

## **Norbert Elias, George Herbert Mead, and the Promise of Embodied Sociology**

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## **Introduction**

It is conceivable that Norbert Elias had come across Mead's name when he read Parsons, Goffman or Habermas, but there are no direct references to Mead in the Elias's corpus, nor is there any evidence that Elias was influenced by Mead. Authors like Richard Kilmister (1991: xvii) maintain that the evolutionary perspective on language acquisition "makes Elias's efforts unique among contemporary sociological approaches to symbol formation." This statement is a clear indication that the remarkable parallels between these two sociologists have escaped Elias as well as students of his work. To rectify the situation, I explore the selective affinity between these sociological classics, with special attention to embodiment as a key sociological problem which, until recently, has been relegated to the periphery of sociological theory and research.

I begin with a few biographical points and stylistic features illuminating the two sociologists, then single out the theoretical issues on which their views converge and conclude with the emergent research program that can benefit from the ideas championed by Elias and Mead. My emphasis on the convergence of these two authors does not imply that they saw eye-to-eye on key points, as I highlight how the two thinkers differ in their respective research agendas. My chief concern is with the continuity of programs articulated by Elias and Mead and the prospects for combining their insights in a project of embodied sociology that incorporates recent findings of social neuroscience, behavioral epigenetics, and cultural biology.

### **Biographical Context and Intellectual Sources**

Mead was born in 1863 and died in 1931. Elias, who was born in 1897, lived until 1990. Their life spans overlapped by 34 years, which can explain in part their shared intellectual sources and formative influences. Despite different biographical circumstances – Mead was an established professor teaching at a major American university while Elias was an émigré struggling to secure a foothold in British academia after fleeing Nazi Germany – the two were shaped by many of the same historical and intellectual currents. Both thinkers were schooled in the classical German philosophy that favored the historical approach, frowned on conceptual dichotomies, and urged the dialectical mediation between mind and matter, culture and nature, individual and society. Each author learned from Darwin to frame consciousness as a product of natural evolution and sought to divest scholarly discourse from the vestiges of religion. Wundt, Dilthey, Baldwin, Freud, and other luminaries of that era who pondered the mystery of mind and language were

well known to Mead and Elias. Both authors strongly favored an interdisciplinary approach and immersed themselves in contemporary psychology, physiology, biology, physics, philosophy, taking up topics deemed marginal in the sociological domain. Elias (1991: 18) decried “academic departmentalization and its rivalries” that precluded cooperation across the divides separating scholarly domains. The bureaucratic rationalization process which encouraged the compartmentalization in academia was less pronounced in Mead’s time, though it was gathering force in the latter part of his intellectual career and may in part account for the fact that Mead’s interdisciplinary forays attracted modest attention during his lifetime.

Perhaps the most salient feature that draws together Mead and Elias and gives their intellectual styles a characteristic touch is the commitment to understanding self-consciousness and social behavior in their evolutionary context. Language, mind, self, emotions, physiological functions, the Central Nervous System have never stopped emerging, according to Mead and Elias. They sprang to life in the course of evolution and kept adapting to social realities throughout human history, a process that has left a powerful imprint on our body and mind. Elias’s sociological sensibilities were shaped by the Weberian preoccupation with cultural forms in their historical context, and it is unmistakable in his research on the civilizing process, affect control, court society, the Enlightenment and Romantic movements. Mead had a keen interest in many of the same cultural formations, his theories nourished by American pragmatist philosophers as well as German scholars like Dilthey, Simmel, and Windelbandt, even though he approached the subject as a social philosopher, historian of ideas, and evolutionary psychologist rather than as a historical sociologist the way Elias did.

Given this shared background, it is not surprising that Mead and Elias developed theories that shared several key traits. Chief among those are (a) the evolutionary perspective on social phenomena, (b) the dialectical transcendence of conceptual dichotomies, (c) the process-centered outlook on social life, (d) the pragmatist emphasis on the interfaces of action-emotion-thought, (e) the determination to bring into one continuum mind, language, and society as dimensions of an ongoing single process, and (f) the naturalist attitude toward the embodied character of socio-cultural reality that manifests itself in somatic-affective, symbolic-discursive, as well as normative-value structures.

Below I offer a brief outline of theoretical and methodological premises developed by Mead and Elias.

## The Evolutionary Perspective on Social Phenomena

Both scholars firmly believed that it is methodologically unsound to grapple with social phenomena as they manifest themselves in contemporary society, fully formed and normatively codified, and gloss over the evolutionary processes which brought into existence specific social formations. Nor is it appropriate to focus on the distinctly human stages of the evolutionary process and ignore the continuity between higher primates and Homo Sapience. At issue is the evolutionary tipping point where cultural reality assumed its unmistakably human forms, i.e., the paleontology of socio-cultural phenomena like language, social institutions, artworks and cultural artefacts. Ultimately, social scientists need to explain how social reality attained its distinctly human form, how language and culture differentiated themselves from their distant relatives and immediate precursors in the animal kingdom. Elias (1991: 145) articulated this precept thus: “It is difficult to imagine how social scientists can gain a clear understanding of the fact that nature prepares human being for life in society without including aspects of the evolutionary process and of the social development of mankind in their vision.” His unfinished book, *Symbol Theory* (1991), is an inquiry into the evolutionary origins of consciousness and symbolic communication, and as such, it bears an uncanny resemblance to George Herbert Mead’s *Mind, Self, and Society* (1934).

Mead gave the evolutionary argument an even more radical twist, insisting that the roots of social phenomena like selectivity, reflexivity, delayed response, and mindedness should be traced all the way back to the physical domain where proto-sociality manifest itself in the form of physical relativity (1938: 606; 1932: 52-81; Shalin, 2000: 315-319). “If we accept those two concepts of emergence and relativity,” urged Mead (1934: 141, 330), “all I want to point out is that they do answer to what we term ‘consciousness,’ namely, a certain environment that exists in its relationship to the organism, and in which new characters can arise by virtue of the organism.” A human being, according to Mead (1938: 201; 1943: 130), is simultaneously a mechanism, an organism, and the self, and to understand the peculiarly human mode of being in the world we need to examine how these three evolutionary emergents coalesce in a manner characteristic of human life (Shalin, 2000: 319).

The sweep of this argument is far-reaching indeed. It goads us to see that social reality need not, and should not, be considered in isolation from biological and physical phenomena which exhibit some rudimentary forms of interactivity and sociality. Without denying the qualitative uniqueness of the world inhabited by Homo Sapience, Mead proposed that social

scientists look at physical relativity as a protosocial phenomenon in which the body's identity (mass, speed, position in space and time) is contingent upon its interaction with other bodies inhabiting alternative inertial systems. The human ability to take the perspective of the other and act with reference to disparate selves is, in this reckoning, the most advanced form of relativity known to science (Shalin, 2000; 2017b).

The biological world exhibits its own form of relativity. It is evident in the fact that living creatures create an environment answering to their needs and sensitive to their distinct activities (e.g., organisms with digestive tracts transform grass as an organic matter into food). It is in this connection that Mead talks about "a relativity of the organism and its environment, both as to form and content.... Emergent life changes the character of the world just as emergent velocities change the characters of masses" (PA, p. 178 and PP, p. 65). At the level of self-conscious organisms, reality's interactive properties are manifest at every evolutionary level – mechanical, organic, mental, societal.

For Elias, just as it is for Mead, the object of social science is "the network of dependencies intersecting in the individual," powered by symbolic communication, and shored up by information storage technologies (Elias, 1939/1982: 88). No human agent, or any social phenomenon for that matter, subsists by itself; it exists on the intersection of various networks that inform its social identities and imagination continuously evolving across time and place. Elias's essay on a singular genius, Wolfgang Amadeus Mozart, illustrates this point (Elias 1993). In this study, Elias shows how Mozart's self-understanding and behavior was informed by rival social niches he inhabited, how his emotional makeup and musical creativity was stimulated and hobbled by historical crosscurrents in which he was caught, and how the incompatibility of social circles-networks in which he travelled ultimately spelled his doom.

### **A Dialectical Negation of Conceptual Dichotomies**

From Plato and Aristotle, Western metaphysics tended to think in binary terms such as mind and matter, nature and culture, the individual and society. Other metaphysical systems that took their clues from Heraclitus endeavored to grasp reality as a continuous flux, but it was not until Hegel that dialectical reasoning reinscribed the polarities as dimensions of the same reality punctuated by the tension between nodal points in a conceptual continuum. We see this dialectical strategy at work in Elias and Mead.

Elias decried the tendency to posit “a bipolar antithesis such as ‘nature and culture,’ ‘body and mind’ or ‘subject and object’” (Elias, 1991: 5) as an unfortunate trait of contemporary sociological discourse, especially prominent in Parsons’s theoretical constructs (1978: 219-263). “At present people seem to be generally inclined to treat human nature and human society as if these terms referred to totally separate compartments of the human existence... This blocks the way, amongst other things, to a full understanding of the fact that, in the form of a language, nature and society, or if one prefers, nature and culture, are firmly locked into each other” (Elias, 1951: 51-52). “Language, thoughts, memories and all the other aspects of knowledge complexes are not treated here as either individual or social,” explained Elias (1991: 12, 19-20). “They are always perceived as potentially and actually both, social and individual at the same time.”

Mead raised equally strong objections to folding the individual-society continuum into separate domains, one designating the natural individual kept in check by society, the other referring to the sovereign domain of norms and institutions hovering above individuals (Mead, 1934: 141). The very question of what comes first, the self or society, is malposed, according to Mead (1934: 227, 144): “Human society as we know it could not exist without minds and selves, since all its most characteristic features presuppose the possession of minds and selves by its individual members; but its individual members would not possess minds and selves if these had not arisen within or emerged out of the human social process... The organization and unification of a social group is identical with the organization and unification of any one of the selves arising within the social process in which that group is engaged.”

This strong philosophical predilection for a dialectical negation of binary oppositions compelled Mead and Elias to search for theoretical schemas and methodological strategies conducive to grasping culture in its concrete, individual forms and explicating personal and psychic events in their socio-historical context.

### **The Process-Centered Perspective on Society**

There is a notable tendency to elevate structure over process in the 20th century sociology. Structural functionalists exemplify this tendency, which privileges the stable, the normal, the calculable in social phenomena and downgrades the chaotic, the deviant, and the novel aspect of social reality. The latter properties come to the fore in the theories developed in the interactionist theory of George Herbert Mead and the figurational sociology of Norbert Elias. Neither thinker overlooks the structured, patterned character of social life, yet each seeks to

describe social structures as they are constituted by group members whose affective dispositions and mindful conduct produce and reproduce social structures.

Elias champions “a process-sociological approach” and strives to “do justice to the process-character of the observable social data” (Elias, 1991: 16; 1993: 10). One of his articles, subtitled “A Process-Sociological Essay” (1987b), explains that a “process sociologist’s concern with human emotions... centres on both characteristics of human emotions which they share with non-human species and others are uniquely human and without parallel in the human kingdom” (Elias, 1987b: 339). Mead is equally insistent that social phenomena of any scale are simultaneously structures and processes, that at the core of every society is “an ongoing interaction,” that social science grapples with the “self as a certain sort of structural process” (Mead, 1934: 165). Society is comprised of groups, organizations, institutions that constrain individual action; however strictly enforced, such socio-historical formations are sustained in situ and in actu, i.e., in face-to-face interactions of flesh and blood humans who reproduce the dominant perspectives, temporal order, and stratification patterns. When humans fail to lend social structure their agentic substance through their self-identifications and start processing the situations in a novel perspective, the institutional cohesion breaks down and yields to novel embodied forms. Social universals are permeable and fuzzy; their corporeality is contingent on the individuals’ capacity to play their part, and when they fail to identify with a given role and take the perspective of the generalized other, the solid structures of this world show their reified character and historically constructed nature. Social formations grow brittle and eventually crumble, as self-conscious agents stop following normative imperatives in a prescribed manner and resort to alternative ways of self-identification. Says Mead (1936: 164), “You cannot have a process without some sort of a structure, and yet structure is simply something that expresses this process as it takes place” (MT: 164). Social structures are emergent just as individuals caught in these structures are socially constructed. How human associations come into being and are transformed in social interactions is one of the central concerns of Chicago sociology.

### **Affect, Reason, and Intelligence**

Consistent with the pragmatist approach is Elias’s willingness to take issue with “an age-old tradition which suggests an absolute divide between nature and non-nature straddled by human beings” (1987: 341). Where classical sociologists saw a binary opposition, Elias discerned the “dovetailing of a biological process of maturation and a social process of learning in a human

child [which] brings to light the hinge connecting human nature and human society” (Elias, 1987: 348). Crucial in this respect is the child’s capacity to master language “symbolically representing in his mind the structure and direction of the flow of events” (Elias, 1987b: 46). Mead developed this point in great details.

For all the similarities, the two authors diverge at this junction. Elias (1987b: xxiv) accentuates “the involvement-detachment balance” that comes into play when human affect is curbed by social conventions and rational control is established over emotions. In doing so, he tends to emphasize the negative potential of emotions and valorize the curative powers of the intellect. “Strong human drives, strong affects and emotions, exert upon people strong pressure to act,” leaving humans little time to choose the most rational course of action (Elias 1987b: 105). Whereas Elias ties rational conduct to emotional detachment, Mead doesn’t prejudge the (ir)rationality of emotions. His position is closer to that of his colleague and friend John Dewey (1922/1950: 195-196) for whom “‘Reason’ as a noun signifies a happy cooperation of a multitude of dispositions, such as sympathy, curiosity, cooperation, exploration, experimentation, frankness, pursuit – to follow things through – circumspection, to look about at the context, etc., etc... Rationality, once more, is not a force to evoke against impulse and habit. It is the attainment of a working harmony among diverse desires.” Roused by passion, human behavior need not surrender its rationality. The “biological individual” or the “I” phase of personality, according to Mead, is a source of embodied values and innovative impulses which bring into the individual’s experience unanticipated consequences of rational actions and point to new avenues for creative symbolization and conduct.

Elias would have found this pragmatist precept dubious, as he equates a “higher level of detachment and emotional restraint” with reason (Elias, 1987b: 57) and valorizes “humanity’s symbol emancipation, its liberation from the bondage of largely unlearned or innate signals and the transition to the dominance of a largely learned patterning of one’s voice for the purposes of communication” (Elias, 1991: 53). From the pragmatist vantage point, an unhinged intellect beholden to a cerebral schema and insulated from affect is bound to encounter unanticipated consequences defeating rational calculations (Halton 1997). The balance of reason and sentiment, the check each one can place on the other, requires a closer examination, both theoretical and empirical, than we find in Elias.

Despite these differences in emphasis, both theorists agreed that the emergence of symbolic communication and reflexive conduct radically altered the course of evolution by



turning a blind process into a directed one, enabling humans to anticipate the future and furnishing them with a measure of control over their destiny. As “the process of evolution has passed under the control of social reason,” writes Mead, minded individuals “have come into some degree of control of the process of evolution out of which they arose” (PA, pp. 508, 511). Or as Elias put it, “The bio-logical dominance gained by learned forms of conduct links irreversible evolution to reversible development” (Elias, 1987b: 351).

### **The Continuum of Mind, Language, and Society**

Hegel, Schleiermacher, Marx, and other 19th century philosophers indulged in speculations about the bond between consciousness, language, and society. It was not until Peirce, James, and Mead, however, that the dialectics of mindfulness, symbolic interaction, and societal dynamics became the subject of systematic inquiry. Norbert Elias’s symbol theory follows a similar train of thought.

Elias is impressed with “the almost unlimited capacity of human groups for absorbing, storing and digesting novel experiences in the form of symbols” (Elias, 1991: 35). According to Elias, “biological and social processes depend on each other; they dovetail into each other when human beings first learn to speak a language. Far from being as independent as the respective academic professions and departments want it to be, the biological disposition for learning a language which matures in the early days of every human being, is by nature dependent on social activation, on the stimulating contact with other persons speaking a specific language, the language of a specific society” (Elias, 1991: 19-20). According to Elias (1991: 47), “It is only in and through dialogues with others that a child develops into an individual person,” a self-conscious being. “Consciousness is merely another word for the condition in which stored sound-symbols, or in other words knowledge as a means of communication, can be mobilized at will in the normal way” (Elias, 1991: 120).

This premise is central to Mead who devoted much of his professional career to investigating how language and meaning evolve within the matrix of social relations, how mindful conduct derives its powers from a group in which the individual is implicated in a joint act, and how language-aided conduct frees humans from dependence on instinct. Mead’s writings on language acquisition are more detailed and advanced than Elias’s, which is understandable given that Elias did not finish his study of symbolization process. Still, he adds a

fine observation not found in Mead when it comes to the distinction between the languages found in the animal kingdom and human society.

Animals have languages and communicate incessantly, although the repertory of signs observed in protosapient species is very limited. The languages found among animals tend to be species-wide: they vary between species rather than within species. Wolves in North America would instantly understand the messages that their counterparts send in Scandinavia, dolphins on the Pacific Coast communicate through the same signals as dolphins in the Atlantic Ocean. By contrast, human languages are group and culture specific: hundreds of human languages and dialects are found within the human species, and these languages continue to evolve, or as Elias would rather say, “develop.” This evolutionary dimorphism stems from the fact that animal communication systems are primarily the product of biological evolution whereas human languages reflect the powerful impact of socio-cultural forces. “My suggestion,” writes Elias (1991: 28), “is to reserve the term ‘evolution’ for the processes of the first type, for biological processes dependent on gene structure and to reserve the term ‘development’ for a non-evolutionary kind which only groups of human beings can undergo, but not groups of apes.”

In Mead’s symbolic interactionism and Elias’s figurational sociology, society transpires as an ocean of overlapping field-formations pulling individuals into their orbit, rearranging their affective and cognitive circuits, triggering their interactivity, which in turn reproduce and transform structural arrangements. Both theorists are quick to point out that norms and conventions do not turn humans into automatons. As members of diverse groups, humans feed off crosscutting pressures and respond selectively and creatively to competing demands.

### **The Embodied Nature of Socio-Cultural Reality**

Classical social theorists were inclined to compartmentalize the biological and sociological phenomena, treating the biological givens as a common denominator, a natural foundation on which society erects its autonomous edifice. Marx acknowledged biological needs all humans share – the requirements of food, shelter, and reproduction, and the alternative means by which societies satisfy these universal needs (Marx 1844/1964), yet he did not take up the confluence of the biological, affective, and social processes as a research problem in its own right. By contrast, Mead and Elias considered the interpolation of the biological, physiological, psychological, and social processes crucial for understanding the human condition.

“Far from being polar opposites,” wrote Elias (1991: 6, 37), “in the human case biological and the social processes in order to become effective must interlock... From early days the processes of nature and culture intertwine.” Culture makes itself felt only in and through nature – it inscribes itself in the human body, manifests itself in emotional displays, makes visible norms or conventions. Hence, it is imperative for the social science to show how social or cultural precepts are rendered in the flesh, how they are inscribed in the human body, for “all forms of human conduct can be located on the map of the organism” (Elias, 1991: 88).

Mead’s pragmatist theory is grounded in the same naturalist premise according to which culture is embodied and body is uncultured. Already as a graduate student, he focused on the bio-psycho-social continuum as fundamental for understanding social dynamics, insisting that “the body and soul are but two sides of the same thing,” that “our psychological life can all be read in the functions of our bodies,” that “it is not the brain that thinks but our organs insofar as they act together in the processes of life” (Mead Papers, letter to the Castle family, June 1892, box 1, folder 3). Later on, Mead would zero in on the development of the human brain and Central Nervous System as bio-physiological structures that make possible self-conscious conduct and signal human collective behavior. “[I]t is the function of the central nervous system in the higher forms to connect every response potentially with every other response in the organism... The central nervous system, in short, enables the individual to exercise conscious control over his behavior. It is the possibility of delayed response which principally differentiates reflective conduct from nonreflective conduct” (Mead, 1932: 125; 1934: 117). This precept applies not only to phylogenetic evolution and ontogenetic development; it retains its force in the sitogenetic inquiry which tracks the conduct of individuals fully formed by the evolutionary forces, endowed with self-consciousness in the course of ontogenetic development, and navigating the shores of everyday life (Shalin 2000). The CNS continues to evolve throughout the individual’s life, allowing the agent to form new associations, coordinate disparate responses, channel bio-neuro-symbolic inputs into mindful conduct, and situationally reconfigure structural arrangements from which this conduct emerged.

As Mead and Elias zero in on the “interlocking of biological, social and individual processes” (Elias, 1991: 128), they do not lose sight of the fact that bio-physiological heritage continues to evolve in response to social pressures. The socio-cultural developments transform the way in which body circuits are mobilized in human society, elevating to a new level the “interplay between learned and unlearned forms of steering behavior” (Elias, 1987: 358). Elias

illustrates this point using human smile as an example. The latter “can be deliberately used to convey to others a rich variety of shades of feelings. It can be a hesitant, a withdrawn, a broad, a triumphant, a supercilious and even hostile smile. And yet in all those cases a learned and deliberate steering of conduct merges with an unlearned form of steering one’s face muscles” (Elias, 1987: 359).

Evolution diminished the human agent’s dependence on instinct and impulse, which help the individual respond automatically to situational challenges. The civilization process did not obviate the dependence on the organism’s emotional resources. “Nor did evolution of biological structures needed for learning of verbal communication totally destroy the means of pre-verbal communication. Instances of the latter such as smiling, groaning or crying in pain, still have a vivid function in human relations” (Elias, 1991: 30). There are situations where excessive self-control is counterproductive, as for instance on the battlefield or in sport arena: “Force, skills, courage and a hot temper may be here of greater value for a person’s survival than a high capacity for sustained self-control – even though a bit of reflection may still help” (Elias (1987b: 47).

Mead makes a similar argument when he points out that learning significant gestures does not render nonsignificant somatic motions irrelevant in social interaction. Humans depend on their capacity to read facial expressions, body postures, affective signs, which are not always aligned with cerebral attitudes and signaled intentions – all the behavioral indexes which let us glean the shape of things to come and adjust our own responses, sometimes quite instinctually. Emotions evade close monitoring and escape conscious control; they are often more transparent to others than to the agent. While “no emotion of a grown-up human person is ever entirely unlearned, genetically fixated reaction pattern” is not amenable to total control either (Elias 1987: 352, italics omitted). The subtle interplay between nonsignifying and significant gestures is exemplified in the “face [that] evolved into a signaling board” which integrates biological resources with symbolic skills (Elias, 1987: 357).

### **Advances in Embodied Sociology**

Mead and Elias did not live long enough to witness the arrival of what is hailed today as “neurosociology,” “cultural neuroscience,” “pragmatist neuroscience,” “epigenetics revolution” – budding research fields that emerged in the face of growing evidence of “the brain’s social responsiveness (minds created by communities)” (Brothers 1997:108; see also TenHouten 1997,

2013; Massey 2001; Franks and Smith 1997, 1999; Franks and Ling 2002; 2013 Shihui et al. 2013; Meloni, Cromby, Fitzgerald, Lloyd 2018; Turner and Machalek 2018; Turner, Schutt and Keshavan 2019, 2020). These momentous developments vindicated our authors' dialectical premises and upheld their sensitivity to the issues of embodiment. The new turn in life sciences is grounded in the notion that "biological matter itself, be it genomes, brains, diseases or viruses, is simultaneously irremediably social, not only in its form but also in its content. And vice versa: the very fabric of sociality is always enabled, mediated and modulated by fleshy substrates – be they genetic or epigenetic, nutritional, metabolic, hormonal, behavioural, or toxicological. At all levels, the biological and the social are in one another" (Meloni, Cromby, Fitzgerald, Lloyd 2018: 6). So impressed was the editorial board of *Nature*, the bastion of hard science, with the emerging evidence that social forces play a vital role in sculpting human biology, that it issued a call to social scientists to come onboard and contribute their research (Nature 2012).

Investigations in brain-language coevolution illuminates this point. Evolutionary biologists and linguists traditionally assumed that protosapient organisms must reach a tipping point in its neocortex growth before language starts its ascent in hominid community. Nowadays neuroscientists argue that "language itself was part of the process that was responsible for the evolution of the brain" (Deacon, 2003: 5), that this "coevolutionary process resulted in language and the brain evolving to suit each other" (Schoenemann 2009: 163; cf. Deacon, 1992; Chater and Christiansen, 2009). As language and the brain coevolved, natural and social selection unfolded simultaneously, with each attaining causal significance and neither assuming causal primacy. The relationship between organism and environment is notable for its interdetermination and bidirectionality: natural selection favoring biological adaptations to environmental pressures increases a species' survivability, but collective efforts to build a hospitable environment loop right back to the biological developments of organisms inhabiting a given ecological niche. Community members' ability to cooperate puts a premium on communication skills, with the individuals excelling in decoding and sending messages enjoying reproductive advantages. A community-wide system of significant gestures, sounds, and signs gave language-rich tribes a competitive advantage against communication-poor ones. This dynamic is not confined to higher primates, according to neo-evolutionist thinkers: "Beavers' bodies have evolved in adaptation to the world that beavers created. It's a kind of complex ratcheting effect in which what you do changes the environment that produces the selection on your body" (Deacon, 2003: 6). The offshoot of this approach is a new understanding of causality

that valorizes its bidirectional nature. “We want to reduce the cause to an invention in history, a famous man who makes something happen, to a discovery or to a single gene that makes it happen or some biological accident that makes it happen. We have a real difficulty when cause is distributed, when the cause is in many places at once in which the consequence is the result of a convergence of these influences, no one of which is the cause” (Deacon, 2003: 28-29).

A kindred line of reasoning propels “cultural neuroscience” whose proponents make the case for “culture-gene coevolution” and “the “bidirectional, mutual constitution of culture, brain, and genes” (Chiao and Ambady 2007: 238; Chiao et al. 2012; Kitayama and Park 2010). An oft-cited example is the lactose tolerance acquired by residents in Northern Europe in the geographical areas where they could rely on cattle milk as the source of protein. Intriguing though more controversial is the claim that cultural values like individualism and collectivism are associated with distinct biomarkers, notably the short and long alleles controlling serotonin production. The S alleles are prominent in nations with a strong collectivist orientation and the L alleles are prevalent in cultures favoring individualism (Chiao et al. 2012). The sensitivity to social norms, “tightness or looseness” as cultural neuroscientists refer to it, is in turn linked to differences in habitat. Stricter adherence to public norms is found in populations occupying ecological niches hobbled by persistent threats (e.g., territorial invasions, food shortage, pathogen exposure) while tolerance to norm-breaking and innovation are more common among people residing in relatively peaceable ecological niches (Gelfund et al. 2011; see literature review in Chiao et al 2012).

The Human Genome Project stimulated fresh thinking about the heredity/environment entanglement, though not in ways traditional biologists anticipated. The project findings proved more than a bit embarrassing to the proponents of “hard heredity” who sought to link behavioral propensities and health abnormalities to specific genes. What they discovered, instead, was that the amount of variance reducible to genetical characteristics was less than overwhelming. Epigenetics – the study of an organism’s ability to “tailor phenotype to ecological conditions irrespective of genotype” (Wells, 2010: 3) – furnished strong evidence that phenotypes are sensitive to environmental factors such as parental practices, traumatic incidents, socioeconomic status, in short, to all manner of nongenomic forces. Newborn rat pups prodigiously licked and groomed by their mothers, studies showed, grow more social and impervious to stress than those raised by abusive parents, the effect traceable to the hypermethylation in the hippocampus that overstimulates glucocorticoid production in the abused offspring (Champagne, 2018: 232-233).

One should be cautious applying these findings to a human child (who unlike rats is usually raised by more than one adult), but research on neglect and trauma suffered by humans in their formative years reveal similar effects of hyper- and hypomethylation on stress tolerance. Children evacuated from London during the Second World War to spare them from the horrors of bombing raids grew up more anxious away from their parents than their counterparts who stayed in London with their loved ones (Mawson, 2016). Lasting epigenetic changes were also detected in victims of the “Dutch Famine” living in the Western Netherlands during WWII. Adverse neurological, cardiovascular, and metabolic effects of this experience persisted into the next generation (Kelly and Kelly, 2018: 597). The role of “adverse childhood experience” has been documented in a massive survey which showed the devastating impact that early traumatic experience had on children, who later in life showed elevated rates of depression, suicide, cancer, and neurological disorder (Kolk, 2014: 145-149).

Advances in neuroscience methods offered further illuminated the biosocial continuum. With functional magnetic resonance imaging (fMRI) letting scientists to observe in real time the blood flow in the brain of subjects performing socially-charged tasks (Förster, 2017), researchers were able to mark brain areas associated with specific mental operations like moral reasoning and self-assessment. Remarkably, they managed to pinpoint group level neurological differences among people shaped by disparate cultural experiences (Scheve, 2003; Chiao et al, 2010). Emotions, an area singled out by Elias as sensitive to socio-cultural pressures, received much attention by neuroscientists investigating “social brain, defined as a specific network of functionally and anatomically distinct cortical and subcortical regions modulated by particular neurotransmitters, such as dopamine, and closely linked neuropeptides of oxytocin and vasopressin” (Nestor, Choate, and Shirai, 2015: 109). Social brains evolved in response to the increasing pressure to cooperate, read intentions of mates, anticipate actions of foes and friends. The rich affective palette accompanying social interactions, experimental studies found, amends and occasionally overrides slower-pace conceptual thinking with the help of “somatic markers” left by past experiences that had produced strong negative or positive emotions. Affective memory marks previous occasions according to their emotional significance and then feeds this information into the “body loop” that activates somatic markers and guides behavior in novel situations (Damasio 2003: 148; see also Damasio 2012; Finger 2001; Thompson 2014; Tomasello 1998, 199, 2008). This line of research, while affirming the vital role that emotion

and affect control play in social life, assigns a more positive role to affect in relation to reason than Elias was ready to theorize.

A promising research program has been advanced by Jonathan Turner, Richard Machaleck, Russell Schutt, and Matcheri Keshavan who teamed up to articulate a blueprint for a “new evolutionary sociology” seeking “to incorporate insights from evolutionary biology and psychology into the sociological canon” (Schutt and Turner 2019: 357). In a broad overview of the knotted history of evolutionary thinking in sociology, the authors show the growing sensitivity among evolutionary biologists and psychologists to the “non-Darwinian sociocultural selection” operating alongside “the Darwinian selection working directly on individual phenotypes and underlying genotypes” (Turner, Schutt, and Keshavar 2020: 9). While the new research had an impact on the neighboring social sciences, the authors contend, sociologists have been slow to take advantage of the latest developments and contribute to the emerging synthesis of biology, physiology, neuroscience, and sociobiology. The new evolutionary sociology may help escape the circular reasoning implicit in the Darwinian program that treats survivors as the fittest members of the species and defines fitness as the ability to survive in the competition for resources. Missing in the classical synthesis is the conceptually grounded appreciation that diverse sociocultural pressures send conflicting signals as to the most adaptive behavior and that epigenetic mechanisms confer developmental advantages without the benefit of genetic coding. Of special relevance for the task I set for myself in this essay – illuminating the embodied dimension of the Mead-Elias program – is the argument developed by Jonathan Turner and his colleagues according to which “long before spoken language and capacities for symbolic culture could evolve as the neocortex of the brain grew, subcortical emotion centers grew and provided the needed behavioral trait – emotionality – for hominin and, hence, human survival” (Turner, Schutt, and Keshavar 2020 : 24). This insight dovetails with the notion of bio-psycho-social continuum advanced by Mead and Elias and buttressed in the research outlined above.

The old distinction between organism and environment is fast eroding as researchers focus on the embodiment process incorporating social patterns into an organism’s vital functions. “There is nothing about the body that forms a solid boundary – or threshold – between it and external environment,” insist Guthman and Mansfield (2013: 12-14). The ongoing “interchange of environmental and bodily molecules suggests a transformation in what we mean by ‘nature’ and ‘nurture’ such that the lines between them are being erased” (quoted in Meloni and Testa 2014: 214). Parenting style, food insecurity, social isolation, status anxiety, racial



discrimination, disparities in socio-economic status – all these factors operating on the individual and group levels have been shown to leave traces in the human body. The resultant differences manifest themselves in health disparities and emotional disturbances captured in “the social health gradient” mirroring an unequal social capital distribution among different strata of society (Hoffman, Kroger, and Pakpahan 2018: 616; Kelly-Irving and Delpierre 2018).

Recent advances in social neuroscience revealed the “intrinsic plasticity of the human brain” (Shaw & McEachern 2001). Neuroplasticity stems from the discovery that the brain continues to produce new cells into adulthood; such changes acquired at different stages of the life cycle are cognitively and behaviorally consequential. Insofar as these changes reflect environmental conditions and malleable social disparities, they raise hopes for social amelioration and invite policy interference (Gould et al. 1999; Shihu et al. 2012).

### **Toward Sociology of Embodiment**

Sociologists were slow to join issue with social neuroscientists and behavioral epigeneticists. Their approach to the embodiment process differed from the one developed in the life sciences where “‘embodiment’, as an idea, refers to how we, like any living organism, literally incorporate, biologically, the world in which we live, including our societal and ecological circumstances” (Krieger (2005, quoted in Kelly-Irving and Delpierre 2018: 519). By contrast, sociologists tend to focus on symbolic construction of the body, culturally informed somatic performances, and the lived experience of human beings empowered and stigmatized by social conventions. For Moore and Mathias (2016: 1), “Embodiment is the quality of having a body, and perceiving and being in the world through the body.” According to Waskul and Vannini (2006: 2), “the term ‘embodiment’ refers quite precisely to the process by which the object-body is actively experienced, produced, sustained, and/or transformed as a subject-body.”

This approach goes back to the pioneering work of Marcel Mauss who set out to investigate “techniques of the body” acquired by folks raised in different social circumstances, e.g., “a girl who has been raised in a convent...will walk with her fists closed” (Mauss 1978:35). Pierre Bourdieu took his clue from Mauss and developed it into a theory according to which “the body is in the social world but the social world is in the body” as manifested in behavioral habitus, the latter standing for “corporeal knowledge,” “history incarnated,” and “a kind of infallible instinct” (Bourdieu 2000a:152, 151, 135, 177). Habitus enables agents shaped by the differential infusion of social, symbolic, and cultural capital to perpetuate their under/privileged

status by ostentatious displays (“the most typically bourgeois deportment can be recognized by a certain breath of gesture, posture and gait [in] contrast[.] with working class haste or petty bourgeois eagerness” (Bourdieu 1984: 102, 218). Michelle Foucault is another sociologist who made a significant contribution to this tradition by examining “biopower” and “technologies of the self” which turn human beings into obedient subjects with rigged self-concepts and pleasure-pain centers suborned by extant powers in furtherance of control (Foucault 1977, 1998).

To-date, an impressive body of theory and research has accumulated in this tradition. Its champions examined the construction of stigma-bearing bodies, the misogynist misappropriation of female physiques, cultural performances of transgender persons, and other groups subjected to cultural sculpting (for an overview, see Schelling 1999; Waskul and Vannini 2006; Adelman and Ruggi 2012, 2015). Nowadays, we are beginning to see an effort on the part of sociologists to establish a dialogue with neuroscientists (Brothers 1997; TenHouten 1997; Massey 2001; Franks and Smith 1997, 1999; Franks and Ling 2002; Shihui et al. 2013; Meloni and Testa 2014; Meloni 2016; Meloni, Cromby, Fitzgerald, Lloyd 2018). Tellingly, they cite George Herbert Mead as a scholar who anticipated the need to mount an interdisciplinary inquiry into the biological and physiological dimensions of social processes. Mead’s musings about the Central Nervous System as a socially informed network connecting and coordinating the individual’s responses have indeed proven prescient. Now we have substantial evidence that the “limit of possible social development in the particular case of the human species is determined, theoretically at least, by the number of nerve cells in the human brain, and by the consequent number and diversity of their possible combinations and interrelations” (Mead 1934:237n5; see Shalin 2017a and 2017b for discussion).

Of particular interest to sociologists seeking to absorb insights of social neuroscience is the research on “mirror neurons.” The MN system “represents a bio-marker of sociality” (Iacoboni 2011: 395, quoted in Franks and Davis 2012: 109), and as such, it lends substance to Mead’s insight into the interlocking nature of “imitation, empathy, intersubjectivity, protolanguage, language learning, ritual and cooperation, and culture” (Franks and Davis 2012: 78). The fact that seeing other individuals’ affectively charged action generates similar neurological responses (activates the same areas of the brain) in the actor and the witness bears on the Meadian concept of “taking the role of the other” and points to the inexorably social nature of mental phenomena. “Mirror neurons are brain cells that seem specialized in understanding our existential condition and our involvement with others. They show that we are

not alone, but are biologically designed to be deeply connected to each other” (Iacobini 2008: 267). Mirroring mechanisms were initially gathered in lab research on chimps, and we know that their communications are not appreciably mediated by symbols essential to human communication. The MN system operates differently in human brains where mirror neurons are activated in novel, emotionally charged settings and stay relatively inactive during routine language-based communications (Yun 2019). Still, there is a considerable evolutionary overlap between mirroring processes in great apes and Homo Sapience to justify the excitement among neurosociologists and merit further investigation (Shihui et al. 2013; Yun 2019; Pitts-Taylor 2012).

Sociologists appropriating the findings of neuroscience are not satisfied with purely academic pursuits; they look for ways to apply their findings to policy questions. A team of scholars formed around an interdisciplinary seminar at Harvard’s Radcliff Institute for Advanced Study has been engaged in intensive research of social brain and its pathologies. A volume edited by Russell Schutt, Larry Seidman, and Matcheri Keshavan under the heading *Social neuroscience. Brain, mind, and society* exemplifies the efforts to render social neuroscience relevant to medical professionals and policy-minded activists. Working within the “biopsychosocial paradigm” and drawing in particular on concept of “experience-dependent neuroplasticity” (Schutt, Seidman, and Keshavan 2015 :3, 35), contributors to this impressive collection address the issues of mental illness, personality disorders, health disparities, and social deviance. In the process, they have made significant progress in understanding how abused children end up with an overactive amygdala that makes them susceptible to anxiety and depression, how the socially impoverished environment feeds interpersonal and self-directed violence (Sharkey and Sampson 2015; Behen and Chugani 2015). Neurosociologists examined evidence that links autistic behavior with damaged mirror neuron system, ties schizophrenia to the underdeveloped ability to judge others’ intentions and affective proclivities, shows how the deficit in oxytocin, vasopressin, and homologous neuropeptides diminishes trust while rich social bonds increase the sense of wellbeing and happiness (Eack and Keshavan 2015; Turner 2015). They also pay close attention to morbidity and mortality patterns insofar as they reflect a group’s socioeconomic status and perpetuate historical injustices (Pescosolido 2015).

This practical agenda is very much in keeping with Mead’s and Elias’s commitment to public sociology with its determination to combine advanced theory and research with political engagement and community activism.

## Conclusion

This paper was originally written to illuminate the kindred theoretical perspectives developed Mead and Elias, two sociological classics with special sensitivity to the bio-social continuum. Both thinkers left us with the outlines of a sociological theory that is dialectical, process oriented, alert to the interplay of affect, reason, and society, and dedicated to an empirical inquiry into the embodied nature of socio-psychological reality. The present update was undertaken to demonstrate how the program articulated by Mead and Elias comports with recent developments in neuroscience, epigenetics, and cultural biology, which underscored the productiveness of the interdisciplinary approach to bodymind, culture, and society championed by Elias and Mead. Cast in broader terms, this approach goads social scientists to accept that “selves are more ‘in-the-world’ than ‘in the brain’” (Vogeley and Gallagher 2011: 129), that “we cannot locate meaning in the text, life in the cell, the person in the body, knowledge in the brain, a memory in a neuron. Rather, these are all active, dynamic processes, existing only in interactive behaviors of cultural, social, biological, and physical environment systems” (Clancey 2009:28). Charles Peirce, John Dewey, and William James were early champions of this mode of thinking, as they strained to show that “Experience does not go on simply inside a person, [that] genuine experience has an active side which changes in some degree the objective conditions under which experience are had” (Dewey 1938/1997:39). Mead’s bold attempt to extend the principle of sociality to physical and biological relativity adds fodder to this argument, and so does Norbert Elias’s explorations of somatic-affective correlates of social structure and cultural change.

Researchers investigating the mind-body-society nexus start with the premise that culture can exist only insofar as it inscribes itself in matter, most importantly in human body. Every cultural sign, according to this view, has a flesh that no signification process can erase. Sociologists who take body seriously are on the lookout for signs of the flesh as much as for the flesh of signs. Even in its most disembodied – symbolic – form, culture cannot shed its material substrate, be this a sound, a gesture, or a written mark. The embodiment-disembodiment-reimbodiment arc, the central problem of embodied sociology, goads us to recognize that conduct feeds on conductivity – bodily conductivity, that is. For we are flesh and blood, wet-wired creatures who cannot move until social signals have travelled through our neurological, hormonal, endocrinal and other body circuits. Those willing to accept this precept are committed

to investigating how society informs its members' neural networks, shapes their mirroring capabilities, supplies them with flexible selves and guides their interactions, while continually absorbing into its formal and informal structure individual members' somatic-affective, behavioral-performative, and symbolic-discursive outputs (see Shalin 2007, 2017b for further discussion).

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On behalf of all authors, the corresponding author states that there is no conflict of interest.

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