrow began to suffer significant losses to its population with the introduction of mosquito control programs and the building of the Kennedy Space Center. By 1980, what were

thought to be the last remaining six male dusky sparrows—the last female was sighted ten years prior—were captured and taken to Walt Disney World’s Discovery Island.¹⁷ To distinguish them, each was designated a color: Red, Blue, Orange, White, Yellow, and Green. For a number of years, those involved in the Disney program carried out tests and breeding experiments with genetically similar species; these were, however, largely unsuccessful and in 1987, somewhere between 10-15 years of age, blind in one eye, and likely afflicted with gout, the last dusky seaside sparrow on earth died.

“This Crime Has a Name” literalizes the entanglement of the space program and the sparrows’ extinction by interspersing the bird-scientist’s species recollections with reflections from the Apollo 11 moon-landing—reflections largely related to loneliness and vulnerability. The flitting between these fragments creates a transspecies dialogue which approaches, from the related angles of human and nonhuman animal, population dynamics and decline. More specifically, in the case of both the final dusky seaside sparrow and the Apollo 11 crew, individual bodies are synecdochally employed to signify a collective. The dusky seaside sparrow is, for instance, not just a representation, but also a *representative*. In his own words, “A memory-bird that died and kept right on living, exploding from one to many in mid-flight” (31).

I am Red, but I will die. I am Blue, I die before being moved. I am Green, never found, presumed dead. I am White, fertile, the last hope. I die leaving Orange, almost twelve years old, alone. I am Orange. I do not sing. I don’t want to talk to people. I want to write unfinished papers. I am the Neil Armstrong of birds. Well, he was the first and I’m the last, but it’s the same. [...] Yellow, who died in 1985, was mailed to the Smithsonian in a bottle. (38)

John F. Kennedy: “It will not just be one man on the moon... but an entire nation, for all of us must work to put him there.” (35)

Endlings—the last survivor of a species—and astronauts condense (and conflate) the materiality of the individual with the abstraction of species-level thinking (“That’s one small step for man, one giant leap for mankind,” says Armstrong). By flickering between “air” (nonhuman life) and “space” (human life), Field creates a multispecies moving image, one which plays out transspecies entanglement. Anthropologist Deborah Bird Rose uses the vocabulary of the “shimmer” to discuss the ways in which dances of presence and absence “capture the eye” (2017, G54) and describe “the coming in and out of focus of multispecies

¹⁷ A survey in 1968 put the number of the birds at 1,800. Yet, the mosquito control projects of the 1950s and early 1960s and construction of the Kennedy Space Center soon took their toll (Wilford 1986).

knots, with their cascading effects” (Gan et al. 2017, G12). In some sense, the shimmering of this analogy is affectively moving: similar to the relatively tiny body of the bird, the view of earth from space reduces it to but a speck in the solar system. Like a murmuration of starlings in flight, Field’s juxtapositions blend individual and collective bodies in a shimmering of shared transspecies vulnerability.

The relationship between bird and astronaut in this chapter is largely built on analogical resemblance—a device central to *BLB*, with Field deploying and critically discussing it on multiple occasions:

Can we imagine analogy, or even the feeling of sympathy between creatures, providing a source for knowledge—some uncontaminated epistemology—allowing people to share an animal’s world? Definitely. But, one by one, analogies also reveal the mirror’s opaque side, the confusion within this perceived agreement. (Field 2010, 87)

Despite analogy’s potential to create feelings of sympathy, there’s a word of caution here: while the tool might help humans to approximate the loneliness of an endling, Field’s frequent use of metanarration reminds readers that the bird they are reading has, akin to the concept of species, a Disneyland-like artificiality: “My single body was a tiny spindle falling apart, yet holding this huge thing. It’s hard to write this...clearly...as a character who might seem real” (40). Field’s work thus invites reader to reflect on the “confusions between shared agreements”—the ways in which the dusky seaside sparrow is *not* an astronaut. As Baetens and Trudel succinctly put it, Field’s work “encourages the reader to become aware of the dense and opaque web of linguistic, narrative, and ideological forms and formats that structure and impose, often in very implicit and apparently natural ways, our shaping of the notions of human and nonhuman” (2014, 613). Artifice permeates “This Crime Has a Name”; however, in its self-conscious awareness of this—for example, through the sparrow’s scientific register and metanarrative addresses—Field reminds us that in this instance art does something reality cannot: it enables a transspecies ‘gaze moment’ between human reader and an animal now irrevocably gone.

In Field’s chapter, an individual-collective story, which “doesn’t begin to describe the whole, and yet it’s all you need to know” (Cecire 2019, 121), is created through forms of synecdoche and juxtaposition. For many people, the dusky seaside sparrow was gone in a flash, with the chance for a ‘gaze moment’ lost and relegated to domains of photography and fictional reconstruction. The ‘bird’s-eye view’ of Field’s chapter shows us largeness condensed, a readable face that is self-consciously artificial: space exploration and species-level

extinction in the body of a bird.¹⁸ Yet, as the sparrow cautions us, despite art's capacity to facilitate these 'gaze moments,' 'seeing' isn't the same as understanding and acknowledging. "I get the big picture," the sparrow says, "but do I really understand?" (31).

Conclusion

Using three different short-form texts, this essay has explored the aesthetic and ethical challenges of representing nonhuman collectives. In particular, I've focused on "gaze moments" (Bartosch 2017) that entangle human and animal in shimmering or ambivalent relations. I drew out this shimmer by attending to aesthetic manifestations of what Cecire calls the "flash"—an epistemic virtue which cuts across literature and science in its desire for instant, "big picture" insight. I argued that it is possible to read the literary strategies of fragmentation, we-narration, and synecdoche and juxtaposition in Hershman's, Fowler's, and Field's texts respectively as means of managing multiplicity, as attempts to grapple with the scale and dynamism of nonhuman animal and transspecies collectives. While each of the literary texts employ devices that facilitate the production of a "readable face" from the crowd, I brought together the extremes of Hershman's unreadable (but affective) animal bodies and Field's self-consciously lucid sparrow-scientist to offer a more nuanced consideration of the affordances and ethical issues associated with the flash's desire for knowledge at a glance. Despite each text's use of different strategies and varying degrees of "nonhuman readability," patterning all is an attempt to grapple with tensions between textuality and materiality. This is especially pertinent for literary representations of animals used in experimentation where too hasty an analogy between literary and scientific experimentation might draw a problematic link between textual creation and innovation, and the material creation and modification of 'artificial' bodies.

Theories are tools for explanation and play a fundamental role in how we understand the world around us. The dusky seaside sparrow's question at the end of "This Crime Has a Name," however, puts pressure on a tendency to conflate seeing and understanding. Colloquially we find it in the synonymous use of "I see" and "I understand," but there is also a risk of it in reading too rapidly Armstrong's contention that "theories about things are intimately related to how we look at them" (2011, 175). While seeing might be a fleeting and instantaneous experience, the kind of 'big picture' understanding the sparrow refers to develops when what we've seen is contextualized within broader epistemological, ethical, and experiential networks—networks that stretch

¹⁸ For more on the bird's eye view as a narrative strategy in environmental literature, see Rodriguez 2019.

across both science and literature—and when snippets and fragments are brought into dynamic relation with one another. Epistemological insight, or understanding, is a hybrid picture that flicks between fact and feeling. By drawing these texts together and, more broadly, by bringing science and literature into conversation, I've attempted to sketch the contours of an experimental ecology that makes space for mutual influence, for moments in which "a floating connection can flash into flesh" (Stewart 2007, 67).

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