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**“The Turbulent History of Bringing
Anthropology to Life in the United States”**

REVIEW

John P. Jackson Jr. and David J. Depew,
*Darwinism, Democracy, and Race: American
Anthropology and Evolutionary Biology in the
Twentieth Century*

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I. Introduction

In the wake of WWII, the United States countenanced key discipline-altering ideas in biology, psychology, sociology, and anthropology. Not only were all of these disciplines in the midst of embracing an on-going mathematical “statisticalization” of their respective disciplines (Fisher, 1953, Salmon, 1971, and Gigerenzer, *et al*, 1989), but they were also navigating a new population-genetics-Darwinism onslaught in the face of lingering pre-genetic Darwinian and non-Darwinian thinking (Porter, 1986 and Stigler, 1986). One outcome of these upheavals of thought is that many technical concepts unique to these disciplines required re-evaluation. Another set of consequences is the disciplinary boundary disputes that emerged from cross-disciplinary bickering (and in-house disciplinary spats) over the proper meaning and relevance of technical concepts *and* the socio-political fallout of how these provisos should be disseminated to a largely unwitting United States citizen body.

In their recent *Darwinism, Democracy, and Race*, Jackson and Depew have produced what must be viewed as a refulgent recitation of this intriguing academic saga. Not only does their analysis recognize and braid together the philosophy of biology, theories of race, culture, and rhetorical analysis, but it also includes practical politics in order to explicate how the burgeoning forte of anthropology emerged into the mature and established discipline it is today. As a way of making access manageable into this knotty intellectual history, the disciplines of Evolutionary Biology and Anthropology take center-stage in their analysis; that is, they tell us that the scope of this project ranges over “an episodic history of a particular line of argument that arose at the intersection of population-genetic Darwinism and Boas’ approach to anthropology” (p. 18). Indeed, their goal is to assist readers in making sense of “three generations of closely affiliated scientists whose interdisciplinary efforts consciously contributed to the post-racist democratic pluralist politics that

stands in need of defense today” (p. 14). Specifically, Jackson and Depew unweave this “academic rainbow” via a *habile* critical investigation of the efforts of the following prominent and influential scholars: Franz Boas, Alfred Kroeber, Theodosius Dobzhansky, Sherwood Washburn, and Carleton Coon. Ultimately, this unweaving, argue Jackson and Depew, will lay bare their claim that the mid-twentieth century “new Darwinism” and its concomitant updated rendering of natural selection *cum* population dynamics, which was ushered in by American biologists *and* welcomed by American anthropologists, are “congenial to racially and culturally pluralistic democratic institutions” (p. 3).

II. Franz Boas

In the late 19th century, along with the Lamarkian theory of acquired characteristics, the Hegelian notion of “progressive development” took hold of German biologists, like Ernst Haeckel (some of the historical background can be found in Depew and Weber, 1994).

According to Haeckel, there is a predictable unfolding of life such that environmental influences in one’s lifetime would engender an improved level of existence for the next generation. The same way that ontogenetic development reveals a predictable advancing pattern, Haeckel argued that this same sort of foreseeable sequential unfolding could be found both in phylogeny and human cultural evolution (traces of this sort of link between ontogeny and phylogeny can be found in some recent defenses of developmental systems theory; see ch. 3, Ananth, 2018). What this means is that both biological and social change take on a “determined” stair-step path such that each step is a necessary stride (with the help of necessary environmental influences) to the next phase and each “higher” phase is superior to the period that came before it. So, not only is, for example, the modern horse (e.g., thoroughbred) a necessary and superior end-state of its previously related common ancestors (e.g., *Equus*, *Merychippus*, and *Miohippus*), but also both a fully developed human baby is a necessary and superior end-state with respect to its earlier stages in fetal development *and* modern human cultures are also a near-necessary, expected, and superior result with respect to their earlier forms of human culture. Haeckel’s bio-social evolutionism interpretation, which included drawing upon Charles Lyell’s uniformitarianism (geological processes that shape the earth are unremitting and invariable through time), was not only embraced in Europe (e.g., Tylor, 1867, and 1889), but it was also endorsed in the United States (e.g., Powell, 1887). In terms of human and cultural evolution, Jackson and Depew tease out the following five principles endorsed by these Haeckelian-type thinkers:

1. There is a scale of human evolutionary development that runs from savage to civilized.
2. The units of this scale are races.
3. Advance along the scale is, in the absence of constraint, predictable: The same inventions, modified to fit particular environments, can be expected spontaneously to emerge in the same order.
4. The more savage a race the more instinctual and less rational its beliefs and behaviors.
5. If a race fails over time to advance there must be inherent defects in its hereditary material. It must be degenerate. (p. 34)

This Haeckelian “stadial” view and its five-point fulcrum (**5F** hereafter), as described by Jackson and Depew above, form the background in which the putative father of American Anthropology and cultural anthropologist, Franz Boas, finds himself. Boas resisted this stadial framework and its **5F** fallout. His response can be understood in terms of his critique of the attempt by high-ranking United States museum curators (e.g., Otis T. Mason and John Wesley Powell) to organize anthropological findings in a stair-step fashion; the implication being that the European “races” represent the highest teleological rungs of the ladder, while native “races” (these usually refer to Africans and, *ipso facto*, African Americans and Native American Indians) represent the early and/or inferior/degenerate steps of human cultural evolution.

Conceptually, Boas resisted this museum-style Haeckelian anthropology and its **5F** underpinning (mostly defended by Mason) with a three-prong defense that included: (i) empirical, (ii) philosophical, and (iii) evolutionary spikes. Empirically, Boas, drawing upon his own statistics-oriented physics training (Staley, 2012 and McGowan, 2014), required near-impeachable empirical evidence from his disputants in order for them to justify their claims. Philosophically, extracting from his own anthropological studies, he endorsed the proposition that similar effects can be produced by different causes (multiple realizability; **MR** hereafter). Biologically, Boas defended Darwinism; specifically, he urged that, unless there exists inexorable evidence to the contrary, it is variation and modification of *all* phenotypic features (i.e., plasticity) that captures the hallmark of being a true Darwinian.

Armed with this argumentative trident, Boas went to work on his interlocutors. To illustrate, consider a village-type carrying appliance, like a woven basket. According to some of the museum-minded anthropologists, like Mason and Powell, the causes that account for the creation of such an appurtenance must be the same across woven-basket-creating cultures. Importantly, the museum display cases must represent this shared causal framework across these different cultures so that

the Haeckelian-type stadial rendering is made manifest to the viewing public. Boas balked at such a decision, employing two skewers of his argumentative trident. First, he demanded that Mason provide the data set that actually shows that the similar cross-cultural artifacts actually have the same causal factors. Observing that Mason and his supporters could not meet his empirical standards, he then proceeded to thrust his **MR** prong at his museum-minded scholars as part of his rebuff. Here he is pointing out that it is eminently reasonable that the production of an artefact (e.g., a woven basket) could have been fashioned for the sake of numerous unrelated causal needs (e.g., gathering and storing crops, appeasing the gods, decorating for social/artistic functions, etc.) or different combinations of causal factors. Notice that these possibilities constitute distinct and reasonably unrelated causal elements that could have contributed to the production of similar appearing artefacts (like the woven basket) across cultures. The upshot is that Boas offered a staunch challenge to these stadial-thinkers requiring that, on a case-by-case basis, they offer compelling evidence to repel his **MR** safeguard. No such credible evidence was proffered. The further implication, given Boas' criteria, is that the efficacy of the **5F** foundation upon which these "stadialists" relied is rendered unstable.

Yet, what support does Boas have for taking **MR** seriously? In part, the answer, which might be surprising to some scholars, is a specific rendering of evolution. Again, drawing upon both his staunch empiricist standard and own work on brain and head measurements, Boas claims that evolution reveals that *all* biological traits are malleable (p. 49) and he extended this to variation in cultural forms. Specifically, not only is the body subject to the vagaries of evolutionary forces, but the same can be said for cultural phenomena (Lewis, 2001). So, in the same way that adaptations are adaptations to local environments with respect to physiological traits, so too thought Boas for cultural productions. From this perspective, evolutionary plasticity with respect to anatomical features directly influences a kind of evolutionary cultural plasticity as well (p. 49). This is why Boas can boast the truth of **MR** and correspondingly why it helps to make sense of similar cultural phenomena, like a woven basket, having unique and not necessarily overlapping functions.

Although there are numerous implications and applications of Boas' interpretation of evolution that cannot be elaborated here (e.g., cephalic index, Lamarackian heritability, Hitler's ethnic cleansing agenda, etc.), it is his views on race and democracy that will be targeted. Primarily, Boas was quick to attack the burgeoning eugenics ideology that was eroding the democratic ideals largely assumed by the American public. In an attempt to extinguish this Nazi-imbued eugenics movement and the corresponding racism that came along with it, Boas put forth the following principles for public consumption (pp. 51-53):

- i. There are no pure races because the mixing of human populations is a fallout of the mobility of human populations.
- ii. Contrary to essentialist thinking, racial markers are not statistically linked to other traits.
- iii. Greater phenotypic variation is present within populations than across populations.
- iv. Fitness is not hampered by interracial marriage.
- v. Since humans are apt to mate despite various cultural restrictions, mating practices reflect self-imposed restrictions that can vary over time. This suggests that humans are more like different variations of rabbits than any notion of distinct species.
- vi. The implications of v are that ‘race’ would apply more accurately to inbred caste-like reproducing populations and that such reproducing populations are the exception and not the norm.
- vii. Enculturation patterns are more reliably transmitted across generations than racial markers.
- viii. The overall conclusion that follows from i-vii is that a racial hierarchy with “whites” at the top and “blacks” at the bottom makes no sense.

Given the truth of i-viii above, one can understand Boas’ disdain for the **5F** defense of the stadialists. Indeed, if Boas’ account is accurate, then **5F** is rendered quite moribund; for since there are no pure races, statistics governs genetics, and **MR** is on the mark, it reasonably follows that talk of a cultural scale wherein race is the measure, belief in a sharp demarcation between savage/degenerate and civilized/advanced, and an insistence on less rational vs highly rational cultures are deeply ill-considered and politically irresponsible. No doubt, we can understand Jackson and Depew’s conclusions in what can be considered (from Boas’ perspective) a slapdash effort by his opponents: (1) Those who argue that Boas was not respectful or embracing of Darwinism are misguided; rather, Boas rejected the “old-school” stair-step version of Haeckelian Darwinism that was baked within the **5F** framework and embraced the burgeoning statistically-oriented population genetics Darwinism that would soon dominate evolutionary thinking. (2) The vision of democracy that Boas was trying to spread to his readers includes “racial” equality and cultural pluralism that both tolerates and embraces sub-population differences.

III. Alfred Kroeber

Taking the anthropology baton from his teacher and mentor Boas, Alfred Kroeber established himself as the architect of the discipline of anthropology in the United States. Indeed, Jackson and Depew stress that Kroeber's "self-imposed mission was to establish, protect, and grow a Boasian four-field anthropology department at Berkeley..." and that "he hoped to drill its value-laden implications into public consciousness." [p. 61] With the intent of cementing disciplinary autonomy, Kroeber had to introduce a way of locating a unique space in which the anthropologist—and only the anthropologist—could navigate. This space, which he called "the superorganic," had to be a dimension that was off limits to other disciplines, especially the encroaching fields of biology and psychology. What was Kroeber's solution? The answer is his promulgation of the "superorganic" as the correct conception of culture. Put a bit more philosophically, the superorganic could be viewed as a kind of supervenient/emergent "linguistic state" that is the product of biology and psychology, but is *irreducible* to these areas. To be sure, according to Depew and Jackson's reading of Kroeber, cultures are these irreducible superorganic entities that are "relatively integrated meaning and value-laden wholes" (p. 63).

Not surprisingly, both the cultural reductionists (e.g., Wundt and Haeberlin) and individualists (e.g., Sapir, Boas, and Goldenweiser) were quick to demur with respect to what they regarded as Kroeber's "mystic" notion of culture. The primary concern from both these camps is that Kroeber's superorganic concept of culture exposed unwarranted ontological baggage as part of his appetency to elevate the discipline of anthropology. The implication is that the reductionists and individualists viewed the superorganic as the creation of culture as a unique causally efficacious collective object (p. 78); the kind of object that possesses causal powers which not only scream of explanatory obfuscation but also welcome the sort of academic japing that would ruin the growth of the very discipline Kroeber was trying to bolster (see Ananth, 2010, for a philosophy of mind version of this same sort of tension). For instance, this is clearly the sort of worry that the statistically-minded Boas had of Kroeber's position—it violated both his empirical and evolutionary tenets noted above.

In an attempt to deterge this messy and long-standing wrangle, Jackson and Depew point out that the ontological worries that have been driving Kroeber's colleagues and disputants to criticize his superorganic conception of culture have been misplaced. Rather, they underscore the point that Kroeber had no real interest in these metaphysical concerns (p. 79). Rather, he was more interested in creating an epistemic framework in which cultures can be understood. For Kroeber, explain Depew and Jackson, this means that cultural patterns can best be grasped when juxtaposed with other cultural patterns (notwithstanding his respect for the modern synthesis, p. 90 and his status as a possible predecessor to contemporary dual-inheritance think-

ing, p. 91). It is the task of the anthropologist—and *not* the biologist, psychologist, nor the cultural functionalist—to engage in this sort of cultural pattern comparison that captures this discipline’s unique mandate according to Kroeber (p. 84). Even if this epistemic framework proved to be at odds with both Boas’s statistically oriented trait-plasticity perspective and White’s (1943) pre-Darwinian thermodynamic cultural evolution account, Kroeber would continue to toil at securing his unique “descriptive *cum* comparative-culture sphere” in which only anthropology could inhabit.

IV. Theodosius Dobzhansky

In their protracted discussion of knowledge, in Plato’s *Theaetetus*, Socrates offers to his interlocutor, Theodorus, the following summary judgment about the rather vexing and unforeseen status of their current examination:

What are we to do with all these people, my friend? We have been gradually advancing till, without realizing it, we have got ourselves in between two parties; and if we don’t in some way manage to put up a fight and make our escape, we shall pay for it, like people who play the game on the line in the wrestling schools, and get caught by both parties and pulled in opposite directions (180e5-181a4, M. J. Levett, trans., rev. M. Burnyeat, 1990).

Upon reading this outstanding fourth chapter, which seems to stand as the centerpiece of this text, one cannot help but think that Theodosius Dobzhansky (one of the preeminent biologists and geneticists of the 20th century and the focus of this chapter) was having the same intellectual tug-of-war battle as that of Socrates and Theodorus. Jackson and Depew expertly chaperon the reader through Dobzhansky’s understanding of genetics and the modern synthesis and how this helps to make sense of his views on race and politics (and other issues); a discussion that locates Dobzhansky trying to navigate a middle-ground position between the more-leaning genetic reductionists (e.g., Hermann Muller and C. D. Darlington) and the more-swayed cultural determinists (e.g., Leslie White and Ashley Montagu) of his day.

To begin to make sense of the ideas in the above paragraph, Jackson and Depew remind readers that, early on, we find Dobzhansky (much like Boas) caught in a battle against a four-headed hydra: (i) Lamarckian Lysenkoism, (ii) Post-Nazi sympathizers in the United States, (iii) a pre-population genetics world—(iv) including a scholarly mindset that tolerated and even embraced racial inequality and eugenics thinking (p. 101). It is the powerful fumes produced by this hydra that Dobzhansky

found mephitic with respect to scientific accuracy and public education. In response, Dobzhansky had to get other scholars both within and outside of biology to understand that applying genetics to biological populations within a Darwinian framework was not as simple as mere Mendelian genetics might suggest—and even trickier regarding *homo sapiens*. Additionally, he had to countenance a public sentiment that cultural and “racial” differences are real typological differences (see Sober, 1984) and that the application of political theory with respect to policy decisions regarding reproductive rights and an accurate understanding of evolutionary biology all hung in the balance. Dobzhansky realized he had to burnish and promulgate a picture of evolutionary biology that would dampen talk of race differences, bolster the need for a liberal democracy, and simultaneously thwart legislation that would perturb individual choice with respect to mate selection.

Dobzhansky’s distinct conceptual rapiers against this hydra were population thinking and hybrid vigor. It is his exchange with both Hermann Muller and Ashley Montagu (this review will focus on Dobzhansky’s response to Muller), as elucidated by Jackson and Depew, that bring this dual-weapon defense to the portico of what we now call “the modern synthesis” and “neo-Darwinism.” Muller, a Nobel prize winning communist *cum* eugenicist, defended the view that natural selection retains only the best alleles and discards the rest. From this perspective, an adaptation is best understood as the retention of the best alleles in response to local environments. Moving from this account of fitness, Muller insisted that after a uniform equality of opportunity was made manifest at the socio-political level via a socialist political framework, superiority differences, differences that must have a clear genetic component, would emerge (p. 119). (Put another way, he thought that the human gene pool has been contaminated with “bad alleles” due to both radiation and excessive benevolent practices by humans (p. 107). So, a communist framework is needed to make evident “bad alleles” without the interference of class differences.) It is the emergence of this genetically superior group which would then be, much like in Plato’s *Republic*, the core of an organized breeding program. Although Muller did not seem to have much use for a concept of race (p. 119), he was eager for society to embrace both his communist and eugenicist belvedere (Carlson, 1987).

Dobzhansky’s main line of defense against Muller was to attack his conception of fitness and thus pull the biology-rug out from under him. As Jackson and Depew explain, contrary to Muller, Dobzhansky argued that nature does not merely retain *only* those gene combinations that are adaptive in the “now” (e.g., homozygous dominant or homozygous recessive genes). Rather, argued Dobzhansky, by way of the concept of hybrid vigor/heterosis (Shull, 1948), natural selection also secures gene combinations (i.e., polymorphisms, especially the heterozygote condition) that may be beneficial in the long run as a buffer against changing environments (p. 107).

Dobzhansky is here drawing upon the empirical evidence that validates mixed types being fitter than their “purer” parents (i.e., hybrid vigor/heterosis). If Dobzhansky is correct about heterozygote superiority, then contrary to Muller, the retention of genetic variation is not necessarily harmful to organism and species development. Indeed, to the contrary, one can think of this storehouse of variation as ammunition against a range of environmental perturbations to which Muller’s account is not sensitive. Thus, according to Dobzhansky, fitness is best understood, not from Muller’s bad-gene-elimination account, but from a retention-of-polymorphism perspective.

Drawing upon Dobzhansky’s own discovery about both the benefits of genetic inversions (p. 124), geographic isolation and hybrid vigor (p. 124), and the genetic diversity revealed by the X-ray work of Bruce Wallace (p. 126), Jackson and Depew report the following:

Dobzhansky was aware that power granted to genetic experts will be abused under any form of government except the personal-freedom-loving, science-respecting, individual-ability-facilitating liberal democratic institutions...Foremost in his mind, however, was his conviction that the dynamics of natural selection themselves require liberal institutions if the best possible distribution of genes is to be achieved [p. 122].

It is “population thinking” that helps to make sense of the above passage (Ariew, 2008). Both Dobzhansky and Muller agree on the existence of variation as any self-respecting Darwinian must. The difference (on my reading of this analysis) is that Dobzhansky’s population/statistical thinking includes viewing variation as a phenomenon that abides by its own laws and that it is variation that is “really real,” while classificatory labels, types, and averages are not “really real” in nature (Mayr, 1959). In contrast, Muller appears to view variation as a deviation from a natural state that can be eradicated by a well-oiled socialist regime that includes a programmed mating regimen. Yet, Dobzhansky thinks that if he is correct about the implications of population thinking and fitness *qua* polymorphism retention, then he also thinks that the best means of ensuring such retention is by way of a liberal democratic framework that gives ample room for individual choice regarding mate selection.

Regarding the concept of race, Dobzhansky was trying to hitch his population-hybrid-vigor thinking about biology to both Ashley Montagu’s anti-racism campaign and his keen awareness of popular sentiment. In this way, he could not only push for a population thinking account of Darwinism that would not vitiate his polemic with Muller, but also inject this same sort of reasoning onto the concept of race with the hope of abating the largely “essentialist-typological” thinking of the American public (p. 115). As Jackson and Depew explain, this proved to be a most arduous

endeavor (pp. 117-118). It is true that Dobzhansky was sympathetic to Montagu's constructivist-inspired *Man's Most Dangerous Myth: The Fallacy of Race*. He was, however, trying to find a middle-ground alternative in his own *Mankind Evolving* that was in keeping with human evolved plasticity (physiological and psychological); a middle-ground that allows for a social constructivist component without being entirely constructivist. The result is a statistically grounded conception of race in which the concept of race is, at best, a comparative term related to Mendelian populations of shifting ensembles of traits (p. 103). One could construct a concept of race along this population thinking backdrop. Although Montagu tried to work with this sort of population-statistical thinking, he ultimately concluded that, even if the biology is correct, there is no way to inculcate a grossly unprepared American population to such thinking (p. 118) and its corresponding ontological corollaries. As Jackson and Depew summarize:

Dobzhansky's problem-centered, pragmatic race concept is so flexible that, except among cognoscenti, it cannot serve as an effective firewall against ingrained habits of using trait-markers as racially marked signs of co-varying capabilities and incapacities and so of retaining commonplace conceptions of race (p. 118).

It is not strenuous to see the difficult waters that Dobzhansky was navigating—much like the treacherous ground that Socrates and Theodorus were attempting to traverse. In terms of population genetics and the need for a liberal democratic political framework, Dobzhansky (from our current mountain top) appears to be largely vindicated and in keeping with Boas' efforts to abrogate 5F (but see Gomberg, 2007 and forthcoming, for an alternative and historically sensitive communist and anti-capitalist account that is congenial to Darwinian population thinking). Specifically, Dobzhansky can be viewed as upholding, via hybrid vigor, Boas' insistence that human populations are a bunch of mutts (not distinct species or races), fitness is not bothered by interracial marriage (just the opposite!), and the notion of a superior and inferior hierarchy of human populations is utter nonsense. Still, it is also frustratingly clear that Dobzhansky, as Montagu warned and Jackson and Depew indicate, was unable to port his Darwinian population thinking insights about race and culture to a clearly ill-equipped and predominantly obtuse American audience (It seems that not much has changed in the intervening years...); a failure that included an inability to exculpate them from their tired and pervasive essentialist and typological musings.

V. Sherwood Washburn

In whatever respects Dobzhansky, as an outsider, struggled to situate his population genetics Darwinism substructure underneath the burgeoning field of Anthropology, Sherwood Washburn, as an insider, was able to tender (as a learned advocate of Dobzhansky) this biological foundation to many of his anthropology contemporaries via some nifty scholarly and rhetorical maneuvers. Drawing upon Washburn's scholarly efforts and his toil at numerous cross-disciplinary conferences (1946-1968), Jackson and Depew meticulously unveil to the reader Washburn's adroit push to regain Dobzhansky's population-genetics-thinking-momentum in the midst of both the set of lingering reductionist, racist, and eugenics agendas and the rapidly ascending sociobiology and evolutionary psychology programs.

Washburn's sharp dismissal of Earnest A. Hooton, Carleton Coon, and William H. Sheldon stands as the core of this chapter. The first, his PhD advisor, proffered a middle-ground typological view of racial categories that rejects Boas' environmentalism/nurture account and the hereditarians poor empirically grounded "genes-eye" view. Rather, Hooton argued that racial categories should be grounded in "non-adaptive bodily characters" that persistently remain in populations; that is features (e.g., hair and lips) whose presence may not have adaptive value but are clearly the product of hereditary transmission (pp. 144-145). It is the job of the physical anthropologist, maintained Hooton, to find these persistent sets of features that distinguish one race from another. The second, Coon, pushing the envelope still further in his *The Origin of Races*, argued for the evolution of five distinct human races transitioning from *Homo erectus* into *Homo sapiens* (p. 151). Notably, Depew and Jackson remind us that Coon submitted that "sub-Saharan Africans were "the youngest and least advanced" (p. 151). Sheldon, the third, drawing upon his own research in criminal behavior and Coon's research, advanced a reductionistic and typological view that there are basic body types and that some of these types corresponded to criminal psychology and behavior (pp. 157-163).

What stands out as garish and deplorable is that these scholars also embraced a eugenics agenda. As Hooton put it, "We need a biological New Deal that will segregate and sterilize the anti-social and the mentally unfit" (p. 156). Similarly, Sheldon wishes to promulgate the same program when he claims he hopes "to eliminate the principal constitutional and degenerative physical scourges of the race... But of greater importance than that, it might then also be possible by discriminate breeding to strengthen the mental and spiritual fiber of the race" (p. 161). It is this "recrudescence" of a eugenics agenda under the auspices of hereditary determinism and *bauplan* fixity (p. 152) that drive Jackson and Depew to remind the reader that the battles fought by both Boas and Dobzhansky required continued and vigorous expostulation.

Washburn was more than nonplussed—indeed he was aghast—that the remnants of the old typological-stadial-style of thinking were still being peddled by his peers. By both extracting from and synthesizing together his work on fossil remains, anatomical experimentation, and field studies of primate behavior (p. 138), Washburn implored his audiences to recognize, as Dobzhansky claimed, that human culture is an emergent feature of a post-bipedal life. This vantage point requires viewing, on my interpretation, the gene-body-culture complex as an autocatalytic relationship—all three growing and feeding off one-another (amazing what can happen, from an evolutionary perspective, when hands are freed-up!). Jackson and Depew argue that Washburn’s “charming” delivery of this message is best understood under the guise of *epideictic* strategy; that is, he engaged in the rhetorical use of praise and blame at many of the aforementioned conferences with the overall goal of forging “a community that hears occasion-bound speeches such as Pericles’s famous funeral oration or, in our own polity, Lincoln’s striking riff on it at Gettysburg” (p. 139; more generally, also see Depew, 2013). Washburn’s objective was to offer his Dobzhansky-inspired population genetics panegyric to those willing to embrace it and lambast the pervicacity exhibited by his peers (e.g., Coon, Sheldon, and Hooton) who continued to act as antediluvian stanchions for the biology that came before it—again, with a touch of rhetorical panache.

VI. Carleton Coon

This penultimate chapter, like those that preceded it, is more than a penetrating disquisition on its main character, Carleton Coon. Rather, it continues an account of the very remonstrations put forth by Washburn through the direct critical nusus of Dobzhansky (If at first you don’t succeed...). The result is a rather sapid glimpse into Dobzhansky’s obstreperous attempt not only to shut down Coon’s lingering fusty and restive application of biology to race, but also to remind his prominent colleagues, Simpson and Mayr, that their allowance of misinformed interpretations of population genetics and race was endangering the equality of opportunity that is crucial to a flourishing liberal democracy.

Coon, drawing upon updated fossil findings and cossetting the ethos of unifying the sciences, argued that the job of the physical anthropologist is to produce an accurate classification of primate and hominid populations (p. 174). Jackson and Depew’s analysis reveals the following five elements (p. 173) of Coon’s thesis that the-major-races-evolved-from-post-*H-erectus*-populations:

- (i) Climate is crucial to understanding human migration and adaptation to local environments.

- (ii) Migratory behavior is more valuable than cultural innovation.
- (iii) The major races evolved separately from a northern prototype.
- (iv) There are laws that make sense of racial classification.
- (v) Adaptive phenotype similarity is favored over genetics.

Coon's set of (i)-(v) is succinctly crystallized by Jackson and Depew's summary judgment: "Coon used evolution, understood in terms of the adaptive effects of a set of rigid climatic laws on organic form, to get at his end of racial classification" (p. 174). Not surprisingly, Dobzhansky flatly rejected Coon's thesis and the racial classification built around (i)-(v). His primary criticism is that Coon's efforts reflected a poor understanding of population thinking and an unsupported "Panglossian-style" (Gould and Lewontin, 1979) of adaptationist thinking that did nothing more than reinforce a racist agenda and provide academic shelter to ratoon of racist propagandists shooting up from numerous political quarters around the nation (p. 175 and pp. 190-192). This is clearly captured in Coon's definition of race as "a population which differs phenotypically from all others with which it has been compared" (p. 179). This view of race moved Coon to defend the claim that humans are made up of different races because of different local environments producing unique sets of adaptive features *and* some races are better than other races at utilizing their sets of adaptive features (p. 180, p. 182, p. 188). The upshot, according to Jackson and Depew, of this way of separating populations, which was on full display in Coon's *The Origin of Races*, is that "Coon's ideas henceforth became hostage to white supremacists, where, if precariously, they remain to this day—for example, in the rhetoric of the latter-day Klansman David Duke" (p. 175).

Much of Coon's (i)-(v), which buoyed his definition of race, lacked the very sort of precise evidence that Boas demanded of his peers. Indeed, as Dobzhansky's critique attempted to show, Coon virtually ignored the demand for genetic evidence to give any credence to (iii) and (iv). Instead, he insisted on stable-state environments and relatively scant fossil findings that allowed for local climates to wield "selection pressure on anatomy, leading to morphological adaptations or migration equipped with the adaptations a group already possessed" (p. 188). Such a view, which might very well have included a possible reliance on an obsolete orthogenesis (p. 187), stands in stark contrast to the need for genetic evidence for reasonable validation—telling against the truth of (v). Additionally, if Washburn and Dobzhansky are correct about the synergistic interplay between genes-organism-environment/culture (see Lewontin, 2000 and Ananth, 2018, ch. 3 on Developmental Systems Theory for a recent rendition of this sort of entwinement account) then (i) is trivially true, while (ii) is hopelessly misguided. There is little doubt that Jackson and Depew have brought to light that Coon's employment of evolutionary language within his project was nothing more than the use of subtle legerdemain that Dobzhansky was keen to expose.

Unfortunately, Dobzhansky could not annex the remonstrance against Coon's work from the two scholars (and fellow architects of the Modern Synthesis) he anticipated would be in his corner—Simpson and Mayr. Here is where the chapter interestingly shifts a bit away from Coon's arguably ineffective scholarly work to the surprising conclusion that Mayr's own understanding of population dynamics delivered fodder for racist programs. Jackson and Depew nail the issue at this juncture of the text: 'population thinking' is not a phrase that has a univocal definition. Mayr, observing that Coon was using statistical averages over multiple traits (p. 192), welcomed him as a fellow population thinking cohort and part of the Modern Synthesis transferal. Additionally, given his own biological species concept, Mayr had no difficulty accommodating Coon's stable-state environment account of human evolution within his own "isolating-gene-flow" island biogeography training. This allowed Coon, via his emaciated statistics, to speak of different human populations as races *qua* sub-species while getting a thumbs-up from Mayr who had no substantive complaint (given his biological nominalism—the belief that only individuals have any real ontological clout) regarding Coon's creation of groups via statistical averages (p. 197). In contrast, Dobzhansky viewed population thinking from a process perspective such that evolutionary forces are constantly churning out variation in constantly dynamic environments and complex reproductive strategies. This means, for Dobzhansky, talk of species, sub-species, races, was nothing more than an attempt to peddle an ersatz biology in order to create "pure types" in a world that really does not have any. The further consequence of all this, as Jackson and Depew argue, is that Mayr may have either implicated himself in or even subtly endorsed (given some of his additional comments about education, p. 199) the politically motivated racist schemas of the day (e.g., Weyl, 1960 and 1963) by being naïve that his evolutionary nominalism could not be used to incite an anti-egalitarian stance.

VII. Epilogue

Although the Dobzhansky-Washburn rendering of population thinking and of their belief in the synergistic interplay amongst genes, organisms, and environment/culture may have, in part, gained the upper hand in some of the academic quadrants of Biology and Anthropology today, we find ourselves ensconced in a post Donald Trump presidency from which many racist-related factions within some political groups (e.g., alt-right, Tea Party, American Freedom Party, America First Party, Proud Boys, etc.) continue to emerge. Jackson and Depew, in their epilogue, remind readers that this politics-driven racism (and vice versa) renaissance should come as no surprise given the history that they have put on display for us. Speculative

biological claims, as interesting as they might seem, have, in part, given both cover for racist ideology and fuel for class warfare. This becomes apparent as Jackson and Depew explicate the emergence of both Sociobiology and Evolutionary Psychology in this riveting Richard Lewontin-laced coda.

Sociobiology, which is something of a research program developed by the Harvard entomologist, Edward O. Wilson (1975), is the study of animal and human social behavior through the lens of evolutionary biology. Specifically, the set of concepts of *kin selection* and *reciprocal altruism* is used as the quaesitum to the seemingly counter-intuitive sacrificial behaviors of various species of animals, including humans. For instance, kin selection explains both the genetic relatedness of family members and how this genetic relatedness assists in understanding how family members behave toward one another in the *Hymenoptera* order of animals (ants, bees, aphids, sawflies, wasps, etc.). For example, the case of haplodiploidy in bumblebees (males are produced from unfertilized eggs and females emerge from fertilized eggs) results in sisters being more genetically related to each other than either their queen or brothers (or even their own possible offspring!). This explains why worker bees (females) are willing to sacrifice their reproductive success in order to ensure the reproductive success of a sister *qua* ensuing queen—they are basically ensuring, through adaptive “altruistic” behaviors, that their own near-identical genetic line is transported to the subsequent generation (see Hamilton, 1966). Similarly, non-kin sacrificial adaptive behavior, in the form of forfeiting shorter-term gains in exchange for garnering longer-term survival and reproductive benefits, is also thought to be present in the natural world (Trivers, 1971); that is, adaptive behaviors (as a result of protracted iterated interactions) that can be understood to represent reproductive benefits gained and lost under the guise of expected rewards between individuals from distinct species (also labeled mutualism). For example, cleaner fish consume ectoparasites on and in larger fish, the latter of whom do not consume the former because of the health benefits related to the elimination of ectoparasites (some of the game-theoretic complexity of these tradeoffs is explained by Bshary, 2002). Both the cleaner fish and the larger fish they clean benefit from this reciprocity—and even evolutionary counter strategies on the part of the relevant parasites have been observed (Grutter, 2002).

In a similar vein, defenders of Sociobiology argue that human social behavior amongst family members can be understood through kin-selection, and reciprocal altruism can be understood to make sense of non-kin negotiated exchanges. This presupposes that specific human behaviors are adaptations (from a bygone Pleistocene epoch) in the same way as the behaviors of female bees and cleaner fish. The problem, as Jackson and Depew’s leitmotif throughout this book has been trying to press, is that scholars, like Herrnstein (1971 and 1994 with Murray), were quick to

make genetic/biological causal claims (drawing upon perceived successes of sociobiology) regarding human behavior and either endorsing, adverting, or influencing rather over-the-top claims about race, I.Q., and social standing.

On the heels of Sociobiology is the now more popular sub-discipline of Evolutionary Psychology. Spear-headed by the work of Tooby and Cosmides (1992) and further championed by Pinker (2002), evolutionary psychology draws upon the idea of *modularity* developed in both cognitive psychology (Barrett and Kurzban, 2006) and computer science (Russell, 2012) and a rejection of the Standard Social Science Model (SSSM) mantra that humans should be predominantly understood in terms of environment and culture (as opposed to strictly biological factors). The idea is that humans possess ensembles of neuronal circuitry that evolved during the Pleistocene epoch (between 2.5 million and 11, 000 years ago). These neuronal modules are pretty much still with us today and are thought to be evolved adaptations to perform distinctive functions in response to specific environmental stimuli. These modules, for example, help to explain why humans are alert to detect various sorts of deception, why humans desire specific characteristics with respect to mate selection, why humans engage in particular styles of parenting, etc.

Although anthropologists were amongst the first to reject the underlying genetic reductionism and almost complete disregard for acculturation (pp. 209-212) with respect to Sociobiology, it was Wilson's colleague, Richard Lewontin, explain Jackson and Depew, who slammed Sociobiology and Evolutionary Psychology for their simplistic/passive picture of living populations:

To identify adaptations at all populations must be portrayed as solving problems posed to them by their environments, turning organisms into passive aggregates of traits rather than ontogenetically dynamic makers of the species-specific niches from which they draw the resources that enable them to exert agency... The "lock and key" model, as Lewontin calls it, disrupts the thoroughgoing interaction between environment, development, and genotypes on which Dobzhansky insisted... Until the concept of adaptation, he [i.e., Lewontin] adds, and *a fortiori* adaptationism, has been purged from the genetic theory of natural selection the study of biological evolution and cultural history will both be undermined by traces of the stadial progressivism on which racism and eugenics were first predicated and in which they still lurk (p. 212).

Lewontin's trenchant interactionist reply and the sustained response by environment-first social scientists (Sahlins, 1976 and 2012) to Sociobiology and Evolutionary Psychology should have, one would have thought, doused the stair-step

Haeckelian flames and subsequent flat-out racist fires that Boas, Dobzhansky, and Washburn were so eager to extinguish (for a general introduction and critique of Evolutionary Psychology, see ch. 7 of Ananth, 2018). Yet, as Jackson and Depew keep trying to illustrate to the reader, this flame is more like a magician's trick-candle that cannot be easily blown out.

VIII. Brief Assessment

Although there will likely be much scholarly discussion regarding each of these chapters, a few general critical comments are in order. First, it is a bit of a surprise that the fact-value distinction is given very little attention by either the scholars under investigation or by Jackson and Depew. From Boas to Lewontin (with the exception of Kroeber), the discussions focus on how the efforts of these scholars stand as correctives to either misunderstood biology or intentionally biased application of biology. Yet, given any biological account, it is still a separate matter how the biology is to be valued. Even if it were true that some population **X** has a more biologically sensitive cheating detector than population **Y**, it is an entirely separate matter as to whether or not the quality of a population's cheating detector should be valued—much like skin pigmentation, eye color or shape, lip structure, etc. Then, *a fortiori*, any concept of race and/or social standing derived from these and other biological facts could be correspondingly either valued or disvalued. Of course, one may be less than sanguine with respect to arguments fortified by the fact-value distinction; a distinction that one might consider philosophically naïve or misplaced. Yet, if the alternative is the view that facts are imbued with values or the claim that value-free judgments are impossible, then, perforce, further argumentation would be required. Regardless of where one stands on these issues, it would have been interesting—either from a rhetorical or a philosophical angle—to see how the overall analysis, particularly the concept of race component, would have unfolded.

Second, Kroeber's political savvy in developing the nascent field of anthropology into a full-fledged Boasian four-field academic discipline should not be lost in this history—and Jackson and Depew make sure that it is not. Still, his function in this text appears a bit out of place. There is not much analysis of how Kroeber carried Boas' conceptual scheme to the next generation or even how his rhetorical use of culture-as-superorganic directly aids in Boas' rejection of the Haeckelian-Stadial defense of **5F** or how it illuminates the concepts of race and justice. Additionally, I suggested that "the superorganic" *could* be viewed as a *supervenient/emergent* feature of human populations, but this (it must be admitted) is an unsubstantiated assertion that does propound more metaphysical baggage than Kroeber might have been

willing to carry. Is this reading plausible? Could he have embraced supervenience in a way that he could not have endorsed emergence? Given Jackson and Depew's dulcification of the discussion via a rhetorical posturing reading of Kroeber, it is difficult to know. Alternatively, if the real issue is that Kroeber was not interested in advancing any sort of ontological claim about the nature of culture (as many of his academic combatants presumed), but was really articulating a unique epistemic perspective for his fellow anthropologists (this is the position articulated by Jackson and Depew), then this shift to an epistemic perspective instead of an ontological one only changes the philosophical worry; namely, why should we accept this method as a legitimate epistemic method? Lastly, it is eminently reasonable that Kroeber's place in this history functions as a bridge to make better sense of the turbulent battles on display between Dobzhansky and others, but such a crossing is either not revealed by Jackson and Depew or it is simply not present. Given this book's emphasis on biology, race, and democracy, Ashley Montagu might have been a better focal character and Kroeber -as-discipline-builder could have been discussed within this framework.

(Note to reader: Although too current to be included in Jackson and Depew's analysis, UC Berkley's recent decision to remove Kroeber's name from the Kroeber Hall campus building is a complicated and controversial issue. This name-stripping decision is due to Kroeber's purported inappropriate use of Native American materials to determine who were and who were not actual Native Americans and his appropriation and museum-display of such materials in violation of Native American burial rights. Whether or not such actions on the part of Kroeber constitute poor judgment (moral or otherwise) or a steadfast (stadial?) racist agenda is a matter that should be resolved by others at a future date.)

The Dobzhansky and Washburn chapters are both remarkable and wanting. For instance, it was interesting to learn that Dobzhansky defended biological fitness in terms of genetic polymorphism and hybrid vigor (drawing upon the work of Fisher). This suggests a forward-looking sense of adaptive capability *qua* fitness at the population level. In terms of the concept of race, to the extent that this forward-looking heterosis account is a reasonable view of fitness (see David, 1998 and Rhode and Cruzan, 2005), Dobzhansky appears to be advancing the impression that its (i.e., the concept of race) value is overstated given the tremendous variation both within and across populations. Although it is not at all clear that this message has found its way to a less than discerning American public, it is a compelling account when the role of culture is tossed into the mix (Verdu, 2018). Drawing from my own bailiwick (Ananth, 2016 and 2017), it was also a pleasant revelation that Washburn's work in physical anthropology moved him to understand the human body as a bundle of evolutionary compromises. This anticipates the recent interest in Darwinian medicine and its potential role in diagnosis and intervention (Nesse, 2001 and Buklijas and Gluckman, 2013). Indeed, Washburn's prescience with respect to making evolu-

tionary sense of human physiology and his swaying flair to promulgate it could very well establish him as an early and winsome founding father of Darwinian medicine.

Still, as hinted above, population thinking is difficult to grasp and Jackson and Depew could have offered a bit more technical and philosophical handholding through the Dobzhansky and Washburn chapters. For instance, some scholars argue that ‘population thinking’ refers to the metaphysical endorsement of a version of nominalism and a rejection of universals *qua* types. This ontological dispute between nominalists and essentialist has very little to do with statistical issues or population thinking *qua* population thinking. Alternatively, on the assumption that all interested parties acknowledge variation and evolutionary biology, there are statistically minded essentialists who argue that an underlying order is present with respect to acknowledged variation, while other statistically oriented scholars use probability theory to make sense of population dynamics by way of tracking variation at time t as it relates to variation at time $t + 1$. So, for the statistically minded essentialist, ‘population thinking’ refers to the use of statistical models to make manifest underlying order in populations. In contrast, ‘population thinking’ for the variation trackers refers to the use of statistical models to trace the effects of processes across populations. Yet, as the Coon chapter reveals, it is possible to be a statistically oriented thinker and still argue that a core set of essential properties persists in the presence of acknowledged variation. From this perspective, ‘population thinking’ refers to the ferreting out of organization, patterns, and essential features thought to present in dynamically changing populations—including core properties (both external and internal to populations) that distinguish “races.” This is a reminder that not all statistically oriented social scientist are population thinkers (and vice-versa for that matter). It is this statistical posturing by Coon that Dobzhansky likely found stridently maddening (and that Mayr ignored) because, for Dobzhansky, a true population thinker is concerned with making sense of biological changes in populations over time—tracking changes in variation is to what ‘population thinking’ refers. So, if tracking variation is the name of the population thinking game, then fixation on locating and labeling so-called patterns and/or phylogenetic demarcation nodes (e.g., race, species, etc.) is a non-starter. This is my take-away from Jackson and Depew’s rendering of Dobzhansky as a “population thinking process thinker” (see Dupré, 2020, for a recent take on process thinking in biology). This probing reveals, at least, three distinct ways of being a “population thinker” (**PT1**, **PT2**, and **PT3**):

PT1: Commitment to Darwinism, variation, statistics, and nominalism (Boas, Mayr, and Sober)

PT2: Commitment to Darwinism, variation, statistics, and core essential properties (Coon)

PT3: Commitment to Darwinism, variation, statistics, and processes (Dobzhansky and Washburn)

With much more detail and subtlety, something like **PT1-PT3** (and additional renderings I suspect) could have been introduced to aid the reader in understanding how these scholars overlap in their population thinking and where they part company. Additionally, how **PT1-PT3** (or which one amongst this set or a larger set) reflect one's perspective regarding the relevant concepts that help to fortify the social structure of a liberal democracy could be made a bit more transparent (see Millstein, 2009, for more on the concepts of population and meta-population in biology).

IX. Conclusion

Despite the length of this review, which is an adumbration at best, I cannot impress upon the reader the surface on which I have barely scratched. Every chapter is expertly presented with compelling commentary that is fortified by outstanding research. Although many of the topics and key figures are not necessarily at the current forefront of philosophical reflection, Jackson and Depew have very likely opened-up avenues of research for those inclined. Indeed, for those of us who welcome a surfeit of scholarship, Jackson and Depew have offered it with gusto. Ignoring the unnecessarily hefty cost, I suspect that the eager graduate student—and even the most erudite amongst us—will not be easily satiated by this effort and will be eager to assay this scholarly time slice of production for further nuanced insights.

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