

Ian Duncan, Berkeley Book Chats, May 13, 2020

Timothy Hampton: Welcome to Berkeley book chats. I'm Timothy Hampton, director of the Townsend Center for the Humanities. Berkeley Book Chats showcase a Berkeley faculty member engaged in a public conversation about a recently completed work. This popular series highlights the richness of Berkeley's academic community. Many of our book chats highlight the innovative interdisciplinary work carried out by faculty and students at Berkeley.

However, it's a rare pleasure for us to host a truly interdisciplinary conversation as we're doing today. The object of today's discussion is the new book by Ian Duncan of the English department, titled *Human Forms: the Novel in the Age of Evolution*, just out from Princeton University Press. Ian will be in conversation with Kevin Padian, Professor of Integrative Biology at Berkeley.

Timothy Hampton: While our professors Duncan and Padian discuss the new book, those of you watching online have the opportunity to ask questions of our guests by using the Q&A function on your student platform. Without further ado, I'll turn the floor over to Ian Duncan and Kevin Padian to talk about *Human Forms: the Novel in the Age of Evolution*.

Ian Duncan: Thanks, Tim. And I just like to begin by thanking you and your colleagues at the Townsend Center for hosting this and to thank Kevin also who's from another part of campus and really has no obligation to come and participate here in the humanities but it's wonderful to have you here and it's one of the great pleasures of being at Berkeley is that borders between fields and disciplines are very porous, and there's a lot of transaction and traffic among them.

Kevin Padian: Yeah. Thank you so much for asking me, Ian, it's a real pleasure and an honor to do this. You and I have spoken about topics intermittently over the years and I was really delighted to get your book and to read it. It's always so nice when the sciences and humanities can get together especially on ideas that are so incredibly seminal and central as evolution is, and it's such a complex subject. Now, you've written previously about Sir Walter Scott's novels, and his work figures prominently in here as well in part along with many other people. Can you say a bit to start about this book, what made you want to write this, what were you looking for? What stimulated you to take this on?

Ian Duncan: Sure, yes. Initially, I thought I would be writing a book on Darwin. That was my intention, and that's still something I want to pursue. But this project was really spurred by trying to make sense of a late novel by Scott. I'm glad you mentioned Scott. He was really the way into this project. Scott, near the end of his life, wrote a very bizarre novel called *Count Robert of Paris* set in Byzantium in Constantinople at the end of the 12th century. It's a novel that was mangled in going to press, Scott was ill. His literally executives and his publisher freaked out when they saw the manuscript that he was sending them, and people have not known how to make sense of it.

Ian Duncan: It's a novel that is set far away from Scotland and from the trajectory of Scottish history that the making, which Scott uses as a way of exploring the making of European modernity in his earlier *Waverley* novels. It's a novel set in

Constantinople and it features this bizarre cast of characters, including non-human characters. There's an elephant, there's a tiger and there's an eight-foot-high orangutan, who understands Anglo-Saxon and has his own strange speech. Trying to get my head around this novel, and looking a little bit into its contexts, I discovered that the early reception of pre Darwinian evolutionist scientific thought in Great Britain took place in Edinburgh, geared towards the work of Jean-Baptiste Lamarck and Geoffroy Saint-Hilaire.

Ian Duncan: Figures who've now become the roadkill in the official narrative of the triumphal progress of evolution theory culminating in the work of Darwin, but whose work was extraordinarily influential and far more diffused in British literary culture, I think than a lot of people have given it credit for until quite recently. Scott was attuned to this work, particularly to the revival of the notion, the so called orangutan hypothesis, which Lamarck promotes, but was before Lamarck, and it's ironically in Rousseau's writings, but also in Scott's own countrymen, Lord Monboddo, on his speculations on human history.

Ian Duncan: The notion that the orangutan might be these mysterious great apes out there somewhere in the peripheries of empire, might be the specimens of natural man that Rousseau called for in his Discourse in the Origins of Inequality, human ancestors or relatives or a human species that had not learned the art of speech. This, I think, is what Scott's novel is engaging and it's setting Constantinople, the great world historical city of late antiquity. A city in which Scott imaginatively dismantles the linear and progressive trajectories of the nation based history that had been the basis of his earlier fiction.

Ian Duncan: Trying to think my way into this novel, I found it giving me new ways of thinking about Scott's earlier fiction, in particular way that what Georg Lukács calls the classical form of the Historical Novel established by Scott, massively influential throughout Europe and beyond, throughout the 19th century, claimed as its premise, the idea of a stable and universal human nature. Scott appeals to that in the introductory chapter to Waverley his first novel, as well as his later medieval romance Ivanhoe and this got me thinking, that this is the premise of the novel as such as a genre, particularly as it begins to reorganize itself and claim a cultural respectability and legitimacy in the mid-18th century, Fielding famously claims human nature as the proper subject of his novel in the prefatory chapter to Tom Jones.

Ian Duncan: Fielding is picking up on statements such as those made by David Hume almost contemporaneously in his Treatise of Human Nature, and then in the Enquiry into Human Understanding. They claim the science of man as the super science, the meta science, the science of all sciences, of the European enlightenment in which all other secular inquiries will be subsumed and will make sense. This is the basis of the novel as such as Fielding claims it remains a claim that gets made over the next 120, 125 years. We see it made at the opening of George Eliot's novel Middlemarch 1872, often taken to be in the critical tradition, the apogee of British, if not European realism. It's a premise a principle that is out there in plain sight and is seemingly so obvious and so boring that it has not attracted systematic critical attention.

Ian Duncan: I thought I would begin thinking about this particularly as it became apparent to me that the ascendancy of the novel towards its becoming the major imaginative literary form in Western Europe by the early 19th century, operates through this claim on a stable universal knowable, human nature at the same time that human nature as a scientific project is going in the reverse direction, is entering into categorical crisis. This begins in the generation after Fielding with Buffon whose great Natural History begins to situate the human among other creatures as

subject to the determining forces of geography and history. Buffon draws back from the implications of this and reinstates metaphysical explanation for why humans are actually absolutely distinct from all other life forms.

Ian Duncan: Buffon had opened Pandora's Boxes [inaudible 00:09:33] and Charles Darwin himself in the Origin of Species where he looks back at his precursors in pre Darwinian evolutionist thought, begins with Buffon and recognizes him as somebody who began to open the subject. What I found was, the question that arises is, well then what differentiates the human from the rest of life once you fully situate the human within this new discourse, natural history? The powerful influential response to that is one that's articulated in a provocative and ironic fashion by Rousseau, but it's taken up by the major thinkers of the 18th century Scottish Enlightenment, by Adam Ferguson, Adam Smith and others, is the notion of development.

Ian Duncan: Humans are the only creatures that have a progress, have a history that pertains to the species as well as to the individual. All other animals, according again to these 18th century scientists develop ontogenetically in their lifetimes. But a lion or a monkey is the same now as it was thousands of years ago, according to these thinkers. The problem of course happens when you get Lamarck and other thinkers extending this developmental principle to the entire natural system. If all natural forms it turns out actually have a history, are mutable over time, develop, mutate into one another, then that human exception disappears and is destabilized.

Ian Duncan: I found myself reading a series of major novels and not only in English, it soon became apparent this would need to be a field of inquiry that looked at German and French developments in part because the major pre Darwinian evolutionist thinking is going on over in the German life sciences and embryology and then in France, but also thinking about key novels works like Goethe's Wilhelm Meister's Apprenticeship, the supposedly prototypical or archetypal buildings from the work that is credited by a lot of critics with reorganizing the novel in the era of European romanticism into its 19th century format where all novels become stories of development, all novels become developmental.

Ian Duncan: What George Eliot and her circle called the developmental hypothesis, an idea that did not just pertain to organic life, but to all human processes to the history of religions, the history of cultures of societies that development type hypothesis becomes the principle of the novel and particularly of the realist novel, as it begins to have its norms and protocols defined and solidified in the course of the 19th century. I find myself reading I think a much more varied and unstable story of the novel in its relation to the scientific developments, and it turned out to be a project that engaged far more with the pre Darwinian evolutionist thinking.

Ian Duncan: Not just from those figures who worked in the natural sciences like Lamarck or Geoffroy Saint-Hilaire, but thinkers like Herder, who turned out to be a wonderful discovery of this project I had not really sat down and read Herder before, who I think emerges as a still under recognized major figure in the diffusion popularization of an evolutionist thinking of the history of the cosmos. His great early work, ideas for philosophy of the history of humankind is translated into English in 1800 and published by the publisher of Wordsworth and Godwin and Mary Wollstonecraft.

Ian Duncan: I found myself exploring this very rich, pre Darwinian legacy of developmental thought, not just within the life sciences, but across a whole range of domains just as those domains are beginning to get separated out and professionalized in

the course of the 19th century and finding myself able to think I think more precisely than I had before about ways in which we can think patiently about the history of the novel in the 19th century without having to reduce it around a totemic form of realism, which is largely being imposed retrospectively on our idea of the 19th century novel by later criticism.

Ian Duncan: To understand exactly what a figure like Charles Dickens is getting at in some of his great novels as alternative ways of thinking about that category realism, rather than seeing Dickens as somebody who isn't a last George Eliot, who can't do character properly and that sort of thing. It's very much a project I think about the novel. Though, I also do make claims for ways in which novels are actively themselves experimental literary and imaginative forms in playing with these debated and controversial, often scandalous ideas and hypotheses that were around at the time.

Kevin Padian: Thank you. I was amazed at your grasp of all these evolutionary and natural historical [inaudible 00:15:19] and all of the very different currents that for scientists today at least are so difficult to parse out. We just don't understand how they were thinking because we don't think that way. How could they have all this evidence for evolution in front of them and not tumble to this idea? But when you go back and you read these people, the degree to which they thought about how to integrate everything is so wonderful that the European transcendentalists alone which I always find very different from the American ones are really... He's trying to find the mind of God through nature. Everything he does is crafted toward putting this together and this is the one of the wonderful parts because your treatises move so nicely between the two meanings of development and evolution.

Kevin Padian: Of course in German it's the same word [inaudible 00:16:26], but in the romance languages and English, whatever it is, as a hybrid, we look at this differently and the transcendentalist that seem to me had this fluid idea of how development really could work with respect to change which you find even in the last gasp of this in England with Richard Owen in, well, most of the 19th century. How do you find that fluidity between the two meanings with evolution and development working for you when you were constructing this book?

Ian Duncan: Right. Yeah, that fluidity is there in the objects of study, so in that sense, I think it was generative, I think. In some ways the key German word, of course, the *Bildungsroman*, the vocabulary of literary criticism is built on, which is obviously not the same. It's allied to [inaudible 00:17:27]. Other words, meaning formation, a term that gets taken over into the German Life Sciences from high artistic discourse in the 18th century. Then it's quite early clamped on to go to his great novel Wilhelm Meister's *Bildungsroman*. I think it's 1819 that Karl Morgenstern gives a lecture where he applies that title to go to his novel and it's stuck. It's become one of those categories that criticism tries to work with and it's not always a useful category.

Ian Duncan: There's a huge debate about whether Goethe's novel actually is a bit buildings from on, whether there is even such a thing. It's one of those terms, the *Bildungsroman* is everywhere and nowhere in the 19th century. That debate I think-

Kevin Padian: [Crosstalk 00:18:19] Is it a conscious movement to construct buildings or is this just what we see in hindsight as people doing this, but not as a concerted movement or reading each other and talking to each other?

Ian Duncan: Yeah, I think Goethe did not use that about Wilhelm Meister's and both the critical view of that particular novel and the way that it gets received and taken up by other novelists turn it into something quite different from the actual object if you read Wilhelm for the first time, with an idea in mind of what it must be like, it's completely surprising the novel is much more wondering aleatory, unfinished. There's no teleological progress towards that the hero's coming into his own and some great moments of realization, some apophatic command of his faculties nor a sense of arrival anywhere. The novel just breaks off, but Goethe is clearly thinking about these developmental categories, how they apply to an individual story of maturation and development.

Ian Duncan: The quest for a vocation or the drifting in and out of possible vocations and larger narrative arcs. Those larger narrative arcs are what tend to get then retrospectively imposed on Goethe's novel and then made programmatic in later novels. Scott again, I think is crucial here because he stabilizes or seeks to stabilize this story of individual personal development of building with a national history. Young Waverley's progress towards maturity. His shedding supposedly of his youthful illusions recapitulates or are synchronized with the movement of Scotland into modernity and to being part of the British state as a governmental process and modernization that is supposed to order regulate and settle the hero's progress. Scott understood that national history as recapitulating a larger species history as it had been codified in Scottish 18th century philosophical history.

Ian Duncan: We find later novelists I think, taking up this plot. Eliot's the interesting one again, because Eliot of all novelists is the one who is most attuned to and most alert to scientific and philosophical developments across the curriculum as it were in Europe. She's intellectually hungry and on top of developments in all sorts of fields. She begins to explicitly integrate these narratives with plots of organic what we would now recognize of organic evolutionary or evolutionist development.

Kevin Padian: Yeah. To me the part of the book that I... You already seized on it, but just the concept of Lamarckian historical romance, it just smacked me, it was such a cool idea. Then you begin this by talking about Count Robert of Paris, as you point out a very strange and end of life novel for Scott. We tend to forget that the orangutan was long known, but the chimp and the gorilla were not really discovered until the 19th century. Owen actually dissected them and described them from zoo specimens in the mid-1800s, but they just weren't known and by the time they were Darwin was able to look at the orangutan and look at the African apes and say, "Well, the African apes are more similar to us, so humans probably evolved from Africa."

Kevin Padian: This genitive thinking, genealogical thinking really is not prevalent with the novelist and the naturalist, it seems to come in spurts and some people have some great insights about it. Huh?

Ian Duncan: Yeah, absolutely. It wasn't even clear what an orangutan was, all great apes indiscriminately tended to get lumped under that name or pongo is the other term of art referring more to the African anthropoid apes. Again, I think that categorical blurriness was generative for novelists, fiction writers. It gave them this space within which to imaginatively roam. I make a passing remark, but it's something perhaps I ought to lean on more heavily which is that Count Robert of Paris and the other contemporaneous novel that I look at alongside it, which is Victor Hugo's novel, Notre Dame de Paris, both novels with of Paris, in the titles published almost simultaneously coming out around the July revolution in Paris,

which I think is also relevant to these speculations. They're almost a science fiction.

Ian Duncan: It's anthropological science fiction and Scott particularly, I think shows how narrow the boundary is or how porous the boundary is between historical fiction and science fiction. If we go back, far enough in time, perhaps things begin to change more radically, perhaps we start encountering life forms that are drastically different from those that we're used to now, including our own life forms. This is a speculation that ranges back into a more remote history in Scott but it's a speculation also that begins to get future oriented in Victorian writing. You get, again I didn't really talk about in the book but in the 18th, from the 1860s onwards really some very anxious attempts by a series of writers to think about human perfectibility in the shadow of Darwin.

Ian Duncan: Does future history actually afford us the sense of a mutant super race, a human super race or not, or something more frightening? We find George Eliot playing with this idea in a really strange late essay sketch that she writes *Shadows of the Coming Race*, but it's all over mid to late Victorian thinking and some of its issue comes in works that we now recognize as science fiction, H. G. Wells and so on. It's a current thought I think that's already at work in many of these novels. Even the ones that seem most programmatically realistic in *Middlemarch* where Eliot really stakes out provincial life as the domain of realist fiction. Human nature is stable, knowable and recognizable if it's within certain temporal and geographical bounds.

Ian Duncan: But even in that novel, there's a weird sense if you get very far out in *Middlemarch*, things begin to be very different. There's the wonderful character, frog faced interloper Joshua Rigg who shows up at one point and there are mischievous hints in Eliot's account of this character that he may not actually conform to what is recognizably human here in *Middlemarch*. It's a joke, you can ignore it if you want to read *Middlemarch* as a canonical realist novel, but it's something that Eliot takes up and runs with in *Daniel Deronda*, which is her great last novel, which is full of startling and astonishing turns of thought precisely about the racial but also species constitution of its characters.

Ian Duncan: Again, I think the strangeness, the weirdness of Eliot is something that again, the critical tradition has tended to smooth over and normalize and part of the project of this book was to recover a sense of the experimental strangeness of these speculations and this is coming back to the point you were making earlier, Kevin, but also how that strangeness is active in these novels. They are a lot weirder, I think, than perhaps we often tend to think they are. They've been calmed and rationalized through teaching and curriculum syllabuses and critical essays.

Kevin Padian: Yeah. There's a lot that's so heterodox in that. Just heretical, despite how many crazy characters there are in these novels, they almost failed to match the characters of the natural historians and philosophers who you're drawing from, they're so varied. You mentioned Buffon, who of course, ran the Natural History Museum in Paris, was actually named account and the king had to create a place for him to be, there wasn't a such place. It wasn't hereditary in his family, of course, and Buffon just wrote these amazing 36 volume of treaties on natural history, and like Aristotle, he just brought everything that people had said, sometimes without really, critically thinking about it. You can find all kinds of ideas in there.

Kevin Padian: He says explicitly that the bounce of species may not be fixed and he was okay with that. That was really all right. Although you're right, he did retreat and of course everyone, the question of humans as a third rail constantly, isn't it? Then

you have Lamarck, who is a madman, and he was so influential, but if you think about his whole system, he was the last person as Pietro Corsi he said, the spirit of the Grand system, which basically would probably say today is a theory of everything that explains everything and nothing at the same time, Lamarck's was fluids. How do you reconcile a guy like Lamarck with such influence over the literary world in such strange ways?

Ian Duncan: Yeah. I wish I had said more about Lamarck or done more with Lamarck who's extraordinary. Again, it's science fiction. That's how we tend to look at it now. It's like, this is the biology of some fanciful, imaginary other alternative universe, but it's wonderful. There's, I think, a real intellectual excitement in recovering, as it were the extinct species, the extinct thinkers who have not flourished and gone on and left a tangible legacy. They have their own fascination and it is the fascination in part of reading works of fiction, that are not bound by a teleological history of winnowing out what's true what's real, but they offer us imaginative space exactly because of that, the space for the sense of thought experiments in action.

Ian Duncan: I think that's what not fiction gives us, and I think that's, again, it's precisely what we now see as the craziness of Lamarck or the contradictions, the excess of Buffon. That are generative in a literary sense and regenerative at the time in a literary sense. My book stops in the 1870s with Darwin and George Eliot, probably because I find that later fictional engagements with Darwin are just less interesting, they become more literal minded as certain scientific canons get fixed and established. It's as if these literary works lose that playful muscle in pushing back against and playing with these conceptions that remain alive in a sense when they're indeterminant, when they're still in play.

Ian Duncan: I think yeah, what we now see is the weirdness of Lamarck, and it is weird. This notion of fluid dynamics as the reality principle of all life forms and indeed all physical nature is wonderfully generative and again, what we would now think of as a science fictional way.

Kevin Padian: I think you've hit on a really important thing about this with Darwin, where you start getting and Wallace, of course, where you start getting natural selection as a principle and a very important principle. What strikes me is this comes so overwhelmingly from Malthus who everybody read in the 1800s. He was inescapable. As you remember, in Darwin's second edition of *The Origin*, he had to include a historical sketch of the idea of natural selection, because so many people had written him to say that they had already thought of it. And in fact, what they had thought was just Malthus but applied to timber or agriculture in the way that Darwin and Wallace extended it to the natural world.

Kevin Padian: Lamarck, you're right, and you know why he fits the premise of your book so well, I think is that when we say fluids, Lamarck was obsessed with fluids from the atmosphere and the oceans and the rivers and the rain, down to the fluids of the body. In each case, these things bring elements of growth and renewal and Lamarck really thought that the blood would bring elements, these fluids that would make blacksmiths stronger and they would pass down these stronger arms to their offspring. Of course, if the blacksmith's arm happened to be lopped off he wouldn't pass that down to his offspring, but there's just this idea that development can make you change and that change is a permanent change that comes in and this was more or less Lamarck's mechanism for evolution writ large. That lends itself really nicely to literary developments, doesn't it?

Ian Duncan: Right, absolutely. Yeah, and to a kind of progressive politics, Lamarck was politically attractive to radical and liberal thinkers for that very reason. Malthus

is, the dismal science, he gets associated with a rather grim strain and political utilitarian political economy somewhat later. Tends to be invoked [inaudible 00:33:44] the case that limits the horizons of possibility and possible thought.

Kevin Padian: Yeah, but he's all about survival and adaptation, isn't he? Because it's the things that make you survive, even though it seems like he's railing against the poor, he's really trying to get them not to reproduce so that they don't achieve more misery, at least in his view. But he also says that although we keep scoring on the Irish, less so on the Scots, but he will say that even trades, even the lowly poor tradesmen, if he's adapted to a profession, he'll survive and grow and he'll be able to sustain himself. These things to me work in the kinds of novels you're talking about, about ways of surviving and changing and adapting to what changing circumstances are, you bring out this historical aspect that wasn't there before.

Kevin Padian: We can think of so many novels and plays in which people change and then they don't change. In *Pilgrim's Progress*, does he change? In the Henry trilogies of Shakespeare, does he change? Do you have the same person? Do these people learn anything? This is a really interesting development you bring into these novels and of course... Well, anyway, go ahead with those because those were great exam...

Ian Duncan: Yeah. Bunyan, its change comes from... It's God's grace, and it's once and for all, rather than gradual and self-powered. That would be the difference between not just Bunyan's allegory, but earlier narratives based on Puritan providential plots, where the change tends to be from absolutely from one state to another. Yeah, Shakespeare, it's really different. There is a notion of education, the education of a prince, which is a genre, a Renaissance genre. Again, what changes I think from the mid-18th century onwards is the notion that change as neither requiring supernatural intervention nor just confined to the human exception to privilege individually.

Ian Duncan: It's seen as a spontaneous, organic and indeed molecular principle, not just that organic life, many people like Herder begin to break down the boundaries between the organic and the inorganic. That seems to be the crucial difference and because it's spontaneous and self-generating, it begins to break free from teleological plots. This process of development become ongoing, open ended, emergent and that seems to be the crucial difference.

Kevin Padian: Now I understand why you don't include Hardy in your study because Hardy is so Darwinian.

Ian Duncan: Right, yeah.

Kevin Padian: In a way he gets everything that Darwin is saying, but he's not in that pre Darwinian world at all. That's a very good contrast.

Ian Duncan: Yes, and Hardy's been written about so well by yourself and Gillian Beer in her great book *Darwin's Plots* which really inaugurated the movement of thinking about Victorian natural history and Darwin in particular in relation to literary works in particularly the novel. Beer's by making Darwin a central figure, Beer is thinking about George Eliot and Hardy as her main case studies figures as you say, who are much more thoroughly immersed in certainly by the time Hardy is writing, Darwinian principles have become more or less canonical. Though still contested, and he's able to take on board the full force of Darwin's theory because it takes Eliot a while I think too and as Beer comments to really catch up within

process the full force of the principle of natural selection when she first reads Darwin, the Origin of Species with George Henry Lewes, 1959.

Ian Duncan: She assimilates him to the broader development hypothesis, which is still in some senses Lamarckian or grounded in the sociological progressive models of people like Compton. It's progressive, it's implicitly perfectionist, it's this constant advance from simple to more advanced and complex organic states, it's still susceptible to progressive narratives of rising or ascent from the simple to the complex.

Kevin Padian: Yes. You devote a good part of your book to Dickens, of course was such a favorite among Victorian, whereas Dickens, of course, was greatly influenced by Malthus.

Ian Duncan: Yeah.

Kevin Padian: The workhouses of course, was great social crusader, but the interesting thing is, I don't think he was known to Darwin, but he was friends with Richard Owen who was Darwin's great nemesis?

Ian Duncan: Right. Absolutely.

Kevin Padian: I can't imagine two more different people than Dickens and Owen but can you tell us a bit about how Dickens figures into all this?

Ian Duncan: Absolutely. Dickens, we know read Robert Chambers' Vestiges of the Natural History of Creation, which was the work that really popularized pre Darwinian thinking. The book is a rather incoherent synthesis is probably to kind a word, it's bricolage of various transformist ideas and speculations circulating in Europe from the Laplace Kant Nebular hypothesis to the work of people like Geoffroy Saint-Hilaire and Lamarck's in there even though Chambers feels that he has to refute Lamarck. It's a rather incoherent attempt to tell the history of the cosmos according to an evolutionist argument in which indeed humans arise from prior life forms. It was as John Secord has shown in a very influential book that came out about 15, 20 years ago, it was massively popular.

Ian Duncan: It sold in numbers to rival Dickens's novels, and Dickens himself read it and refers to it, praises it for popularizing scientific ideas, a review that he wrote. We know that Dickens knew that work. Chambers as part of the scientific establishment that Port... Sorry, Owen was part of that scientific establishment that [inaudible 00:41:03] on Chambers that these speculations were ungrounded, they were a science fiction, not science. It's interesting to find Owen himself adopting Chambers' hypothesis of species change in his famous Edinburgh review of the Origin of Species in 1860, Owen admits that a transmutation or transformism, but says that natural selection is not the mechanism.

Ian Duncan: He says it's something like the hypothesis that Geoffroy and Isidore Saint-Hilaire proposed, which is that it's through the mutation, the defamiation of embryonic development.

Kevin Padian: Yeah. It's like the teratology.

Ian Duncan: It's teratol... Exactly.

Kevin Padian: That you point out that [inaudible 00:41:52] meaning that it's a warp development, isn't it?

Ian Duncan: Right. All species are originally monstrous deformations of embryonic development according to influences of heat atmosphere, etc. Owen interestingly proposes that quoting Chambers in his review of *The Origin* and my reading of Dickens in *Bleak Houses* and overlay look at, but one could look elsewhere is that this was a model that Dickens took really seriously and I think it provides a natural historical and scientific framework for the very famous effects of the Dickens character system. Dickens's novels, people have always complained since they were first published. They don't give us a natural or real world. They give us an unnatural world full of monstrosities and grotesques. *Bleak House* is so striking I think, because you can see all these little in-jokes where Dickens is playing with early evolutionist theory, recapitulation theories at various points in the narrative.

Ian Duncan: Dickens is as an evolutionist, but not a Darwinian one. The novels don't work according to the Darwinian notion of a very, very gradual incremental development winnowed out by natural selection. Instead, we have these saltationist model of sudden changes so that within a Dickensian family, you seem to have these completely different creatures these different life forms that really challenge the basis of what we understand by the human or by human nature.

Kevin Padian: Any events come out of the blue to change your life completely.

Ian Duncan: Absolutely. Yeah.

Kevin Padian: Coincidences and tragedies and catastrophies.

Ian Duncan: Right. The great spontaneous combustion at the center of *Bleak House*, yeah.

Kevin Padian: This is Owen who, of course, almost no one knows, he died in 1892 and by that time everything that he knew had been eclipsed for decades. Darwin pretty much destroyed Owen's world very quickly, as well as 150 years of morphology thinking about form and function dialectics. Darwin said it's all a variation and selection, it's build on ancestral plant. Exactly.

Ian Duncan: Right.

Kevin Padian: One paragraph at the end of chapter six of *The Origin*, which has nothing to do with the rest of the chapter. He just annihilates this whole thing. For Owen who was such a strong morphologist, anatomist and transcendental thinker in a very funny way, wasn't... For him, his views he wrote so vaguely, no one could make out what he said. Huxley just mocked him incessantly and ordained becoming of beings and he believed as you're pointing out, that as early appeals Lamarck had thought that there is developmental variation that in an ecological setting can be acted upon, realized. But even now, we're using completely anachronistic words to describe what they thought. You just can't even get there.

Ian Duncan: Yeah. You mentioned Pietro Corsi's work, who writes about Lamarck and he's been probably the major figure in recovering Lamarck as an interesting complex figure and what he calls Lamarckism. He points out that there's all these other early transformist thinking across the European continent, which gets lumped together under the sign of Lamarck, but is often independent, quite different. I think we need more of that and Owen would be a prime case for just recovering

this body of thought and reconnecting imaginatively with it. Darwin's prestige is such of what used to be the great triad of 19th century scientific authorities looming over the following century. Freud, Marx and Darwin. He's the one who's scientific authority within the scientific fields to which he spoke because he seems to remain unchallenged or if challenge chipped away at the sides. That just meant-

Kevin Padian: He's the Anthony Fouché of 19th century.

Ian Duncan: Right. Yeah, I wanted to ask you that other figure may correspond with. But yeah, these other figures have been completely eclipsed. Gone extinct in intellectual history and I think it's really a fascinating, actually necessary project to recover those full worlds and re immerse ourselves in them. Partly because of their difference because they do not conform or they get us away from the presentist narrative of history in which everything tends inevitably towards where we are and what we think. I think we need that more than ever, that openness to alternative ways of seeing the world even when they may not be scientifically valid or even precisely articulated as you're saying if Owen...

Kevin Padian: Yeah. Before we get to any questions, what do you still want to do with Darwin?

Ian Duncan: I want to write about Darwin in his own terms, but reading him as a complex literary figure. The book, which would be a short book and there's an article coming out actually I'll make a plug for it in the representations this coming summer. It's on aesthetics and this has actually attracted a lot of attention recently. There's a wonderful, huge book on sexual selection, by Evelleen Richards on the Genesis of Darwin's sexual selection theory, which is rather being in the shadow of natural selection. Then, on farther works paying attention to this, and understanding the central place of the aesthetic sense in Darwin's account of human evolution. I'm interested in that.

Ian Duncan: I'm interested in the ways that for Darwin himself, scientific knowledge, scientific observation and knowledge are continuous with what we think of as aesthetic modes of apprehending the world, of apprehending form in the natural world and discriminating among the interplay of forms within a system. That's a quintessentially aesthetic practice. We see it at work in earlier thinkers and indeed acknowledged as such. For example, in the work of Adam Smith who just comes to mind because I was teaching him in a course this semester. He talks about the love of system, the beauty of system as actually the motive power for projects of political and economic improvement at one point in the wealth of nations.

Ian Duncan: I'm interested in connecting Darwin with a larger intellectual and philosophical history, which isn't just one confined to the natural sciences, but also reading the works and the ways in which he's engaged in all sorts of genres and discourses. I'm very interested in the early writings that come together in the so called Voyage of the Beagle where Darwin is trying on the styles of the 18th century travel writer. It's all still a bit hazy bits of it are becoming clear, but that's where I would like to go with that.

Kevin Padian: Well, I hope we'll have a chance for a lot more conversation on this and-

Ian Duncan: Absolutely.

Kevin Padian: ...you're right, they all loved Humboldt, didn't they?

Ian Duncan: Humboldt, massively interesting.

Kevin Padian: We've had nearly 90 participants. They're all still here pretty much, but we have only one question so far and it comes from Tim Hampton. And he writes, "Ian after listening to you two, I can't wait to run and read strange writers like Buffon and Lamarck." He doesn't realize how strange they are. "You make them seem interesting. Are there novelists or novels that we might not normally read, but that we can now take more seriously after your work? Can we rethink the novelistic cannon?"

Ian Duncan: Yeah, I would hope so. The book looks at really major canonical works and that was part of my intention, was to make the case that this way of reading the history of the novel can be articulated around some of the very famous landmark works in the critical history from Wilhelm Meister through Scott to Dickens and George Eliot. The case I would want to make, figures like Dickens and Victor Hugo who tend to be outliers in a sense of the history of the novel is dominated by the rise of realism. But if I live, it's this great tradition. It goes from Jane Austin through George Eliot to Henry James. And James of course, becomes the figure around whom modern novel criticism constellates itself in James's work probably because James himself is theorizing what he's doing in very powerful ways.

Ian Duncan: And James was no lover of Dickens. He wrote these famous acerbic reviews early in his career of Dickens's late novels. One thing I would want to do is make the case for why Dickens is actually as rigorous a novelist in the kinds of world building that he's doing as George Eliot is. The same goes for Hugo, again, much condescended to the bombastic, flamboyant, outrageous Hugo who isn't part of that line of the novel that goes from Paul Zech to [inaudible 00:51:52] to [inaudible 00:51:52]. Though, a lot of Paul Zech is very Hugolian. If I were to do the project again, I would want Paul Zech front and center. I think he's incredibly an interesting figure in light of this, but he's scarcely a neglected novelist.

Ian Duncan: The one outlier among the case studies I talk about is that late Scott novel, which nobody reads or nobody has read until very recently. Or if they read it, they throw up their hands in bafflement. Reading that novel makes Scott a much more complicated and interesting figure than people tend to take him. That's not a very satisfactory answer, and I would have to think a bit more about outliers who might suddenly begin to glow with all sorts of unaccustomed light if we were to turn on [inaudible 00:52:40].

Kevin Padian: Yeah, you're certainly asking us to read what we've offered already read in a different way, which is probably the best service that can be done. How many gems hiding under a bushel like Count Robert, can you find? This is good. I think maybe Colleen might've wanted to answer this question. Colleen, did you want to unmute and go ahead? Okay, well maybe not.

Colleen: Go ahead.

Kevin Padian: There she is.

Colleen: You can go ahead, Kevin. Thank you.

Kevin Padian: You sure? Okay, fine. I'll get to the other questions then. Lucy Jacobs Ritz says, "Hi." Hi Lucy. And says, "In what way would new insights from other forms of transmission of traits like epigenetic gene culture evolution might be related to

the ideas of Lamarck and Owen?" And she asks, "Is there a 20th or 21st century equivalent of a scientific cannon shaping the novel?" These are good questions.

Ian Duncan: Yeah, that's a great question. You'll probably be able to answer better than I am. Yeah, some of the vulgar popular accounts of epigenetics, which is not the same as epigenesis, this 18th century evolutionist way of thinking about the life sciences have seen it, have invoked the shade of Lamarck. Acquired characteristics it seems what the experience of an organism in its lifetime can affect its biochemistry in ways that are then heritable. That's taking such a broad view or broad account of what Lamarck or Lamarckism is that, I'm not sure that it really connects with Lamarck's thought. Yeah, I think we are seeing a lot of contemporary fiction that's responding to current scientific ideas. Some of it in science fiction proper...

Kevin Padian: Or dystopian.

Ian Duncan: Right, or dystopian or the current movements around notions of the post-human and the Anthropocene and fiction again, is trying to think our way out of that in ways that aren't always convincing. Novels remain artifacts produced by human beings. I'm reading right now but with very mixed feelings Richard Powers' novel *The Overstory* which is immense long thing and I'm about halfway through and I wish... It's about trees and part of its remit is that tree is the original Edenic beings before the fall operating in slow time, but able to communicate and think in ways that are largely accessible to humans until very lately. I wish that Powers had just gone ahead and written a popular book on current tree science and that actually more interesting than the novel, which gets bogged down and is rather uninspired. At least I'm finding them so far human plots.

Kevin Padian: Yeah, it's been probably *Jurassic Park* fits our side guys a little better than that.

Ian Duncan: Right.

Kevin Padian: Thank you, Lucy for these questions. Nicholas Matthew writes, "Apart from his work on natural history, Buffon was probably most famous for his essay on style. I suppose the style concept has always been balanced between nature and culture, human and nonhuman body and tool and so on. I wonder what the relations might be between literary style and contemporary natural history." Wow.

Ian Duncan: That's a great question. Yeah, and Buffon at the time was criticized for his stylistics, that he was importing so called literary styles and modes of analogical reasoning and so forth and conjecture into his natural history. Yeah, he writes his essay on style partly as a defense. That's such a great question. I'm not sure I can answer it. Of course, it goes along with the notion of style as somehow that's something personal, like an expressive emanation of a particular author as well as that, which is supremely crafted and the effect of culture and convention. It's scientific writing. Now again, you could probably answer this better than I and if we were to move out of the thriving realms of popular scientific writing in which of course, again, this is something I've been thinking about recently in relation to thinking about Darwin.

Ian Duncan: The way that this genre, the natural history of man that gets invented in the late 18th century. Where the protocols of natural history are addressed to telling a story of the human species as a subject. That's still going strong. It's ragingly popular. Yuval Harari's book *Sapiens* is being touted by the guardian as one of

the hundred best books of the 21st century. There's another book in that genre just been published called Humankind, I think by a Dutch author. I forget the name, I just reviewed it yesterday. These are really works popularization rather than of scientific inquiry per se. The relation between those I think is really interesting. It was a much softer border or the relation between those was much less clear in the 19th century.

Ian Duncan: Darwin writes the on The Origin of Species on the descent of man for a general Victorian being public. It's not like his essays on barnacles or coral reefs orchids that are more-

Kevin Padian: Yeah, I think you make a really great point that when some scientists or quasi scientists are writing and interpreting science for the public, it really is quite a borderline with the science fiction like Jurassic park or contagion or the kinds of things that really are what good science fiction is just a slice away from what we know or can grasp at the moment. This is a great question. [inaudible 00:58:34] sorry, [inaudible 00:58:37] John writes, "Ian, may I ask a perverse question about the role of poetry and the shifting role vis-a-vis the novel. Are there ways in which these questions about evolution, natural history become present in the evolution of poetry over the course of the century?" Now of course we have to start with Darwin's grandfather.

Ian Duncan: Right, we must.

Kevin Padian: The loves of the plants, which was seen as very salacious at the time and both full circle from our opening today. Darwin's grandfather was very Lamarckian and very much a part of that Scottish English Renaissance.

Ian Duncan: Right, the Lunar Man.

Kevin Padian: Yes, the Luna Men.

Ian Duncan: Burning of enlightenment. Yeah, that's a great question and perverse questions are great, and actually, that's not a perverse question at all. Actually, the relationship of poetry to this has actually been much better studied. There's a lot of great work being done on Erasmus Darwin by my colleagues here at Berkeley by Amanda Goldstein and Kevin Goodman and Devin Griffiths, his recent wonderful book, The Age of Analogy opens with Erasmus and closes with Charles and has really interesting things to say about them. The other point of reference here that's been very well known is of course Tennyson and the physical evolution stances of in memoriam, which again are based on Tennyson and his reading of Chambers, the work is pre Darwinian.

Ian Duncan: So yeah, I think quite a lot of attention has been paid to poetry, and the other critical work I would cite here is more in McClain's wonderful book Romanticism and the human sciences which is mainly about Wordsworth Coleridge and Percy Shelley, but has a fantastic discussion of Frankenstein in relation to Malthus and perform and emerging biological conceptions of natural history. This is of course a period in which the novel begins to incorporate and respond to poetry, especially lyric as one of the ways formerly and majorly in which it's reorganizing itself around the turn of the century. The key figures here I think would be Goethe and Scott who interpolate lyrics into Wilhelm Meister into Waverley in ways I think that I'm making really interesting claim on lyric poetry by the novel in ways that Scott is historicizing it in really interesting, complicated ways. Goethe is doing something quite different.

Ian Duncan: Yeah, I have not thought about how the... Pardon me. Your question is really about how the history, the poetry as a developmental narrative itself might be inflected by this, and frankly, that's not something I've thought about. It would be a great question to pursue McClain's thesis, which is the powerful one is that three words with and Coleridge and their contemporaries poetry particularly what M. H. Abrams called, The Greater Romantic lyric becomes the genre that reclaims human language and the human faculties for the human in the era where the category of the human is felt to be existentially under threat.

Kevin Padian: We're having so much fun. There is one more question, if we can be indulged from Penny Fielding, "Your book ends with the intriguing idea of Eliot as a science fiction novelist in a decade before science fiction emerges as a novel form. After this apparent bifurcation and genres in the 1880s, what later realist novels would benefit from being read as science fiction?"

Ian Duncan: Yeah, that's a great question, and maybe harder to answer because the 1880s of course, you have education acts and therefore a proliferation of what we now recognize as the genres of popular fiction. They really consolidate from the 1880s onwards, which means that the realist novel or the literary novel itself tends to get cordoned off from these popular genres and the quarantine borders get harder and harder. It would be interesting to think of some of the experiments of high modernism in relation to this. Someone like Wyndham Lewis actively does his weird and all but unreadable experimental novel *The Childermass*, which is a weird modernist, satirical dystopian redoing of Dante's *Divine comedy* which he writes 1920s or '30s, and then picks up again in the '50s as a science fiction novel.

Ian Duncan: And the last two volumes of the *Human Age* are much more recognized as the Danteisk afterlife as a nightmare science fiction landscape. Certainly, there are novelists who've moved between the genres. Doris Lessing would be famous, and of course, that would be a primary example and her series of science fiction series rather, I think that her critics did not know what to make of this or thought of this as perhaps a rather regrettable move away from her strengths, even though this was a move that Lessing herself took very seriously. I think a lot of recent fiction has... Pynchon, Thomas Pynchon made another great example, that the boundaries between so-called mainstream fiction and science fiction become very porous.

Ian Duncan: The way that a pulp writer like Philip K. Dick has been mainstreamed and literary theory and criticism by people like Fredric Jameson, [inaudible 01:04:21] and in turn pensioners, there's a huge amount to Dick and other pulp writers. I'd say it's easy to do now. It's perhaps more of a problem from, say, the generation of Henry James on to the 1940s. Another great actually recent masterpiece hybrid masterpiece [inaudible 01:04:48] to graze novel [inaudible 01:04:49]. Great experimental Scottish novel in the early 1980s that shifts between a more or less realistic buildings from on [inaudible 01:04:59] and this again, science fiction, afterlife imagination of a kind of alternative plus through which the characters pursue the unhappy pilgrimages.

Kevin Padian: Well, this has been amazing. I've just enjoyed this so much and just your scholarship's incredible and just all the things you explore in this book and in our talk today are wonderful and I'm so grateful for the opportunity to be able to talk with you about this, and also to Tim and Colleen, the people from Eric and the people from the Townsend Center, and of course everyone who tuned in and stayed so long clearly enjoying things, which I never expected it would actually go this long, but there we are and thanks to everyone for participating. Now, I've forgotten how we're going to close out. Colleen and Eric, anything more to say or do we just end the meeting?

Colleen: We just end, and thank you both so much.

Ian Duncan: Okay. I would like to just reiterate my thanks to everybody and especially to you, Kevin. Thanks. That was one tweak in generous and generative interlocutor you've been.

Kevin Padian: It's a huge pleasure. I'm not making any threat to Terry Gross, but we had a good time and that's what matters. Thanks to everyone.

Ian Duncan: Thank you.

Timothy Hampton: We hope you enjoyed this Berkeley book chat and we encourage you to join us in person or via podcast for future programs in the series.