



The Transcendence of the Social: Durkheim, Weismann, and the Purification of Sociology

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Building on Fox Keller's acute genealogy of the nature–nurture opposition as located in a certain specific social, cultural, and political history in the late nineteenth century (2010), in this paper, I address a parallel problem: the making of a really modern (i.e., non-biological) sociology nearly at the same time as the “hard disjunction” (Keller, 2010) between heredity and the environment, nature and nurture, was made. I argue rather provocatively that traces of borrowing from hard heredity to sociology can be seen in Durkheim's strategic usage of Weismann to destroy Lamarckian sociology. The transcendence of the social in Durkheim is entirely isomorphic to Weismann's transcendence of the germ plasm: in both cases, they aimed to construct objective realities, radically independent and exterior from individual tendencies and peculiarities. Weismann offered Durkheim an important scientific companion to make boundaries between sociology and biology. In a Latourian sense (Latour, 1993), the purification strategy of Durkheim was actually helped by a hybridization with Weismann's biology. In conclusion, by taking Weismann as an anticipator of the genetics revolution a few years later, I argue for a profound complicity between twentieth century non-biological sociology and genetics. They both made space for a neat distinction between biological heredity and sociocultural transmission, heredity, and heritage. If sociology and genetics thought of themselves as rivals and even enemies in explaining social facts, they should reconsider their positions.

Keywords: Durkheim, Weismann, hard heredity, Lamarckism, sociology, biology, purification, boundary-work

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INTRODUCTION

Weismann and the Possibility of the Social

This paper addresses the emergence during the late nineteenth century of a certain way of thinking that came to be seen in the twentieth century as self-evident for many social scientists and biologists alike. According to this way of thinking, “If something *is not biological* in origins, *it must be social*” or, alternatively, “*If not social, it must be biological.*” The many possible versions of this fundamental way of thinking can be easily found in hundreds of articles discussing behavioral, medical, or developmental issues. A slightly more sophisticated refinement introduces the view that traits, diseases, or behaviors are actually a bit of both or rather the result of an “interaction” or “combination” among the two kinds of causes, namely the biological and the social, nature and nurture, heredity, and environment. However, as Evelyn Fox Keller has noticed, this apparent synthesis creates more problems than one may think: “the notion of interaction presupposes the existence of entities that are at least ideally separable – i.e., it presupposes *an a priori space between* component entities” (Keller, 2010, p. 6, my italics).

The argument of this article neither offers an alternative way of thinking to this *a priori disjunction* nor critiques its possible epistemological shortcomings. My interest is instead genealogical: how did we come to think this way? When and how did posing biological and social factors, blood and civilization, heredity and environment, as alternative domains, start to make sense, up to the point to become a sort of truism? In this article, I build on Keller's acute genealogy of the nature–nurture opposition as located in a certain specific social, cultural, and political history in the late nineteenth century (2010), to bear on a broader problem: the making of a really modern (i.e., non-biological) sociology, which emerged with its idea of a purely social (i.e., non-psychobiological) level of causation nearly at the same time as this “hard disjunction” (Keller, 2010) between heredity and the environment, nature and nurture, was made.

Is there any connection between the emergence of the social as a non-biological and non-psychological source of causation and the making of the modern view of heredity (Johannsen, 1911)? Is just a coincidence that sociology – as we are told in nearly all textbooks – started to emancipate itself from biologism in the very last years of the nineteenth century, exactly in the arc of time between Weismann's publication of his seminal compendium on heredity (Weismann, 1893a) and the rediscovery of Mendel (1900)? This relationship between history of sociology and history of science remains, in my view, one of the most overlooked in intellectual history. Building on an existing scholarship, in a previous article, I have already argued how Alfred Kroeber, a key figure in American anthropology, crucially depended on the incorporation of Galton and Weismann to purify anthropology from the “vitiating mixture” of organic and superorganic explanations, i.e., Lamarckism [Meloni (2016a,b), also, see Kroenfeldner (2009)]. However, people may think that Kroeber is just an idiosyncratic case not generalizable to other cultural contexts and disciplines. In this article, I will argue for a parallel, though subtler, role of Weismann in the making of Durkheim's sociology. I want to claim, rather provocatively, that the transcendence of the social in Durkheim (truly Durkheim's trademark) is *entirely isomorphic* to Weismann's transcendence of the germ plasm: in both cases, they aimed to construct objective realities radically independent and exterior from individual tendencies and peculiarities. The collective nature of the social is perfectly analogous to the collective nature of hereditary tendencies established by Weismann (and Galton before him). As we shall see, Weismann offered Durkheim an important scientific support to make boundaries between sociology and biology. Since the discovery of Weismann in a footnote in the *Division of Labor* (Durkheim, 1893/1997), Durkheim borrowed from and capitalized on Weismann's epistemic revolution, founding a scientific pendant to his idea of an ontological break between the social and the individual domain, i.e., a social fact is not the sum of many individual facts. This ontological hiatus, as I will show, was impossible to conceive under a nineteenth century Lamarckian framework, and instead corresponded perfectly to the modernization of heredity started by Galton and consolidated by Weismann, and later by genetics. However, to understand this, it is important to go back to what happened before the bifurcation between the social and the biological took place, when this broadly Lamarckian framework

was at its peak. I will focus here [summing up some of the themes of my recent *Political Biology*, see Meloni (2016a)] on two different disciplinary bodies of knowledge in the nineteenth century: social theory and philosophy on one side; medical writings on heredity on the other.

The Complicity of the Social and the Biological before the Big Dichotomy Social Theory and Philosophy

Before the word biology was coined in the early 1800, there are obviously many predecessors of a dichotomous understanding of the relationship between “nature” and “society” (if we want to use nature as a proxy for what will be later called the biological). In early modernity, Rousseau's name comes easily to mind for his radical disjunction between nature and society. Rousseau, who was the first to use “social” as the adjective of society (Heilbron, 1995), was also the most original representative of a trend that opposed the *social order as non-natural* to nature as *non-social*. Part of this naturalism transited into the next century in the form of an ethic and esthetic celebration of nature among the Romantics. However, Rousseau's point was mostly normative, not aimed to parse human behavior in biological or social explanations as antagonist causes. Moreover, if we look at things later in the nineteenth century, when the notion of the social starts to be more intensely theorized, an utterly dichotomous framework is indeed rare. For instance, the young Marx's view in the *Economic and Philosophical Manuscripts* (1844) contains a holistic understanding of the social in which “the social character” is not something opposed to “the natural,” but it is rather the totality of human relationships (natural ones included). In a different context and decade, John Stuart Mill's view has been elegantly analyzed by Fox Keller (2010), and I can simply repeat her point here. In his *Utilitarianism* (1863), Mill considers “moral feelings” as “not innate, but acquired,” a statement that provoked Darwin's distress in his *Descent* a few years later. Mill's sentence may seem to reflect a twentieth century antagonism between nature and nurture. However, as Keller observes, in claiming that moral feelings are acquired, Mill was making an entirely non-dualistic point. If moral feelings are acquired, he wrote, “*not for that reason [they are] the less natural*. It is natural to man to speak, to reason, to build cities, to cultivate the ground, though these are acquired faculties” [Keller (2010); also, see Paul and Day (2008)].

Spencer provides an even clearer illustration here, given his recognized dependence on Lamarckism [Peel (1971); Bowler (1993); also, see Burrow (1966) and Offer (2010)]. In a Lamarckian context, as I have argued elsewhere (Meloni, 2016a,b), the social is always on the verge of turning into the biological, i.e., in a nineteenth century language, habits *via* use-inheritance are progressively fixed and transmitted by heredity to the next generations. Use-inheritance necessarily undermines any strict boundary between the social and the biological, the mind and the body, as well as the acquired and the innate. As Spencer (1887/2013) said in his very Lamarckian *Factors of Organic Evolution* acquired characteristics “may, in the successions of individuals, *generate innate tendencies* to like or dislike such actions” (my italics). The sentence is obviously troubling for a twentieth century

understanding of the innate as fixed and therefore *impossible to be generated* by the influences of previous generations: but Spencer, as a Lamarckian, didn't see a contradiction at all in looking at the *innate as something generated* from the deeds of previous generations.

However, the function of Lamarckism was not only to confuse (if not, make utterly impossible) the distinction between the innate and the generated, the social and the biological. It was essential for nineteenth century sociology that Lamarckism offered a key mechanism to connect organic and social evolution, biological and moral progress, thus making sociology coterminous with social evolutionism in a teleological and linear view [see Weinstein (1998); Gissis (2003)]. It is at the conjunction of three key arguments that Spencer makes organic and social progress indistinguishable. First, that morality has a physiological basis or rather is "a development of physiological truth" (Spencer, 1851/1883, p. 31.6). Second, that human characteristics are malleable by the environment – something especially true for higher civilizations deemed more plastic than others (thus establishing a hierarchy of civilizations based on plasticity). Third and finally, that use-inheritance is true, thus making moral progress, as a physiologically based feature, cumulatively transmissible across generations (Weinstein, 1998). Spencer is not shy to make the case for a clear sociological implication of his broader biological view: "If functionally-produced modifications are inheritable, then the mental associations habitually produced in individuals by experiences of the relations between actions and their consequences, pleasurable or painful, may, in the successions of individuals, generate innate tendencies to like or dislike such actions. *That our sociological beliefs must also be profoundly affected by the conclusions we draw on this point, is obvious.* If a nation is modified *en masse* by transmission of the effects produced on the natures of its members by those modes of daily activity which its institutions and circumstances involve; then we must infer that such institutions and circumstances mould its members far more rapidly and comprehensively than they can do if the sole cause of adaptation to them is the more frequent survival of individuals who happen to have varied in favourable ways." (Spencer, 1887/2013, p. 5–6, *my italics*).

This and similar worldviews were extremely widespread in the nineteenth century and not menaced by Darwin's *Origin of Species* (Bowler, 1983, 2013). Such philosophies opposed the scary randomness of Darwinian variation, with a reassuring teleological view of *biological-cum-social* progress, a steady advancement (as in biological ontogeny) from the homogenous to the complex, with little or no space chance. Regression and degeneration were definite possibilities, but faith in "perfectibility" was far stronger (Gissis, 2003). Before coming to the destruction of this Spencerian worldview (as a consequence of the emergence of hard heredity and later genetics), it is important to look quickly at a second body of scholarship: medical hereditarianism before hard heredity.

Heredity before Modern (Hard) Heredity in Medical Writings

It is very telling that until the eighteenth century the word heredity had mainly a juridical meaning [Müller-Wille and Rheinberger

(2012), also, see Johannsen (1911)], while in a medical context, it was used only as an adjective (López-Beltrán, 2004).¹ A significant change occurred only from the early nineteenth century, when the notion of *hérédité* or *heredity* started to be nominalized and investigated as a phenomenon in itself in medical writings, especially in France and Britain. However, what is meant by this hereditarian literature is very different from our post-twentieth century understanding. Heredity meant, in the early and mid-nineteenth century, a complex entanglement of social and biological factors, innate, and acquired characteristics. It envisioned a blurred mechanism "beginning with conception and extending through weaning" (Rosenberg, 1974). A case in point is the enlightenment polymath Erasmus Darwin, Charles' grandfather, who viewed heredity "as the result of a malleable admixture of nature and nurture causes." (Wilson, 2007). Erasmus believed that exciting external causes produced structural changes in the organism and were then fixed into heredity. These views were very visible, for instance, in his poem *The Temple of Nature: Or, The Origin of Society* (1806): "The clime unkind, or noxious food instills to embryon nerves hereditary ills." Erasmus wrote "The feeble births acquired diseases chase, Till Death extinguish the degenerate race" [cited in Wilson (2007), p. 137]. Erasmus' citation is very early in the nineteenth century, but Charles himself, Erasmus' grandson, still until 1868 (*Variation of Animal and Plants under Domestication*) held to a mechanism (which he named "pangenesis") whereby direct communication existed between body cells and reproductive organs. This would be in flagrant violation of what we know today as genetics. A good illustration of the gap between Darwin and the modern view of heredity can be found in the quarrel between Darwin and his younger half-cousin Francis Galton on the empirical validity of pangenesis. Galton tested the gemmules hypothesized by Darwin and showed no circulation in the blood of these "reproductive elements." After that episode, which we can consider as a sort of parting of the ways, Galton's view of heredity developed autonomously and originally. A new view of heredity radically closed to environmental inputs was made after Darwin thanks to the converging effort of two different traditions of thought, one mostly statistical and anthropological championed by Galton, the other embryological represented by August Weismann (Churchill, 2015). The two views had much in common, and their conceptual impact went well beyond history of science as I will try to show next about Durkheim. However, it is important to focus quickly on the significance of the making of the modern knowledge regime of heredity (Müller-Wille and Rheinberger, 2007, 2012).

The Making of Hard Heredity in the Late Nineteenth Century

The making of hard heredity in the last three decades of the nineteenth century is an event of immense importance, in science and beyond it. As a significant body of scholarship has shown (Bowler, 1989), the same rediscovery of Mendel in 1900 can be considered a delayed effect of the making of hard heredity.

¹This section (pages 3–5) reproduces a few passages of my *Political Biology* (2016), Chapter 2.

Hard heredity, or the modern notion of heredity (Johannsen, 1911), is the notion that heredity is fixed at birth and is not affected directly by changes in the environment (Bonduriansky, 2012). It was the making of this notion that created the epistemic space within which the Mendelian notion of a particulate and stable (unchangeable) hereditary material (later christened the gene) could be situated and Mendel “rediscovered.” As Weismann proudly claimed “Mendel’s law is an affirmation of the foundation of the germ-plasm theory” [quoted in Churchill (2015), p. 540].² Leaving aside Galton’s key contribution, I will restrict my analysis to Weismann, for reasons of space, but also to advance my thesis about the structural analogies with Durkheim’s thought.

August Weismann

Celebrated by Mayr as “the greatest evolutionist after Darwin” (1985), August Weismann (1834–1914) stood for a transformation from the “original, flexible Darwinism” that could still make room for a “Lamarckian component in addition to natural selection” to a more “dogmatic” one [Bowler (1983), p. 75; also, see Mayr (1982)] in which natural selection was the exclusive and omnipotent source of individual variation. In the 1880s, Weismann tested Lamarckian inheritance by amputating the tails of more than 20 successive generations of mice. Their offspring all had intact tails. These experiments were intended to disprove the theory that acquired mutilations could be inherited across generations. Lamarckian inheritance, according to Mayr (1988), “never regained full credibility after Weismann’s attack,” though Lamarckians have disagreed on the significance of these experiments. Weismann put on much shakier grounds the inheritance of acquired traits that was, at the time, nearly considered a commonsense view.

Since 1880s, Weismann was understood as the proposer of a crucial turn in the reconceptualization of heredity and evolution, “striking at the very root” (Wallace, 1889, p. 411) of all theories claiming for direct effects of the environment on heredity. Given these expectations, Weismann soon became a polarizing figure that could be embraced or fought against but could not leave things as they were before. Before Weismann, natural selection and Lamarckian inheritance were seen as concomitant factors in the process of selection differing only by degree, not kind (Romanes, 1899). Heredity was a pluralistic mechanism. After Weismann, the polarization between these two mechanisms – natural selection and the inheritance of acquired characters – became extreme, giving rise to a series of ideological fights. The term neo-Lamarckians and neo-Darwinians were both created after Weismann’s first important works, between 1885 and 1888. The heated debate with Spencer in the early 1890s [e.g., Spencer (1893a,b); Weismann (1893a)] is very representative of this clash between what, after Weismann, emerged as two irreconcilable worldviews. Weismann’s idea of heredity was known as the theory of the “continuity of germ plasm” and was based on the assumed

“existence of a special organised and living *hereditary substance*, which in all multicellular organisms, unlike the substance composing the perishable body of the individual, is transmitted from generation to generation” (Weismann, 1893a, p. xi). The doctrine of the continuity of germ plasm is a fundamentally dualist one, based on a “contrast between the *somatic* and the *reproductive cells*” (Weismann, 1893a, p. 183). As Mary Jane West-Eberhard in a now classic work explains, “The cells of the soma participate in growth and differentiation, but then they die, while the germline cells, set aside early in development, serve as an uncontaminated bridge to the next generation” (1993: 331). What was destroyed by this view was any bridge between the individual and the race. This is the opposite of a Lamarckian–Spencerian view in which individual acquisitions are passed on and become fixed into the heredity of the group. As I shall argue next, *this ontological hiatus between the race and the individual* – made possible by the destruction of the Lamarckian bridge of use-inheritance – was understood by Durkheim as a *scientific pendant of his also dichotomous view* of the hiatus between social and individual life. To convey this idea of an impossible communication between “characters acquired by the adult body” and germ plasm (Bowler, 2009), Weismann used a metaphor that Durkheim would have probably liked: to suppose communication between what is acquired during a lifetime and the hereditary substance “is very like supposing that an English telegram to China is there received in the Chinese language” (Weismann, 1904).

Weismann, Weismannism, and a Legacy to Reevaluate

Underneath the image of Weismann as the man who destroyed Lamarckism, a more nuanced historiographical tradition has established that the German embryologist pioneered elements of a radically new vision of heredity while adhering to old developmental views that persisted until his last publications (Bowler, 1989; Winther, 2001; Novak, 2008; Churchill, 2015). There is no doubt that broader political pressures (Winther, 2001) hardened the Weismannian dichotomy between non-heritable somatic variations and germ plasm heredity into a broader ideology, “Weismannism.” This ideology was at the heart of swelling eugenic and hard hereditarian schools of thought in the early twentieth century. Weismann was seen as buttressing a conservative racial argument, bringing support to the racial hygiene movement in or the militaristic ideology of the ruling elites in Germany (Crook, 1994). Nevertheless, beneath the more ideological uses, if not caricatures, of Weismann’s thought, his profound and long-lasting impact as an original thinker has to be entirely reevaluated, especially in its implications for the social sciences and ideas of social reform and progress. Beyond politics, the rise of Weismannism (or Neo-Darwinism) was seen as a huge intellectual catastrophe for the social sciences as well. Herbert Spencer understood Weismann as a menace for “Education, Ethics, and Politics” (Spencer, 1893a, p. 488). Lester Frank Ward (1841–1913), the prominent neo-Lamarckian and first president of the American Sociological Association, was similarly perturbed by Weismann, the new “great prophet of science.” If hard heredity were true, he surmised, social progress would be lost. How could it be otherwise if each generation’s

²I am well aware that this simplifies a complex debate on the transition from a speculative view of heredity in Weismann to the experimentalism of geneticists. This, however, has to be left aside in this paper.

political, moral, and educational efforts were erased with the rise of the next?

If nothing that the individual gains by the most heroic or the most assiduous effort can by any possibility be handed on to posterity, the incentive to effort is in great part removed. If all the labor bestowed upon the youth of the race to secure a perfect physical and intellectual development dies with the individual to whom it is imparted why this labor? (...) In fact the whole burden of the Neo-Darwinian song is: Cease to educate, it is mere temporizing with the deeper and unchangeable forces of nature. And we are thrown back upon the theories of Rousseau, who would abandon the race entirely to the feral influences of nature. (Ward, 1891, p. 65)

Thus, Weismannism was initially received as a reactionary and exclusionary doctrine in politics, supporting fatalist and nationalist views, while from the perspective of the social sciences, it seemed to offer few, if any, advantages. However, Weismannism inspired less intuitive political corollaries, as well, both in politics and in terms of knowledge-production. Before looking in detail at what Durkheim borrowed from Weismann, the subtle and richer implications of Weismannism have to be emphasized. I will focus here on two points.

First, in politics, there is an obvious consequence of Weismannism that was seriously overlooked by Lamarckians. As various Neo-Darwinists have claimed in different contexts, from Alfred Russel Wallace to Yuri Filipchenko and Julian Huxley, the degenerative effects of the environment would be contained and even neutralized by an impervious hereditary substance (see Meloni, 2016a). After all, if the good effects of education could not be attached to heredity, then the ill effects of unequal social structures would also be kept at bay. As heirs of the twentieth century, we struggle to understand how hard heredity could be progressive because we tend to associate the emphasis on the environment as typical of social reform movements. However, in a period where claims of the degeneration of races and classes were so widespread because of their repeated exposure to pathogenic environments, Weismannism had a liberating potential. Alfred Russel Wallace (who was a Weismannian and an anti-eugenicist) claimed that it was a “relief” to know, after Weismann, that all the “evil and degradation” of human history will leave no permanent traces once “a more rational and more elevating system of social organization is brought about” (Wallace, 1892).

A second point regarding knowledge production is vividly exemplified by Kroeber’s use of Galton and Weismann to challenge the confusion of organic and superorganic in Lamarckian explanations (Kroenfeldner, 2009; Meloni, 2016b). It is on this point in particular that we need to reflect to see what sort of potential Durkheim saw in Weismann. The separation of heredity from individual lifetime acquisitions allowed Weismann to draw out three consequences of the utmost importance for the social sciences. The first was to radically separate the connection between biological and social development, making Spencerian social evolutionism impossible and driving a “wedge” (Peel, 1971) between the evolution of life and that of society. After Weismann,

social evolution as a whole is no longer there, but split into two. The second was to radically separate individual actions from their hereditary substance, freeing the individual from the yoke of their ancestors’ deed, and making heredity a much less personal force; a generic one, as Durkheim clearly saw. The third consequence, in delimiting heredity to the germ plasm, was to release the whole body (sexual elements excluded), and above all, its environmental influences from hereditarian mechanisms, with general emancipatory effects for the sciences that aimed at studying this environmental and now extra-hereditarian dimension, as Kroeber saw better than anyone else. After Weismann, what connects human generations across time belongs to two utterly separated domains: an internal perpetuating germ plasm, subject of biological and evolutionary investigations; and cultural, educational, and social processes, now disentangled from the vicissitudes of biological heredity. Such drawing of boundaries could not be missed by someone like Durkheim who, as a good follower of Boutroux, was looking for epistemic fences to delimit and anchor each science to its own purified domain.

Durkheim as a Weismannian

There are only two citations of Weismann in Durkheim’s work, to my knowledge. Both are in footnotes, the first in *Division of Labour* (DL, Durkheim, 1893) and the second in *Suicide* (S, Durkheim, 1897/2002). This paucity of explicit references may justify the fact that all commentators have overlooked the significant way in which Durkheim borrows from the hard-heredity revolution to make ontological room for his transcendence of the social. My key thesis is not only that, as we shall see in more detail below, *Weismann supplies Durkheim with a powerful scientific companion to make the social transcendent, but more importantly that the structure of Durkheim’s theory is entirely isomorphic to Weismann’s*. Durkheim’s dichotomy of society and individual maps perfectly onto Weismann’s dichotomy of germ plasm and transient individual bodies. Both challenge some form of empiricism in their own field.³ For both, it is not individual experience (contra Spencer, a common enemy) that makes general categories (Durkheim, 1915, p. 13), such as society or heredity: the social and the germplasm have a flavor of immortality that is certainly not allowed in the individual. Beyond this morphological symmetry, Durkheim and Weismann have much in common⁴: both

³While the Kantian influence on Durkheim (via Renouvier and Boutroux) is obvious and highlighted by numerous commentators [see, for instance, Lukes (1985), Hamilton (1995), Stedman Jones (2002), and Pickering (2002)], one might only speculate how/if such an influence acted on Weismann. In passing, Churchill (2015), the most important historical authority on Weismann, reports of a dismissive comment of the German biologist against the obscurity of the philosopher but emphasizes the profound dependence of Nägeli (an important source for Weismann’s theory of heredity) on Kant (Churchill, 2015), p. 56; 226].

⁴It may be worth noting that chronologically, the two were separated by one generation, as Weismann was born in 1834 and Durkheim in 1858. They died, respectively, at the beginning and during WWI, Weismann in 1914 and Durkheim in 1917. Weismann’s key scientific years were the 1880s and Durkheim’s the 1890s. It is also important to notice, and I thank the first reviewer for highlighting this, that an equal movement of autonomization of disciplines was started in parallel at the time in psychiatry and psychology by authors like Charcot, Janet, and particularly Wundt (an important reference for Durkheim), a trend that well-matched Durkheim’s interest in Weismann.

portrayed themselves as initiator of an epistemological break in their disciplines; both were passionate boundary-makers [in the sense of Gieryn (1983, 1999)], aiming to clearly demarcate a positively founded science from the vestiges of long-held opinions; both were great modernizers [in the sense of Latour (1993)] who deployed a largely dichotomous vocabulary to restructure their scientific fields: any spurious element, be it individualism or Lamarckianism, had to be zealously rejected to achieve a purified view of social or biological heredity. Both had a profound faith in positive science and were aware they were situated at a critical juncture in their respective disciplines' transition to a more mature stage. Finally, in their political implications, they were very ambivalent creatures, whose legacy had the common destiny of being interpreted in opposite directions, conservative and progressive, romantic and positivist.

Even a superficial knowledge of both authors and their scientific context invites one to draw parallels. However, the critique has wholly overlooked any connection between the two: no references to Weismann can be found in any of the key scholarship texts [see, for instance, Lukes (1985); Mucchielli (1998)]. Among mainstream interpretations of Durkheim, we are told that he belonged to the 1890s generation who “were nurtured in a Republican milieu and were influenced by neo-Lamarckian theory of evolution and heredity” (Fournier, 2005, p. 60), but the way in which he used or rejected this milieu is not addressed. In his vast reconstruction of the discovery of the social, Mucchielli (1998) uses the category of “antinaturalistic reaction” or “critique of biological determinism” to trace the evolution of sociology from the biological to the social, though never addressing whether this reaction could be done without any relationship to epistemic changes within biology itself. A few authors analyze Durkheim's theory of race [Fenton (1980); Lehmann (1995); Paligot (2006); also, see Fields and Fields (2012)], which is connected to his view of heredity, but once again very scant details appear on Durkheim's knowledge of biology. A few others look at possible common spaces between Durkheimian notions like social solidarity or morality and biology or socio-psychology (Gofman, 2014; Weiss and Peres, 2014). Mainstream interpretations recognize that some key notions in Durkheim were “strongly moulded by nineteenth-century biology and medicine” [Lukes (1982), p. 146; also, see La Capra (2001)], but we are left in doubt about the specific quality of this knowledge.

Among non-mainstream interpreters of Durkheim, there are a few authors who have looked more extensively (and bravely) at the importance of biological themes in the development of Durkheim's thought, challenging the stereotype of Durkheim's antibiologism. Hirst (1973), for instance, analyzes in-depth the way in which Durkheim's sociology borrows from biological themes either in terms of metaphors or analogies. Although Hirst overlooks the influence of Weismann, he offers a convincing argument that Durkheim sees in Darwin (with his concept of random variations) the possibility to break away from the teleological progressionism of Lamarckians like Spencer. This is, in my view, a first important wound to the notion of a simple neo-Lamarckian influence on Durkheim because of the cultural landscape in which he was immersed. Nye (1982, 1984) has highlighted the reliance of Durkheim on a Lamarckian repertoire

in the early phases of his work, especially in Durkheim's 1888 article on mental pathology that features quasi-degenerationist themes. However, as Hawkins (1999) has pointed out, Durkheim's later trajectory can be seen as a progressive break with this degenerationist, Lamarckian model. Hawkins emphasizes the emancipatory value of Durkheim's notion of non-dysfunctional criminality to de-pathologize its figure but does not perceive Weismann as important in this abandoning of Lamarckian views of heredity. Finally, Gissis (2003) has written by far the most extensive treatment of the influence of Lamarckism on French sociology, and in this light, she analyzes the relationship between Durkheim and biology. Gissis's argument is that the Lamarckian idiom was quintessential in grounding Durkheim's solidarist perspective and finding an alternative to the individualism and organicism endorsed by Worms and his supporters. According to Gissis, Durkheim and the Durkheimians naturally inclined to Lamarckian explanations given Lamarck's “methodological and epistemological (but not ontological) priority of the collectivity.” I am not entirely convinced by the point. Although Lamarckism was a very flexible conceptual repertoire (Meloni, 2016a), it is rather difficult to enroll Lamarckism entirely on the side of collectivity against individuality: Spencer, a Lamarckian *and* an individualist, provides the clearest counter-example here. But, there is a more important argument in my view, i. e. that Durkheim understood the neo-Darwinian view of race and heredity (i.e., Weismann) exactly as a denial of individuality, which is instead central in a Lamarckian view of race (shared by Spencer) where race is made by the accumulation of *individual modifications*. Looking at the chronology, Gissis' detailed analysis is in fact less at odds with my argument than it may seem. As Gissis (2003) recognizes, Lamarckism was first used and then abandoned by Durkheim; when the credibility of Lamarckism started to wane, Durkheimians moved away in search of other theoretical models. My argument can be seen as an addition to Gissis: I want to highlight how important the understanding of Weismann was in 1890s for this transition out of Lamarckism. Even more subtly, as I have shown in the case of Kroeber (Meloni, 2016b), the incorporation of Weismann did not just allow a move away from *Lamarckian biology* but, given its dualistic framework, *from biology as such*, thereby allowing the emergence of the social as something transcending the organic.

Reading Durkheim's Weismann

The very few references to Weismann in Durkheim's work provide a partial justification for the gap in scholarship addressing Weismann's legacy and influence on Durkheim. However, those references that do exist are significant and strategic, not merely ornamental.

In fact, they are all the more important, considering the time and disciplinary context of Durkheim's work: time, because Weismann's key compendium on heredity appeared in 1892, and was translated into French the same year (*Essais sur l'hérédité et la sélection naturelle*) just 1 year before DL was published; and discipline, given the usually angry responses that Weismann and neo-Darwinism obtained by sociologists (with Spencer and Ward being rather typical of this frustration). In this difficult context, it is evident that Durkheim looks at Weismann with eyes that

are different from other sociologists or fellow nationals (who often depicted him as “a German menace to French biological research”: Gissis, 2003). Instead, Durkheim saw in Weismann a methodological brother-in-arms, as it is evident from the three key works of Durkheim in the 1890s.

Division of Labour in Society (DL 1893)

The first reference to Weismann’s work in Durkheim’s writings appears in a footnote of DL. Weismann’s work is introduced in the conclusion of Chapter 4. To give some context, Chapters 3 and 4 are a long detour devoted to the study of various “secondary factors” that have, beyond social causes as such, a role in explaining, hampering, or speeding the division of labour. Chapter 4, in particular, is devoted to one of those non- or pre-social factors: heredity. The knowledge that Durkheim displays of the heredity debate in the mid- and late-nineteenth century is more than erudite: it shows a real engagement with an issue that has important sociological consequences. Durkheim discusses at length key authors, such as Prosper Lucas, Galton, Lombroso, and de Candolle. Here, Durkheim advances a notable argument, which will recur again in *Suicide*, about the waning of heredity both in human evolution and as a social institution. In this latter case, it is the progression of the division of labor to more complex and specialized forms that results in a decline of the social significance of heredity. As Durkheim writes “the importance of heredity in the social organisation of labour is all the greater when that labour is less divided up” (DL: 258). Before proceeding to an analysis of the reference to Weismann, two things are worth remarking here in Chapter 4. First, there are no ambiguities in Durkheim’s usage of heredity as a modern concept: heredity is about the fixed and the innate, something that is opposed to the social environment and cannot be generated by it, as in Erasmus Darwin or Spencer. The lesson of Galton, cited at length, seems to be fully internalized. Second, Durkheim makes a clear connection between the emergence of a contemporary science of heredity and its waning significance in society. It is just because heredity declines as an article of faith, replaced “by a faith that is almost its opposite” (i.e., the power of the individual in shaping his destiny), that we are now in the conditions to study it. Heredity, Durkheim adds “did not come into the purview of science until the moment when it had almost vanished from that of belief. Yet there is no contradiction here. For what, finally, the common consciousness affirms is not that heredity does not exist, but that its importance is less great, and *science, as we shall see, reveals nothing that contradicts this view*” (DL: 250, my italics). I want to argue here that the “science” that reveals a diminution of the significance of heredity is exactly Weismann’s “hereditarianism.” It is precisely in the context of an argument for which “the individual is tied less strongly to his past” and “it is easier for him to adapt to new circumstances as they occur,” that the reference to Weismann is introduced in a long footnote, which ends the chapter.

What Durkheim says is extremely interesting. In spite of striking a (diplomatic?) note of cautiousness about the conclusive anti-Lamarckian evidence produced by Weismann, he is in no doubt about taking Weismann on board as a champion of his diagnosis of the diminishing power of heredity. This interpretation

is brilliant, original, and nearly unique at the time. Durkheim understands Weismann in a way that goes against the grain of how Weismannism was generally understood in right-wing, racial hygiene quarters (Weindling, 1989): not race and heredity as fate, but exactly the breaking of fate, because individual variations (the legacy of the past) no longer have direct impact on future generations. Weismann, the scientist of heredity *par excellence*, is also in sum the liquidator of the burden of heredity. Why? Because from Weismann, Durkheim gets a twofold lesson, which will become increasingly relevant in his future work.

First, that what is transmitted in biological heredity, after Weismann and contra Spencer, is not the individual type but *a broader and therefore vaguer* “generic type” (the germ plasm for Weismann or the stirp for Galton). “Not so easily affected by individual variations, as has on occasion been supposed,” Durkheim writes (DL: 268) this generic type implies that what heredity transmits is not the specific determinations resulting from individual actions and tendencies but *a generic substratum of faculties and propensities*. As a collective property of the race rather than the result of the individual actions, heredity is radically depersonalized. What results is that “the more indeterminate and plastic this [generic] type, the more also the individual factor gains ground” (DL: 268), making heredity’s yoke lighter. The passage could have been stronger, as if Durkheim is just starting to realize the importance of this shift in the view of heredity. But, it is clear that this paragraph has to be read against the background of a series of passages in the chapter where it is emphasized again and again that “what heredity transmits consists more and more in indeterminate predispositions, general ways of feeling and thinking” that only at the social level do they become then specialized “in a thousand different ways.” Although the reading of de Candolle may have played a role in this interpretation [see on de Candolle, Fancher (1983)], such a quintessentially sociological way of thinking is the natural ally of Weismann’s view of heredity as being confined to the collective level and not affected by individual variations. One can compare several passages of DL to what Weismann himself writes to deny the inheritance of *a specific artistic talent*: “The Bach family shows that musical talent, and the Bernoulli family that mathematical power, can be transmitted from generation to generation, but this *teaches us nothing as to the origin of such talents* (...). Gauss was not the son of a mathematician; Handel’s father was a surgeon, of whose musical powers nothing is known; Titian was the son and also the nephew of a lawyer, (...) a man is not born a physicist or a botanist, and *in most cases chance alone determines whether his endowments are developed in either direction*.” (1893a, p. 96–97, my italics).

It is this way of thinking in which the idea of a specific musical talent is dissolved and replaced by a broader faculty that put Weismann’s thought very much in line with Durkheim’s idea of a generic force of heredity that can then take many social forms. This Durkheim–Weismann line is obviously very different from a strictly Lamarckian view in which musical talent, as an inherited characteristic, is passed interpersonally in families of musicians, as Spencer wanted. But, it is also very different from the crude hereditarianism of the first generation of eugenicists who believed in a specific “wandering impulse” running in families of sailors, as Davenport (1915) did, for instance.

However, there is a second lesson from Weismann, even more important than the first, contained in this dense footnote, a lesson that will become the true mark of Durkheim's hidden Weismannism. It is the key notion that between the individual and the "collective type" or race, there is in Weismann *an ontological gap*, exactly the chasm existing in Durkheim, between the social and the individual. The passage is worth citing entirely:

From another viewpoint also these theories [of Weismann] are of interest to us. One of the conclusions of our work to which we attach the most importance is this idea that social phenomena derive from social and not psychological causes. Also, the collective type is not the mere generalisation of an individual type, but on the contrary the latter arises from the collective type. For a different order of facts Weismann likewise shows that *the race is not a mere prolongation of the individual; that the specific type, from the physiological and anatomical viewpoint, is not an individual type that has perpetuated itself over time, but that has its own course of evolution. Also the individual type has detached itself from the collective type, far from being its source. His views are, like ours, it seems, a protest against the simplistic theories that reduce the composite to the simple* (DL: 268, my italics).

Durkheim is here rejecting the empiricism of Spencer where categories are made by individual actions [similarly, see Durkheim (1915), p. 13], and Weismann is doing exactly the same in his own field. The resonance between the two views is exceptionally vivid here: just as in Durkheim, the social is outside the reach of individual, so in Weismann, the germ plasm is situated outside the reach of any "variation that takes place in individuals of the species." Exactly as in Durkheim, the social transcends the will and consciousness of the individuals, so in Weismann, the germ plasm is a transcendent entity "on which individuals get attached as excrescences" (Ansell-Pearson, 2003, p. 6). Durkheim certainly had in mind the following passage from William Platt Ball, a scientific popularizer quoted in the same footnote, who in his 1890 anti-Lamarckian text *Are the effects of use inherited?* made (correctly) a similar analogy to describe the new view of heredity:

Galton compares parent and child to successive pendants on the same chain. Weismann likens them to successive offshoots thrown up by a long underground root or sucker (Ball, 1890, p. 66).

It is likely that this type of analogy struck more than one chord in Durkheim. As we shall see in *Suicide* in particular, this new view of heredity became a sort of implicit scientific legitimation for Durkheim's primacy of the social as ontologically irreducible to individual actions, a *sui generis* thing. This ontological gap was the same Weismann had in mind for his own theory of heredity where "all parts of the body do not contribute to produce a germ from which the new individual arises, but (...) on the contrary, the offspring owes its origin to a

peculiar substance of extremely complicated structure, viz., the germ-plasm" (Weismann, 1893a, p. 11–12).

The Rules of Sociological Method (R, 1895)

Let us come now to the *Rules of Sociological Method* (Durkheim, 1895/1982). Here, there are neither explicit references to Weismann nor is heredity a particular central focus of this classic book. Durkheim's conceptual engagement with heredity can be considered transitional in this work, between the central treatment it takes in DL (an entire chapter) and the critical analysis of race and heredity in *Suicide*, which I shall address next. Nonetheless, in a text that is foundational in establishing boundaries between the social and other domains, and between sociology and other disciplines, from my hypothesis, it should follow that this could not happen without any evaluation of the parallel status of the biological. As is well known, the *Rules* is the book where social facts are defined in their exclusivity, as a self-standing category on which the professional monopoly of the sociologist can be fully exercised. As Durkheim writes, there is "a category of facts which present very special characteristics," something that "cannot be confused with organic phenomena, nor with psychical phenomena," a "new species" to which the term social "must be exclusively assigned." These special facts are "consequently the proper field of sociology" (R: 52). This is a seminal moment for the emergence of the social as a purified category, and it would be a significant challenge to my argument if this delimitation of the social could occur regardless of any take on biology.

Once again, radically overlooked by commentators, a passage in Chapter 4 clearly illustrates how Durkheim had, 2 years after DL, fully assimilated the Weismannian lesson. It is because of this incorporation that Durkheim, I want to argue, can establish a radically dichotomous mode of functioning between the social and the biological that breaks at its core any temptation to establish a synthetic social evolutionism as in Spencer. Let us offer a bit of context first. Chapter 4, the "Rules for the Constitution of Social Types," is the place where Durkheim lays out his "social morphology" aimed "to constitute and classify social types" (R: 111). Here, Durkheim introduces the key concept of social species as intermediate entities between the extreme nominalism of historians (with their "confused multitude of historical societies") and the realism of philosophers (with their "unique, although ideal, concept of humanity" R: 109). The notion of social species is foundational to the production of a system of social classification, a "complete scale of social types" starting from the simplest, the horde ("protoplasm of the social realm") and then, *via* a system of combinations and differentiation, the clan and more complex social forms and structures. The use of morphology in a taxonomic sense is obviously in analogy with its biological usage (Hirst, 1973). Are we then back to organicist sociologies that cannot distinguish the social from the natural? Durkheim seems to dance dangerously on the border of biological analogies, exactly in a text where the demarcation has to be neat and unambiguous. If morphology is a way of conducting research that is available to both sociologists and biologists, as commentators highlight (Lukes, 1985), from where can a radical difference emerge? How can confusion be avoided in the use of the cross-disciplinary notion of species? As Durkheim

recognizes, by using the notion of species, we are moving on a slippery terrain. As he claims: “there are social species for the same reason as there are biological ones. The latter are due to the fact that the organisms are only varied combinations of the same anatomical unity” (R: 116). This is obviously a situation of potential confusion, very much in need of a boundary that may help avoid any transgression of field. It is at this point that Weismann comes to hand. The passage is here worth citing in its entirety for the way in which it can dramatically separate social from biological species making use of the core anti-Lamarckian argument:

“However, from this viewpoint, there is a great difference between the two domains. With animals, a special factor, that of reproduction, imparts to specific characteristics a force of resistance that is lacking elsewhere. These specific characteristics, because they are common to a whole line of ancestors, are much more strongly rooted in the organism. They are therefore not easily whittled away by the action of particular individual environments but remain consistently uniform in spite of the diverse external circumstances. An inner force perpetuates them despite countervailing factors in favour of variation which may come from outside. This force is that of hereditary habits. This is why biological characteristics are clearly defined and can be precisely determined.” With the social domain, instead, things are radically different. As he continues: “In the social kingdom this internal force does not exist. Characteristics cannot be reinforced by the succeeding generation because they last only for a generation. (*Ils ne peuvent être renforcés par la génération parce qu'ils ne durent qu'une génération*). In fact as a rule the societies that are produced are of a different species from those which generated them, because the latter, by combining, give rise to an entirely fresh organisational pattern. (...) The distinctive attributes of the species do not therefore receive reinforcement from heredity to enable them to resist individual variations. But they are modified and take on countless nuances through the action of circumstances. (R: 116–117).

This text is extraordinarily dense and complex. It deserves to be analyzed carefully to see the different ways the modern view of heredity is incorporated and used for Durkheim's own sociological goals. First and more visibly, the difference between the biological and the social kingdom is made possible by the fact that inherited characteristics are impossible. The Weismannian lesson, still cautiously approached 2 years before, is now no longer in question, *at least for the social domain*. If acquired characteristics are heritable, as Spencer believes, the social would be coterminous with the biological, subject to the same regime of functioning: in biology as in culture, the next generation would inherit the acquisitions of the earlier one. Instead, we have here two very distinctive domains. The first is a domain of biological perpetuation based on an inner force that is insensitive to external signals: in this first domain, it has to be noticed, Durkheim uses an ambiguous language of

hereditary habits, but obviously he is referring to ideas of heredity as interiorized and hard, “not easily whittled away by the action of particular individual environments,” “consistently uniform in spite of the diverse external circumstances” (R: 116). A few years later, genetics will come to occupy this space of unresponsiveness to external signals. Out of this kingdom of biological reproduction, dominated by the inertial force of ancestral heredity, a second domain – the social – emerges, that lacks this inner force and is completely determined by “the action of circumstances” (R: 117). Here, once again supporting a minority interpretation of Weismann, what Durkheim emphasizes in the destruction of use-inheritance is emancipation from the yoke of heredity: “the societies that are produced are of a different species from those which generated them, because the latter, by combining, give rise to an entirely fresh organisational pattern” (R: 116). This resonates profoundly with Weismann's own interpretation of his work, i.e., “the hypothesis of the continuity of the germ-plasm gives an identical starting-point to each successive generation.” (Weismann, 1893a, p. 168). To go back to the main point, what we have here is a polarized scenario, in which the force of heredity is confined to the biological, and the freedom of change at each generation becomes to trademark of the social. What is missing? Nothing important to our eyes, but a substantial certainty for nineteenth century authors: the Lamarckian third way, an inner force of heredity, but shaped by the action of circumstances, a plastic heredity. In destroying this third way, the link connecting the social and the biological is also destroyed. Two different stories can commence, no longer at risk of *liaisons dangereuses*.

Suicide (S, 1897)

With *Suicide*, I come to the third and last stage of the incorporation of the hard hereditarian revolution as a key scientific support for the transcendence of the social. *Suicide* is the book where the social, in its autonomy and self-standing authority, finds “a new and especially conclusive proof” (S: 274). From this point of view, *Suicide* does not present a new argument but puts the insights anticipated in *DL* and *Rules* on a firmer base. The two key intuitions emerging from the two previous books are confirmed with a higher level of confidence by Durkheim. To reiterate, these are: first, that heredity is narrowed, delimited, and restricted to just the transmission of generic characteristics. It therefore loses the level of penetration and personalization given to it by the inheritance of acquired characteristics; second, that the social fully transcends individual deeds, exactly as race in Weismann's “positive science” transcends its individual members.

The first of these points is made repeatedly in the book on “the extra-social causes” of suicide. Heredity is not denied, so much as generalized to lose its penetrative force: “heredity” Durkheim writes:

plays an important role; but it is no longer the heredity of suicide. What is transmitted is the general mental affliction, the nervous weakness of which suicide is a contingent result, though one always to be apprehended. In this case heredity has nothing more to do with the tendency to suicide than with hemoptysis in cases of hereditary tuberculosis (S: 45).

The genericity of heredity is a key way to deny a direct and whole passage of “the tendency to self-destruction (...) from parents to children and which, once transmitted, gives birth wholly automatically to suicide” (S: 42) as in a hereditarian–psychological view of heredity. This is no longer possible because “what is transmitted is not the affliction itself but only a field such as to favor its development” (S: 43). A Lamarckian view would be open to a similar critique, whereby it is the personal experience of the previous generation that shapes the instinct of the next, making the relation between self-destruction in parents and in children more intimate. Once again, only hard heredity (in the sense of this less common reading of Weismann) may favor the secularization of heredity, making it a generic and less invasive force.

The second point repeats, in a more assertive fashion, the interaction with Weismann already highlighted in DL. It is worth following the text strictly because this is one of the key passages in the invention of Durkheim’s sociology, where Tarde is taken as the main target. Exactly at the end of this long passage, Weismann is called upon to offer scientific validation to the autonomy of the social as a transcendent, collective force. To offer again further context: this occurs in the chapter discussing the social element of suicide, part of Book II (Social Causes and Social Types). What Durkheim is arguing is that *Suicide* offers an empirical confirmation of his key intuition that the social is not merely a manner of speaking, an innocuous metaphor, or a cover for the reality of individual communication. The naive commonsense view in which only individuals exist and the social is ethereal has to be entirely reversed: “The individuals making up a society change from year to year, yet the number of suicides is the same so long as the society itself does not change.” The individual, not the social is the transient reality; Tarde is the enemy here:

It has been thought that this conclusion might be avoided through the observation that this very continuity was the work of individuals and that, consequently, to account for it there was no need to ascribe to social phenomena a sort of transcendence in relation to individual life (S: 272).

However, this is not how things work. What Tarde would like to persuade his readers is that anything regarding the social is about personal transmission “from an individual parent, teacher, friend, neighbor, or comrade to another individual.”

If we think of this model vertically, we can see how Tarde’s inter-individual approach is entirely isomorphic to the inheritance of acquired characters, where transmission is personal, from the experience of one generation to that of the next. This is for Durkheim the most flagrant misunderstanding of what the social (as a collective tendency) is; exactly as for Weismann personal heredity is the misunderstanding *par excellence* of how heredity as a collective entity works. Both forms of transmission, the social for Durkheim and heredity for Weismann, have instead a “very special nature” (S: 272), which must be recognized in its entirety.

A few pages later, Durkheim recapitulates the theme of the whole chapter and finds a scientific validation (or at least, a companion) to this anti-Tarde strategy. Again, it is worth citing the passage in its entirety:

Such a way of considering the individual’s relations to society also recalls the idea assigned the individual’s relations with the species or the race by contemporary zoologists. The very simple theory has been increasingly abandoned that the species is only an individual perpetuated chronologically and generalized spatially. Indeed it conflicts with the fact that the variations produced in a single instance become specific only in very rare and possibly doubtful cases. The distinctive characteristics of the race change in the individual only as they change in the race in general. The latter has therefore some reality whence come the various shapes it assumes among individual beings, far from its consisting simply of a generalization of these beings. We naturally cannot regard these doctrines as finally demonstrated. But it is enough for us to show that our sociological conceptions, without being borrowed from another order of research, are indeed *not without analogies to the most positive sciences*. (S: 285, my italics)

The first text Durkheim cites is Delage (*Structure du protoplasme*), a Lamarckian author, but the reference is specifically to the pages where Weismann is discussed. The second reference is explicitly to Weismann, “and all the theories akin to Weismann’s [*sic*]” Durkheim writes. Durkheim appears here like a solitary runner who raises his head at the end of a hard event to look for some support. Here, he finds Weismann: no matter the concession to the criticisms of his fellow nationals (“*We naturally cannot regard these doctrines as finally demonstrated*”), no matter the denial of any subordination or weakness of its sociological empire (“*without being borrowed from another order of research*”), Durkheim is content to have found an analogy in the positive sciences for his sociological anti-empiricism.

CONCLUSION

In this article, I have illustrated the strategic uses of Weismann’s work in Durkheim. Although I am not claiming that the German embryologist was his only scientific inspiration to purify sociology, what Weismann certainly offered to Durkheim was a precious scientific ally to get rid of the empiricism of Lamarckian theory in which heredity resulted from the *accumulation of individual variations*. After reading Weismann, this Lamarckian view was seen by Durkheim as completely analogous to the various sociologies that understood the social as *accumulation of individual actions*. In a Latourian sense (Latour, 1993), the *purification* strategy of Durkheim actually depended on a (*hidden*) *hybridization* with Weismann’s biology.

It is obviously important to delimit this claim of a radical purification to Durkheim’s own work, rather than the whole post-Durkheimian tradition (for instance, Mauss), or even the late Durkheim of *Elementary Forms* (1912) where the society–individual cleavage is somehow more nuanced.⁵ Nonetheless, with all the necessary qualifications and caveats, my reading of

⁵I thank the second reviewer for this important observation.

a profound hybridization of Durkheim on the Weismannian stock may contribute to offer an alternative reading of the schism between the social and the biological, from which I started.

According to a mainstream historiography, which informs handbooks and teaching materials, the social sciences at some point broke with outmoded biologicistic models, making themselves free for more sophisticated, non-organic ways of explanation. The social was finally discovered. However, why was this emancipation from outmoded ways of thinking possible, or even necessary, after a certain point? Historian Dorothy Ross argues, for instance, that, with reference to the American context, “from about 1880 to 1905 the social sciences did not appear to feel that their free borrowings [from biology] placed them under threat (...) After 1905, however, there is evidence of greater sensitivity to, and defensiveness against, both biology and psychology, in the face of new currents within these subjects – Mendelian genetics...” (Ross, 1993, p. 100). The argument is here that (to limit my analysis at the relationship with biology), when the pressure from the biological got worse, after 1900 (when Mendel was rediscovered, and, one can assume, eugenics started) the social sciences no longer felt comfortable sharing their epistemic premises with biologists. High tensions were emerging and a peaceful coexistence was now at risk. While the chronology of this interpretation is (more or less) correct, I think that the relationship between cause and effect is reversed. My article on Durkheim and Weismann, as my previous one on Meloni (2016b), illustrates how the social sciences *were not put under any greater threat* by biological arguments when Mendel was “rediscovered,” courtesy hard heredity. It is rather that *now for the first time, the social sciences found a way out from biologism*. Why? Because as a result of Galton, Weismann and genetics, biology made possible for the first time the circulation of a concept of heredity that was utterly separated from the social environment. In this way, the latter was freed from any direct connection with the biological. Heredity was secluded away in the germ plasm (later, in the gene), becoming less invasive than in previous Lamarckian forms. It was now possible to *distinguish neatly and for the first time* between heredity and sociocultural transmission. Durkheim’s sociological explanations of the reproduction of criminality in families is perfectly in line with what a geneticist like Thomas Hunt Morgan would say, three decades later, with regard to the epistemological shortcoming of the eugenicist’s pedigree. For Durkheim “we cannot determine the relative contribution of heredity among all criminal vocations, (...) [If] the son of a thief becomes a thief himself it does not follow that his immoral nature is a legacy bequeathed

him by his father. To interpret the facts in this way we would have to be able to *isolate the effects of heredity* from those of circumstances, education, etc” (DL: 257, my italics). In 1925, Morgan wrote similarly that: “The pedigrees that have been published showing a long history of social misconduct, crime, alcoholism, debauchery, and venereal diseases are open to the same criticism [i.e., conflating biological and social heredity] from a genetic point of view; for it is obvious that these groups of individuals have lived under demoralizing social conditions that might swamp a family of average persons. It is not surprising that, once begun from whatever cause, the effects may be to a large extent *communicated rather than inherited*” [my italics, quoted in Allen (2011), p. 201–2]. What seems a sociological gift, i.e., distinguishing communication from heredity, is in fact also perfectly in tune with the hard-heredity revolution promoted by Weismann that culminated with genetics. Morgan named it “the two-fold method of human inheritance” [in Allen (2011)], which clearly converges with Durkheim’s view of a homo duplex (S: 171 “man is double”) and Kroeber’s dualism between the organic and superorganic. Rather than being enemies, sociology and genetics have shared a certain epistemic contiguity in the twentieth century, where *a radical separation of heredity and heritage* was made possible (mostly *via* Weismann). Whether this will continue to be the case in the current century is a different matter that I cannot address in the limited space of this article.

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