



ELIAS AND THE BOMB: EARTHING FIGURATIONAL SOCIOLOGY

Elijas i bomba: uzemljenje figuracione sociologije

ABSTRACT: *This article asks what becomes of Norbert Elias's figurational sociology when its developmental grammar of control – particularly over extra-human entities – is read from the standpoint of the nuclear Anthropocene. Elias treated the bomb largely as a Cold War symptom of human groups unable to master the dangers they create for one another. The article starts from a different premise: the bomb is more than a technological instrument or a fetish of interstate fear. As a technoscientific chimera, it becomes the critical figure for earthing figurational sociology: a threat that enters Earth materials and temporalities, returning through radioactive matter as a durable condition of future interdependencies. The article first revisits Elias's theory of levels and the triad of controls, showing how biological and extra-human processes are integrated yet subordinated within a developmental hierarchy of security and danger. It then treats the bomb as a limit-case of figuration: an artefact produced within human interdependencies that, as an extra-human agent, can nevertheless reorganize valences, balances of power and the architecture of constraint. Finally, it follows the bomb through deep Earth temporalities, where the problem of control reappears as geological residue, planetary exposure and apocalyptic species imagination.*

KEYWORDS: *figurational sociology, theory of levels, earthing, nuclear Anthropocene, control*

APSTRAKT: *Rad postavlja pitanje šta se događa sa figuracionom sociologijom Norberta Elijasa kada se njena razvojna gramatika kontrole – posebno nad izvan-ljudskim entitetima – sagleda iz perspektive nuklearnog antropocena. Eljas je bombu uglavnom razumeo kao hladnoratovski simptom ljudskih grupa koje nisu u stanju da ovladaju opasnostima koje proizvode jedne za druge. Rad polazi od drugačije pretpostavke: bomba je više od tehnološkog instrumenta ili fetiša*

međudržavnog straha. Kao tehnonaučna himera, ona postaje ključna figura za „uzemljenje” figuracione sociologije: pretnja koja ulazi u zemaljske materijale i temporalnosti, vraćajući se kroz radioaktivnu materiju kao trajan uslov budućih međuzavisnosti. Članak najpre razmatra Elijasovu teoriju ravni i trijadu kontrola, pokazujući kako se biološki i izvan-ljudski procesi integrišu, ali i podređuju unutar razvojne hijerarhije sigurnosti i opasnosti. Zatim se bomba razmatra kao granični slučaj figuracije: artefakt proizveden unutar ljudskih međuzavisnosti koji, kao izvan-ljudski agens, ipak može da preuredi valence, ravnoteže moći i arhitekturu prinude. Konačno, rad prati bombu kroz duboke temporalnosti Zemlje, gde se problem kontrole iznova pojavljuje kao geološki ostatak, planetarna izloženost i apokaliptički imaginarijum vrste.

KLJUČNE REČI: *figuraciona sociologija, teorija ravni, uzemljenje, nuklearni antropocen, kontrola*

Introduction

Why are human societies more resistant than non-human nature to a successful exploration by human beings, and thus to a more adequate handling of their self-made dangers and possible catastrophes? (...) Why do most people appear to consider it both impossible and undesirable that human beings might learn to rid themselves of the dangers they constitute for each other and for themselves, in the same way they learned to get rid of, or at least to contain, many of the dangers with which non-human nature threatened humans in former days? (...) Is it not true that the threat of a new epidemic caused largely by non-human agents is today immediately countered by the mobilization of scientists in many parts of the world? (...) In the case of wars or revolutions, however, which are in no way smaller and often even greater human disasters than great floods or epidemics, few people would look to social scientists for help and advice; and if they did these scientists might come up with advice which few were ready to accept or even listen to. (Elias, 1983/1987: 1)

The questions that open Elias's epistemological study *Involvement and Detachment* now acquire a different historical resonance. Within the Cold War horizon of his writing, the problem could still be posed as an imbalance between two kinds of control: modern societies had developed an exceptional capacity to explain, technically mediate and partly contain extra-human processes, yet remained unable to curb dangers arising from their own relations – war, violence and the possibility of nuclear destruction. Read against Elias's broader account of the monopolization of violence and pacification, this comparatively neglected study already sensed a discrepancy that exceeded the deficient self-control of social figurations. What it registered only fleetingly were the consequences of the scientific and technological capacities through which “nature” was supposedly brought under control. Yet the altered climate and disturbed Earth-system

processes that the strained concept of the Anthropocene seeks to encompass bring precisely this blind spot into view: the material effects of technoscientific processes persist beyond the figurations that produced them. In this respect, the Anthropocene overturns Elias's continuum of security gained through rising knowledge of "external" risks, showing that "social" dangers do not remain inside society, just as "natural" dangers no longer arrive from an external nature. Rather, the same figurations that expanded zones of security, prediction and control now arrive as sedimented in atmospheric, biological and geological processes. The question, then, is whether Elias's legacy can be pushed a step further, towards figurations whose effects begin to operate as conditions and constraints of future interdependencies.

A modest but significant body of literature has recently placed Elias's sociology directly within ecology and Anthropocene debates, especially extending his attempt to connect social development with biology. These interests first appeared in Johan Goudsblom's (1987, 2002) analyses of fire, from agrarian to industrial regimes. Following Elias, Goudsblom shows that civilizing processes were never merely intra-social processes of conduct- and institution-formation, but also long processes of reshaping what he calls the anthroposphere-biosphere relation, especially through fossil-fuel use. This distinctively ecological reading of Elias has ultimately pushed processual sociology towards long socio-ecological transformations that can no longer be thought apart from trophic expansion, that is, from the constant enlargement of the share of biospheric productivity redirected towards maintaining the anthroposphere. Psychogenesis and sociogenesis are not thereby abolished, but placed within a wider processual web in which phylogenesis, biogenesis and ecogenesis intertwine, each with distinct temporal rhythms and levels of integration (Quilley, 2010, 2011). At the same time, processual sociology is renewed as an apparatus for grasping modernity's paradoxes, since the Anthropocene does not abolish the command-and-control model but demands its reshaping through the "controlled de-controlling" of ecological controls (Keulartz, 2010). Hence Elias's place in debates on degrowth and post-growth, the limits of low-energy cosmopolitanism, the political economy of livelihood, and the question of whether modern, liberal and scientific society can survive without high material and energy throughput (Quilley, 2013, 2020; Quilley and Zywert, 2019). Yet these debates do not necessarily imply decivilizing regression, but rather possible reconfigurations of the triad of controls around collective self-limitation, localized interdependencies and convivial autonomy (Schmelzer, 2025). The conceptual pair involvement/detachment is therefore cast in a new light, since the Anthropocene requires less detached knowledge of ecological processes and demands new forms of involvement, ecological conscience, ritualized restraint and identification with the biosphere (Quilley, 2009, 2020).

In tracing long-term anthroposphere-biosphere processes, these approaches leave Elias's civilizational model of evolutionary (dis)continuity, embedded in his level theory, largely unexamined. While this theory offers a rare attempt in sociology to think sociogenesis in close conjunction with biological dispositions, it also presupposes a "civilizational" discontinuity which, through the well-known "triad of

controls”, concerns the bodily self-regulation of inherited human plasticity and, even more explicitly, the control of natural events. Some authors are right to argue that neither the origins of ecological crisis nor possible responses to it can be understood without this triad of controls (Saramago, 2023; Wouters, 2014). Elias can indeed be aligned with contemporary authors who treat the modern civilizational recasting of “nature” as one source of current climate destruction (Charbonnier, 2020; Haraway, 2016; Savransky, 2021; Viveiros de Castro, 2019). Yet the civilizing process cannot be reduced to a general increase in the distance and (self-)control that “humanity” gains over the biosphere, even when this appears through catastrophic side effects. Such a generalization blurs the specificity of Western modernity, colonial and extractive regimes, fossil capitalism and unequal historical responsibilities, as well as the variety of non-Western ontological arrangements in which boundaries between the human and the non-human are drawn differently (Barry and Maslin, 2016; Descola, 2013; Malm and Hornborg, 2014; Swyngedouw and Ernstson, 2018). More importantly, it remains within “[t]he story of Species Man as the agent of the Anthropocene”, as Haraway (2016: 47–48) puts it ironically. This is “an almost laughable rerun of the great phallic humanizing and modernizing Adventure, where man, made in the image of a vanished god, takes on superpowers in his secular-sacred ascent, only to end in tragic detumescence, once again. Autopoietic, self-making man came down once again, this time in tragic system failure, turning biodiverse ecosystems into flipped-out deserts of slimy and stinging jellyfish”. Hence, the belated awareness of a drastic rupture, in which modern societies have destabilized the material conditions of their own reproduction, is only one part of the tangled Anthropocene mosaic. The need for what we call *earthing* is driven especially by the recent planetary turn and its attention to the long histories through which collectives become bound to planetary materialities: Earth’s geo-biological temporalities and the movement of matter, energy and life across terrestrial spheres (Chakrabarty, 2021; Clark and Szerszynski, 2021; Szerszynski, 2016, 2018, 2019). *Earthing*, in this sense, names the theoretical operation of thinking material convergences with Earth: how collective histories enter its movements and return as planetary conditions.

The proposed earthing of Elias’s sociology rests both on critical examination of level theory and rethinking of the processual and relational ontology built into the recognizable, yet delicate, concept of figuration, so that extra-human agents may also become nodes of interdependence. Figurations are usually read as Elias’s answer to the exhausted dichotomies of individual and society or action and structure, and defined as emergent relations of interdependence (Featherstone, 1987; Dolan, 2014; Landini, 2013; Landini and Dépelteau, 2013; Loyal and Quilley, 2004; van Krieken, 2017). In this sense, figuration has rightly been recognized as one of relational sociology’s key concepts, since it derives the social world neither from individual actors nor from supra-individual wholes, but from shifting networks of mutual dependence (Emirbayer, 1997; Tsekeris, 2013; Donati, 2018). Yet this stabilization of the concept, especially after the posthumous canonization of Elias’s work (van Krieken, 1998; Smith, 2001; Kilminster, 2007), has often sidelined the ambiguities of his wider ontological and epistemological apparatus. In general, “one would search in

vain to find Elias's definitive statement of his 'methodological', 'ontological' or 'epistemological' position" (Dunning and Hughes, 2013: 99). Heinich (2013) therefore rightly notes that many misunderstandings in Elias's reception stem from under-explication, which repeatedly pulls his work back into registers from which it sought to distance itself: normativism, evolutionism, universalism, and above all substantialism and logicism. Elias is thus credited with a teleological philosophy of history, while the relational language deeply built into figuration is repeatedly translated back into the language of separate entities: the "individual", "society", "mental structures" and "social structures" (cf. Hughes et al., 2022). Critics have rightly warned that the concept sometimes remains descriptive, theoretically overstretched or insufficiently precise in coordinating different levels of analysis (Layder, 1986; Mouzelis, 1993; Déchaux, 2013). Figurations are therefore both productive and methodologically elastic: they may refer to interactional arrangements, groups, institutions, classes, states, international relations, even long civilizing processes. Yet this indeterminacy is not necessarily a weakness. It allows figurations to be thought as open processual arrangements – less horizontally, as chains of interdependence among people, groups and states, and more vertically, through the Earth and non-human agencies in general.

Through the concept of *earthing*, the article contributes both to Elias's scholarship more broadly and to its recent socio-ecological turn by treating the nuclear bomb as an uncanny technoscientific chimera and a speculative figure through which the concept of figuration can be extended beyond its humanist premises. Although it remains a passing example of Cold War animosities, in Elias the bomb is nevertheless a strange technical artefact of coercion that recasts security-danger opposition underpinning Elias's account of social development as expanding control over extra-human processes. Read through *earthing*, the bomb opens a different problem, since the dangers of the nuclear Anthropocene do not remain within chains of human interdependence, thus providing a basis for thinking figurations through the agency of non-human entities. As a limit case of figurational thinking, the nuclear bomb shows how socially produced danger attaches to ore bodies, reactors and sediments, and then returns as a long-lasting constraint and as the apocalyptic imaginary of a species facing the possibility of its own end. In short, it is a product of prior interdependencies which, despite its minuscule scale, inserts itself as a planetary agent and begins to organize new scales of temporality and interdependence. The article therefore starts from the internal tension of Elias's level theory: society belongs to the evolutionary continuum as a "level of nature", yet also separates out as the level on which biological dispositions and non-human processes are contained through the "triad of controls". The second section examines figuration more directly and introduces the nuclear bomb as an enigmatic figure whose efficacy suggests that the architecture of interdependence, presupposed by the concept's relational and processual ontology, must be thought beyond pre-given human nodes. The final section examines the genealogy of the nuclear bomb as an intersection of Cold War figurations and Earth's deep temporalities, where historical and planetary time are refracted through plutonium, fallout and sedimentary trace, and where

the question of control returns through materials that become conditions of future interdependencies.

The Trouble With Levels: Elias, Control and the Subordination of Nature

Elias's highly idiosyncratic attempt to illuminate how biological dispositions are socially activated, channeled and historically recast through level theory, has received only passing attention. Quilley (2010) usefully notes that this theory took shape in a specific intellectual milieu. Drawing on British organicist biology and evolutionary humanism, it presents a "modern synthesis" against mechanistic reductionism and vitalist metaphysics in which the phylogenesis of the human species is inserted into a developmental and emergent continuum where physical, biological and social levels remain connected, yet relatively autonomous within "great evolution" (Quilley, 2004; Saramago, 2023). Newton (2007) is therefore right to read Elias as a rare sociologist who brings nature, corporeality and biology into sociological theory without returning to biologism. The theory's potential is thus chiefly epistemological, since it largely anticipates realist critiques of vulgar constructivism (Newton, 2007). Still, drastic ontological differences remain between physical, biological and social levels, as these levels are hierarchically temporalized: the physical and the biological remain slower, deeper and conditioning levels, while the social level appears as a space of acceleration, learning, orientation and control. Conceptually, the triad of controls further cements this hierarchical developmental imaginary and ultimately produces a specific asymmetry. Posed as a criterion of social development, the growth of control capacities implied by level theory renders this integration incomplete: biological agents and, more broadly, the non-human world are included primarily through the antinomy of danger and security, and thus remain primarily shaped through human capacities of control.

Although it runs through a number of Elias's publications, the basic assumptions of level theory are perhaps most clearly stated in *Involvement and Detachment* (1987), and above all in *What Is Sociology?* (Elias, 1978). This attempt to define more precisely the place of physical, biological and non-human processes in social development in an anti-reductionist key reflects Elias's intention to confront one of the discipline's constitutive dilemmas. It is striking that Elias's main interlocutor, and even the source of inspiration from which he takes the idea of levels and ontological hierarchy, is none other than Auguste Comte. After all, Comte tried to solve the major intellectual puzzle of the emerging discipline: how to study human societies as a distinct level of reality without separating them from human biological characteristics. Elias writes that Comte understood sociology's object as having a *sui generis* character that cannot be reduced to human biological or physiological properties. Yet Elias notes that Comte does not reject the interweaving of physiology and sociology. Social phenomena are necessarily anchored in the human organism, although they cannot be reduced to the effects of physiological laws. The point is that

social conditions modify these physiological premises, so instead of linking them too readily, one must rather think in terms of “more comprehensive levels of integration” which are “[...] no more than a combination of figurations of the less comprehensive levels” (Elias, 1978: 45). Level theory therefore speaks of differentiated planes that are autonomous and ontologically specific, with their own structures, functions and forms of regularity. At the same time, they are historically and functionally connected in shifting figurations, and their interconnection forms a distinctive ontogenetic and developmental continuum in which “human society is a level of nature” (Elias, 1991: 85).

The key question is how certain features of human biological constitution are socio-historically shaped, as Elias’s writings on language and death show. In *The Symbol Theory* (1991), the analysis of speech serves precisely to attack “metaphysical humanism”, that is, the assumption that symbolic capacities introduce a radical break between humans and animals through spirit, mind or soul. Speech depends on the body’s biological organization – the larynx, oral cavity, tongue, neuromuscular apparatus and cerebral capacities – but human languages do not function as innate signal systems. They are learned, group-specific and historically mutable arrangements of symbolic transmission. Hence human “technolinguistic plasticity” (Newton, 2007) develops through language learning, representation, intergenerational knowledge transfer and bodily techniques, but without leaving the biological conditions that make it possible. Similarly, in *The Loneliness of the Dying*, death appears as “(...) a problem of the living” (Elias, 1985/2001a: 3), that is, an undeniable biological fact that becomes a problem for humans only through symbolic anticipation. The living have a problem with death because they know they will die, because they fear losing others, and because they understand their own finitude through networks of dependence, memory and expectation. This is why death is a “bio-social danger” (Elias, 1985/2001a: 12): the body ages, decays and ceases to function, but the ways this process is seen, repressed, ritualized, medically organized or affectively endured depend on historical figurations. Images of death are “stage-specific” and “group-specific” social treatments of biological finitude, such as religious fantasies, thresholds of shame before the corpse, hospital routines, care homes and secular unease before farewell. In both cases, the biological and the social remain inseparable, but they do not do the same analytical work: biology sets a disposition or limit, while social figurations activate and recast it.

Language and death therefore show that, for Elias, the biological and the social are differentiated processes intertwined in concrete forms of human life. Yet, despite the assumption that “nature and society or, if one prefers, nature and culture, [...] firmly locked into each other” (Elias, 1991: 52), hierarchically ordered levels of complexity and divergent temporalities essentially retain an ontological separation. Elias proposes reserving the term evolution for processes dependent on genetic transmission, while development designates processes dependent on intergenerational symbolic transmission. In the first case, characteristic of animal societies, organic arrangements are transmitted, which means that such societies change significantly mainly through biological species change. In the second case, specific to human societies, what is transmitted are

languages, standards of conduct, affects, orientations and socially accumulated experience. Transitions from tribal to state, feudal, capitalist or industrial forms of organization occur without major genetic changes in the species. The evolution/development distinction is not merely a terminological division. As de Carvalho (2018) suggests, it is part of Elias's wider attempt to move beyond the old philosophical antinomy of physical and social time, or natural process and human time-experience. This certainly softens the crude nature/society dualism, but opens another problem: the integration of levels is not a synchronous connection, but an ordering across presumed, successive, even teleologically arranged degrees of complexity. By securing the dispositions, limits and material conditions of human "plasticity", the biological level remains constitutive, but is obscured before the social level, which assumes the role of acceleration, learning and cumulative change. Elias's first level is therefore at once necessary and largely prefigurational. Once woven into figurations, this level loses ontological potency and dynamic force. Hence the differentiation of social temporality as far more complex bears the mark of implicit speciesism, since human development ultimately "represents a post-animalic stage of evolution" (Elias, 1991: 42).

Hierarchical temporalization thus appears somewhat teleological, as phylogenesis – and, more precisely, the level of social organization – assume primacy in recasting both biological constituents and "external" nature, while also subordinating extra-human agents. This is especially visible in the binary opposition security/danger, according to which "primitive" societies lag within the hierarchy. A footnote from *Established and Outsiders* (Elias and Scotson, 1965/1994: 95, fn.1) makes this clear: "Simpler societies are also far more threatened and insecure because, partly as the result of such incongruities, they have less control over 'nature', over themselves and each other. And because they have less control, again, they are generally more insecure. In fact, this is one of the most fundamental of the human traps". Elsewhere, Elias justifies this through an epistemological articulation in which the natural sciences receive the ultimate task of pacifying the "external" world. Interestingly, Elias by no means treats the natural sciences as the ultimate model of knowledge. This is visible in his insistence that sociology must free itself from two inadequate models (Elias, 1978: 17–22). The first is magical-mythological or naively egocentric: social processes are explained through the character, intentions or ill will of individuals and groups, while oneself or one's own group is exempted from the figuration. The second is natural-scientific: social constraints are imagined as physical forces acting externally on objects. Both errors block the development of autonomous sociological concepts, becoming either the "Scylla of physics" or the "Charybdis of metaphysics". Yet the achievements of the natural sciences are imposing for Elias (Elias, 1978: 22–24; see also: Elias, 1987), and not only as a relatively effective shift towards detached knowledge. In the domain of natural phenomena, knowledge accumulates, the standard of researchers' self-discipline is high, fantasy-laden and egocentric elements are more easily controlled, and orientation towards the object of inquiry is more stable than in social life, where collective fantasies, ethnocentrism and affective involvement remain far stronger. Hence the natural sciences, in a curious way, represent the highest sophistication of social development. They provide the technological apparatus and thus the

enormous capacity of modern societies to increase control over problems caused by “extra-human natural events”.

Treating “external”, and even internal, nature as danger, risk or a source of atrocities leaves level theory ontologically trapped in the very dualism it seeks to avoid. Quite simply, the human relation to these agents, however mutable, is implicitly tied to the long development of knowledge and self-discipline that provide tools of collective control, characteristic of European state formation. This Eurocentric and technocratic view is especially pronounced in the formulation of the “universal features of society”, that is, the outline of the “triad of basic controls” in *What Is Sociology?* (Elias, 1978: 156). At the very end of this study, Elias offers a hierarchy which, resonating with deeply universalist-evolutionist premises, presupposes a way of measuring society’s developmental temporality. The first form of control is the articulation of “external” nature, embodied “by the extent of its control-chances over non-human complexes of events – that is, control over what are normally called ‘natural events’”. The second presupposes the “extent of its control-chances over interpersonal relationships – that is, over what are usually called ‘social relationships’”. Finally, the last degree of control also concerns bodily self-discipline – a theme that inevitably permeated Elias’s understanding of habitus transformation. Thus the final component of the triad of basic controls refers to control over “himself as an individual – for, however dependent he may always be on others, he has learned from infancy to control himself to a greater or lesser degree.”

The idea of temporal progression that emerges within level theory and crystallizes as hierarchical mastery over these agents through the triad of controls contains, however, a far more delicate paradox than the one historically reversed into the destructive recasting of the biosphere. Malešević and Ryan (2012) rightly note that Elias’s ontology rests on a “temporal arc”. Although writing on violence, they stress that deviations from the civilizing process are too readily returned to the black box of regression, backwardness or barbarism, as civilization’s Other. Within this ontology, civilization’s Other also seems to include, to a large extent, the “emancipation” of non-human agents, concealed by the idea of integration. Whether narrowly bodily or extra-human, temporality guarantees hierarchical supremacy: far more mobile and historically adept forms of social control can pacify passive entities caught in cyclical and recursive patterns. Yet what if Earth’s temporalities are civilization’s “First” – and far more tangled than the descriptive, even normative, assumptions that burden level theory and its anthropocentric verticals? It is not only that, as Chakrabarty (2021) repeatedly insists, social history can no longer be thought in diachrony with “natural” history. In fact, the “slowness” of the planet’s deep history means neither lesser complexity nor any suppression of the complex material, metabolic and energetic exchanges with sediments, climatic rhythms and Earth movements. The architecture of integration was hardly ever fully detached from dynamic and often violent processual arrangements that precede humans, escape them and periodically throw them off their historical trajectories (Clark, 2011). Even when one has in mind the highest sophistication of control, embodied in technical systems produced by human knowledge, these systems are not only woven from

planetary materials; they can also grow into a relatively autonomous Earthly sphere, with its own metabolic demands and constraints for the humans acting within it (Haff, 2014). Although control undoubtedly changes the architecture of integration, especially in our energy-hungry societies, by moving matter, organisms and technical arrangements, accelerated social time also dwells in the deep time of Earth's different spheres. It is precisely this crossing with Earth's multiple temporalities that creates hybrid nodes which turn level theory's presumed hierarchy upside down, suspending the ontological dictate of human control. The nuclear bomb's *language of death* does precisely this.

Re-thinking Figurations Through... Bombs!

The nuclear bomb seems indeed to be a "foreign body" within figurations, but also a paradoxical figure capable of drastically rearranging them. The self-evidence surrounding the reception of figuration apparently makes it difficult to move the concept towards more-than-human formations. The truism that figurations provide a distinctive relational vocabulary which dissolves the individual/society dualism in favour of processual relational outcomes certainly holds (Dolan, 2014; Loyal and Quilley, 2004; van Krieken, 1998). Elias (1991/2001b: 55-60) was also a stubborn opponent of both the idea that "society" is an external shell around the individual and the idea that the individual is society's pre-social basis, which makes him a significant precursor to later attempts to bridge methodological nominalism and methodological holism. While Elias (1978) himself complained about the weak capacity of European languages, burdened by static terminology, to describe dynamic processes of binding, coordination and dependence, figurations remained largely idiosyncratic and obscured by a handful of provisional definitions pointing to expansive "networks of interdependence". At its core, this idea implicitly remained tied to the recasting of bodies and habitus as the result of more complex, wider and more encompassing relations. By desubstantializing actors, viewing them through valencies, dependencies and shifting power balances, Elias at the same time keeps them within a strictly humanist frame. The most stable unit of figuration remains the interhuman constellation, while valencies are primarily the ways people bind themselves to one another within shifting power constellations – power being an attribute of relations between two or more people, but also between people and "natural objects" (Elias, 1978: 116). Epistemologically open to varieties of interhuman relations, the concept of figuration is nevertheless grounded in a humanist perspective that progressively detaches social processes from non-human entities.

Even though figuration would become the recognizable marker of his sociology, Elias treated this concept rather unevenly, mostly through passing corrections of possible misreadings. Chronologically, *The Established and the Outsiders* is the first major site where figuration gains a more explicit analytical function, though still without systematic theorization. Here figuration denotes the relation between two groups shaped through a durable regime of mutual observation, moral ranking,

stigmatization and membership control (Elias and Scotson, 1994). A similar logic appears in the expanded edition of *The Civilizing Process*, where Elias introduces the dance analogy. Figuration is neither a structure above the dancers nor the sum of their individual movements, but a moving pattern of mutual coordination that exists only while it is performed, even though it cannot be attributed to the will of any participant (Elias, 1939/2000: 482). In *What Is Sociology?*, the same intuition takes a cleaner form through game models. Elias first confronts the language that treats family, school, state or society as things, and then shows them to be relatively stabilized cross-sections of interdependence chains and shifting power balances (Elias, 1978: 14–15). This gives the card-game example a special status: it is a “changing pattern created by the players as a whole”, “as concrete as the players themselves”, but has no separate being outside the players, existing instead as a “flexible lattice-work of tensions” produced by their mutually conditioned moves (Elias, 1978: 128–131).

This is where the question arises of what a shifting pattern means and what the participating units are made of. If figuration is neither a structure above people nor the sum of their individual actions, then the “players” cannot be imagined as ready-made, closed subjects who only subsequently enter relations. Elias comes closest to a provisional ontological specification in *What Is Sociology?*, by linking valencies, dependence and power. The figuration diagram at the beginning of the book therefore carries more weight than is usually noticed: humans are shown as units with open and attached valencies, that is, as beings formed through the possibility of binding, not as self-sufficient points connected externally by a network (Elias, 1978: 14–15, 175). Valencies should not be read as mere psychological dispositions, although they are deeply woven into habitus. They designate capacities for attachment through which people become operative for others at all: through love, fear, the need for recognition, dependence, hostility, loyalty, identification, but also through attachments to family, profession, state, nation or other symbolically condensed units (Elias, 1978: 134–138). Power therefore does not come from outside, as an addition to an already established relation. It is the inequality of binding itself: the difference in who can hold, direct, replace, oblige or discard whom. Elias’s rejection of power as a thing someone possesses is crucial for understanding his relational ontology. Power is always relational, at least bipolar, more often multipolar, and exists only through shifting balances of dependence (Elias, 1978: 73–75). Figuration thus appears as a tense order in which actors are shaped only post facto as differently attached, differently replaceable and differently able to influence the course of relations.

Can the bomb, then, recast the course of interdependencies? The broader paradox of figuration’s conceptual purification comes to light in the few moments when Elias, besides nuclear bombs, discusses machines and technology. On the one hand, he treats with some irony the disgust many express at the “horrors of scientific wars” which, alongside astonishing innovations, have produced such instruments of destruction (Elias, 1978: 24–25). At the same time, he firmly rejects accusations too readily directed at scientists, since what is at stake is a “pretext for concealing from ourselves our complicity in the reciprocal hostility, or at least our individual

helplessness in the face of the apparent inevitability of threat and counter-threat". In general, the technical thing "in itself" cannot be the source of danger; the source lies in interdependent human groups that threaten, discipline and coercively orient one another through technical means. "The hydrogen bomb was after all developed at the instigation of statesmen, who would be the ones to order its use if they thought it necessary. Yet to us the nuclear bomb serves as a kind of fetish, an object onto which we project our fears, while the real danger lies in the reciprocal hostility displayed by groups of people in their relations with each other". The bomb is recognized as a material node of the nuclear age in which Elias writes, but the explanation must return to people, states, hostilities, fears and power balances. In itself, the bomb is not a source of constraint: it has no will of its own, does not invent or produce itself, even if we fetishize it. Technology may change the conditions of the game, extend power's reach, accelerate threat, stabilize coercive relations and make them more destructive, but it rarely becomes a full figure of action.

Yet the way bombs and machines, bodies and biological processes are placed in a strange ontological positionality, seemingly lateral and disconnected from figuration, makes them begin to function as points of attachment, constraint and action-redirection. In this reading, the bomb is an emanation of control capacities and technological development, but it appears as far more than a means: in a certain sense, it is a medium of human coordination that begins to dictate the figurations. Perhaps the best illustration is a brief reflection on this unsettling technoscientific chimera in *Involvement and Detachment* (Elias, 1987: 99). Its paradoxical status lies in being, at once, the product of civilizationally developed technoscientific control, a source of danger and a possible condition of pacification. As Elias notes, "ideological weapons, and more generally the emotional fantasies and beliefs of the antagonists in relation to each other, play as significant a part in keeping this process going as the circularity in the development of material weapons. Relaxation of the double-bind process (...) may just be possible because fear of the bomb may outweigh the fear and hatred of the enemy". Although this latter process is slow, requiring "a higher level of detachment and self-control in their dealings with each other", the bomb itself becomes another Other of civilization, an uncanny figure that rearranges the security/danger binary and changes the contours of interdependence in such figurations.

In a strange way, the bomb begins to recast the very frames of figuration and to stabilize valencies not through affective or other attachments, but precisely by emerging as an emanation of power inequality. Such efficacy may seem enigmatic. Yet precisely because figuration acquires an entirely new architecture with the bomb at its center, the very idea of figurations as a "flexible lattice-work of tensions" must be reconsidered more thoroughly. The concept that Elias used to dismantle the myth of the closed individual and substantial society must now be turned against its own residue: against the assumption that interdependence can be thought through bodies, affective attachments and power only when its nodes are human in advance. This recasting requires thinking how agents are given form within a web of relations, for which Latour's (2005) brief reflection on figuration in his programmatic *Reassembling the Social* is especially instructive. An agent

always appears through some figure – a person, institution, technical object, formula, document, virus, machine or statistical aggregate. What matters less is whether an actor possesses intention, consciousness or inner will than whether its presence changes the course of action: whether it enables, blocks, accelerates, delays, translates, stabilizes or makes something obligatory. Agency is therefore traced through its effect in a chain of mediation, that is, through the difference a given node makes in the distribution of dependencies and the possibilities of further action. In a certain sense, Latour implies a language of interdependence – of long, often ungraspable formations of entities which, much like Elias's formula, presuppose a processual and relational ontology. In this way, it becomes possible to retain the epistemological openness contained in figurations while moving them out of an excessive neo-Kantian intersubjective culturalism, towards hybrid nodes that not only change the courses of human figurations but also complicate the anthroposphere-biosphere nexus. The bomb is a limit figure here precisely because it forces figurations to be thought no longer only horizontally, through external constraint, but vertically, through the Earth.

Earthing Figurational Sociology

Thinking the nuclear bomb in Earthly terms first requires theoretical refinement, in a direction that, following Donna Haraway's (1997: 11) proposal, takes figurations as a kind of topological device, "condensed maps of contestable worlds". The analytical formula of figurations as "performative images that can be inhabited" comes into particular relief in the vividly titled *Modest_Witness@Second_Millennium. FemaleMan©_Meets_OncoMouse™*, where, among other things, Haraway treats the nuclear bomb as a specific product of the implosion of the natural and the artificial which, as we will shortly discuss, occupies a particularly prominent place in the geochronology of the Anthropocene. Far beyond the status of an isolated Cold War artefact, the bomb belongs to the same sequence of technoscientific production of new kinds of entities: the chip, gene, seed, fetus, database, race, brain and ecosystem. As a cyborg life form, it condenses technobiopower through the convergence of the technical, political, organic, economic, textual and imaginary. In short, it is a node linking the Cold War, nuclear culture, biotechnology, capital, classification, kinship, apocalypse and the material-semiotic production of the Earth. The figure of the nuclear bomb also reflects with particular force what Haraway (1997: 41–44) understands as an apparently oxymoronic "Christian-secular millenarian regime". Technoscience is never fully freed from theological residues: it produces apocalyptic threats and radiant promises through the imaginary of salvation, from the "peaceful atom" and the protective shield against the enemy to life extension and deliverance through scientific breakthrough. This *chronotope* of threats and promises particularly complicates the security/danger opposition. Against the processuality that in Elias implies a more or less coordinated development and expansion of control, the genealogy of the nuclear bomb points to a far more tangled web of relations positioned both synchronically and deeply diachronically in relation to the Earth. In this respect, these "condensed maps" of the nuclear Anthropocene can be read

through the geologization of figurations, the rescaling of their temporalities and the recasting of control.

Behind the surface understanding of the nuclear bomb as an expression of Cold War animosities, arms race and coercion, its genealogy reveals a more tangled geological aspect of figurations, in which socially produced danger attaches to the deep times of ore bodies, the reactor-based recasting of isotopes and the political mobilization of Earth materials. Earthing appears primarily within the emerging nuclear complex, where the gradual mobilization of planetary energy inscribed in geological sediments began. What Haraway (1997) aptly calls a chemical-political genealogy involves reaching for plutonium through the periodic table as a “taxonomic device” for what modern technoscientific culture understands as nature. With atomic number 92, uranium interestingly marks the last element appearing on Earth as a stable boundary of that order, more than 4.5 billion years old, as georadiological dating of the Earth shows (Carpenter, 2014). This deep and stretched diachrony of uranium as sediment is pulled by the nuclear apparatus out of geological time and into the regime of mines, reactors, military secrecy and long-lived waste. The production of so-called transuranic elements, beginning in 1940, starts to exceed the ore body itself, since their chemical and political recasting in reactors breaches the boundary of Earth’s “natural” inventory and introduces substances that are at once Earthly and artificial, laboratory-made and geopolitical. Plutonium, with atomic number 94, emerges precisely as an element belonging to the periodic table, but also as the product of an entire amalgamation of reactors, military secrets, organized labour and state coercion, culminating in the Manhattan Project and the first self-sustaining nuclear reactor, built in 1942 on a squash court at the University of Chicago. The nuclear bomb tested near Alamogordo and the one dropped on Nagasaki express the strange miniaturization that Haraway (1991: 12–13) elsewhere sees precisely as the link between technology and power: “Miniaturization has turned out to be about power; small is not so much beautiful as pre-eminently dangerous, as in cruise missiles”. The trace of these miniature figures, produced in the short time of the nuclear age, would begin to stretch across geologically barely imaginable spans of time (Brunnengräber and Görg, 2017).

The bomb is born from a long history of Earth materials, but its amalgamation within the “fast” technoscientific temporality of plutonium separation and reactor-based recasting returns as a new sediment in the hydro- and biosphere. The anthropogenic radionuclides released by nuclear fission become woven into a new geological layer, several hundred metres beneath the surface, across time spans that political history can scarcely think. As the first major plutonium-production apparatus of the Manhattan Project, Hanford remains after the Cold War as a contaminated landscape of decommissioning and slow leakage from trenches and disposal sites into groundwater (Liu, 2023). This is what Orsini (2024) calls the “myth of containment”, tied to the forgetting that nuclear facilities operate as porous technologies bound to water, soil and air, while radionuclides are, more importantly, also transported biotically. Radionuclides hardly remain sediments: they are materials moving through soil, plants, animals and food chains, introducing genetic instability into the biosphere. Radioactivity therefore

lives on through transport between planetary spheres and different temporalities that ultimately produce “mutant ecologies” (Lengefeld, 2020). As deep plant roots absorb radionuclides and radioactive “tumbleweeds” spread contamination, salmon, birds of prey and other organisms become part of the chain that tracks and disperses radioactive residues. Plutonium, likewise, does not remain where it is deposited: burrowing animals, grass roots and particle movement through surface layers extend the life of waste beyond factory and military infrastructure. Hence this sophisticated cyborg life form, shaped in a short historical breath as an unprecedented means of coercion and a condensed expression of the violence that preceded the postwar world order, becomes a chimera that enters ice, soil, lake and marine deposits, threatening the very reproduction of life.

The transformation of short-lived nuclear events such as explosions and tests into a long-lasting trace legible in Earth’s geological “archives” also brings a drastic rescaling of social and natural temporalities – but in such a way that the former lose the ontological primacy Elias grants them through level theory. At first glance, the nuclear bomb has already become a figure illustrating a major disruption in the anthroposphere-biosphere nexus. The very geochronology of the Anthropocene as a new geological epoch, around which heated debates unfolded, eventually made nuclear testing at the end of and after the Second World War almost iconic (cf. Brown, 2022b; Spencer, 2022). Starting with probably the best-known case marking the dawn of the nuclear age, the Trinity bomb test in July 1945, nuclear fallout became one of the most pregnant signs of the overlap between drastic shifts in Earth patterns and the body of anthropogenic activities gathered under the concept of the Great Acceleration. The mid-twentieth century therefore appears as the presumed marker around which stratigraphic findings cluster: above all, the planet-wide trace of plutonium-239 – this technoscientifically recast element, long-lived, poorly soluble and firmly bound to sediment particles (Waters et al., 2015; Zalasiewicz et al., 2015). The findings from Crawford Lake, intended to establish the so-called golden spike of the new geological epoch, further consolidated this status of plutonium, since traces of nuclear testing in thin sediment layers intersect there with indicators of industrial expansion, increased fossil-fuel combustion, acid rain and other signs of the Great Acceleration (McCarthy et al., 2023). Yet although the Anthropocene has not been formalized (IUGS-ICS, 2024), the geochronological formula by which humans become key geological agents usually obscures the fact that the new geological epoch catalyzes a major dispossession of human supremacy. Precisely in this sedimentary legibility, history proves no longer sufficient as a measure of duration: altered Earth cycles introduce time spans and uncertainties that political imagination can scarcely encompass.

The geochronology of the nuclear Anthropocene therefore disrupts the calmer language of long socio-ecological development, in which human history is traced through anthroposphere expansion, energy regimes, technical control and subsequent attempts to contain it. The nuclear trace introduces a different measure of duration beyond geochronological nomenclature, but also a different

ontological matrix. In this respect, fallout exceeds the dating of the Anthropocene, pointing to the radiological imprint of the nuclear age now dispersed through the atmosphere, oceans, soil and living bodies (Creager, 2022). Monitoring this trace further shows that nuclear technoscience, together with the bomb and its stratigraphic sign, also produced networks of measurement, surveillance and interpretation through which the Earth begins to be read as a contaminated archive of its own militarization (Herran, 2022). When radioactivity appears in bones, local ecosystems or distant traces of accidents and tests, it no longer belongs to a past event, but to a duration that continues to distribute exposure beyond the political time of its origin (Roqué, 2022; Brown, 2022a). The anthroposphere-biosphere nexus thereby changes drastically: human action no longer stands before the biosphere as an external force of management, but returns through materials that circulate, settle, decay and remain measurable, and above all dangerous, long after the political order that produced them has lost its own historical form. This ultimately speaks to the paradoxical longevity of figurations, even though this longevity is no longer tied to institutional stability or, for instance, the articulation of self-control. Rather, the persistence of residues that escape the time of their makers also signals a drastic shrinkage of their control capacities – in which Elias, as a sincere theorist of modernity, placed considerable hope.

Namely, this retreat of control capacities becomes especially legible through the images of apocalypse that accompanied the nuclear age and are now similarly revived in the new climate regime, within the frame of a species exposed to shared vulnerability. Apocalypse certainly has many blind spots. Discussing postwar “bomb ethics”, Bouchard (2025) identifies the bomb precisely as a means of preserving peace and ensuring human survival, while global cohesion was produced through exposure to species-ending danger. The price of such synchronization remains high. Empire, militarism, colonial testing zones, mines, workers and contaminated communities easily disappear from the image of shared ontological exposure. Much the same holds for recourse to the political theology of apocalypse, through which the Anthropocene is likewise made thinkably proximate by an imaginary already shaped by the nuclear age (Danowski and Viveiros de Castro, 2017; Janković, 2022; Latour, 2017; Savransky, 2021). The end of the world, a species facing the possibility of self-annihilation, a planet exposed to technically produced catastrophe – all similarly compress the diffuse and unevenly distributed material traces of the nuclear Anthropocene into a figure of general awe before planetary ending. Yet, as Chakrabarty (2015; 2021) shows, modern climate consciousness took shape during the Cold War, nuclear threat, atmospheric research and the space race. Global warming reactivates Jaspers’s concept of “epochal consciousness”, though in a different Earthly register, reforming the earlier fear of nuclear catastrophe as a precondition of pacification into anxiety before uncontrollable climate uncertainties. Apocalypse therefore becomes less a final horizon than a latent cultural matrix for reading contemporary catastrophe: a performative image that prepares a new form of inhabiting the Earth.

Yet the permanent threat of the miniature figure – kept in silos, far from public view – does not remain only in the apocalyptic imaginary: it has already established a new form of synchronous attachment, in which the “species” is gathered not as the endpoint of “great evolution”, but around the possibility of its own technically produced end. Metaphorically speaking, this language of death is not merely an expression of “technolinguistic capacity” as the outcome of evolutionary phylogenesis. Haraway (1997: 58) notes that “the apparatus for the production and sustenance of high-atomic-weight fissionable materials interpellated diverse peoples into a kind of global species on the ‘whole Earth’ or ‘spaceship Earth’”. The cyborg life form itself, produced by recasting plutonium into nuclear materials through a complex semiotic, technical, political and economic apparatus, had no lesser effect on figurations in unifying the “species” as one in danger. Paradoxically, it operates as a vertical integration of “natural” elements that also changes the contours of power and valencies. These are “earthshaking artificial productions of technoscience whose status as aliens on earth, and indeed in the entire solar system, has changed who we are” (Haraway, 1997: 55). As Haraway further explains, “[t]he transuranic elements have forced humans to recognize their problematic kinship with each other as fragile earthlings at a scale of shared vulnerability and mortality”. Although the now widespread pop-cultural reference to Robert Oppenheimer’s line “Now I am become Death, the destroyer of worlds” is the most striking image of this language of death, it imposes a much broader understanding of finitude within these strange planetary networks of interdependence in the nuclear Anthropocene. “Now a worldwide-disseminated nuclear fuel and one of the deadliest toxic substances ever encountered, plutonium has done more to construct species being for hominids than all the humanist philosophers and evolutionary physical anthropologists put together” (Haraway, 1997: 55).

Conclusion

At first glance, the questions opening *Involvement and Detachment* – why non-human dangers have been successfully contained, and why dangers of social origin have not – can no longer be posed in the same form. Indeed, the nuclear Anthropocene offers a dark image of how socio-ecological products of social figurations begin to operate within domains Elias largely kept ontologically apart as a “level of nature” subject to containment. Now, however, the temporalities and forms of constraint emerging in the new climate regime escape the control of their makers, becoming strange geo-bio-social agents that return as new conditions of interdependence. Does this mean that Elias’s entire project should be “archived” as an epistemic relic, since it provides an increasingly limited analytical apparatus for grasping historical ruptures such as the Anthropocene? The answer cannot be so radical, since Elias himself pointed to the need to seek the limits of knowledge in historically established structures of interdependence. The dilemma of (self-) control that haunts his historical sociology of knowledge should therefore be moved towards its most unsettling consequence: a reassessment of forms of

detached knowledge once conceived as the ultimate epistemological standard, and a search for sociology's new place within such an order. This certainly requires level theory to be rearranged, rather than easily discarded, in a direction that no longer presupposes ontological hierarchy. The earthing of figurational sociology therefore does not mean a break with Elias, but a careful recalibration and a return to his valid intuition: that social processes must be thought through wider physiological, biological and now geological continuities. Figurations must therefore be posed as geo-bio-social arrangements in which detachment does not mean an external view, but the capacity to recognize, from within the very chains of attachment, how the products of human control begin to organize the Earth and then return from it as conditions of future interdependencies.

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