

## Introduction: Scientific Personae and Their Histories

Lorraine Daston and H. Otto Sibum

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*Max-Planck-Institut für Wissenschaftsgeschichte, Berlin*

The ten essays in this special issue of *Science in Context* address the formation of scientific personae from the sixteenth through the twentieth centuries in Europe and North America. The departure point for the collection was a year-long (1998–99) research project (including a final conference) on “The Scientific Persona” organized at the Max Planck Institute for the History of Science, Berlin. This project was in turn inspired by a seminal essay by the French anthropologist Marcel Mauss on the historical and cultural development of the category of personhood, from the tribal *personnage* to the modern *moi* (Mauss 1938). Because the application of Mauss’ term “persona” to the history of science is somewhat novel, and also unforeseen by Mauss himself, we must first explain what is meant by the term in these essays, and why we believe Mauss’ historicization of personhood, somewhat modified, to be illuminating for the history of science.

Mauss’ essay, “Une catégorie de l’esprit humain: La notion de personne, celle de ‘moi’. Un plan de travail,” originally delivered in 1938 as the Huxley Memorial Lecture in London, reveals its program already in its title: it was meant to present British colleagues with an example of the “French School of Sociology,” more particularly “the social history of the categories of the human mind” (Mauss 1938, 263). Mauss wished to display the possibilities of this historicized neo-Kantianism by means of a prototypical Kantian example, the self, *das Ich* (Trendelenberg 1908), assumed by modern philosophers to be an innate mental category. To this end, he traced a long developmental arc from the rites of *personnage* in ancient Greece, Rome, and India (which he believed to be to some degree paralleled by extant practices among the indigenous peoples of North America and Australia), through the institutions of Roman law and medieval Christian theology that forged the *persona*, to the eighteenth-century emergence in a few European cultures of the *moi* or self. Mauss’ three phases might roughly (the word is used advisedly – he insisted upon the crudeness of his first approximations) be characterized as follows. In societies organized around the *personnage*, or “role,” identities and the names that designate them are recycled from generation to generation, so that ancestors are endlessly reincarnated and the social structure of the clan appears static. These reincarnations are often reinforced by inherited names, ranks, rights, and functions, and symbolized by ceremonies involving masks to map the individual face into the ancestral role. The Latin word *persona* in fact means “mask,” and Mauss located the critical transitional phase between *personnage* and *moi* in Greek and Latin moral philosophy and law, later

modified by Christian theology, which together made the *persona*, a compound of mask and face, of “the individual in his naked nature, all masks ripped off, and, on the other hand, the sense of artifice is retained: the sense of what is the intimacy of this person [*personne*] and the sense of what is rôle [*personnage*]” (Mauss 1938, 277). The Christian concept of the rational soul (*persona – substantia rationalis individua*), at once individual and generic, crystallized the notion of the human person in the Latin West through the seventeenth century (cp. Rheinfelder 1928). Only in Enlightenment Europe did a completely individualized concept of the *moi* or self emerge, understood as the contents of consciousness. Mauss did not rule out the possibility of further moral and metaphysical transformations.

Mauss’ sweeping anthropological comparisons have the antique savor of *The Golden Bough* era, and he moreover admitted the sketchiness of his characterizations and evidence. Yet as in the case of his essay of the gift (Mauss [1925] 1990), to which similar qualifications might be made, Mauss’ insights have proved stimulating even to those who wish to amend them in light of further evidence (Strathern 1988, Thomas 1991, Wiener 1992, Carrithers et al. 1985, Heelas and Lock 1981). We propose to try out Mauss’ intermediate notion of the *persona* in a domain he would probably have never intended: the creation of certain scientific types of person. By “scientific,” we mean something closer to the German *wissenschaftlich*, embracing the human as well as the natural sciences, than the more restrictive contemporary anglophone usage. This ample construal of the term is important to avoid anachronism – the narrowing of the English “science” (and the cognate French *science*) occurred only in the nineteenth century – but also to keep our historical quarry firmly in sight: when, where, and why did distinctive scientific personae (e.g., the “scientist” as opposed to the “natural philosopher,” the *scientifique* as opposed to the *savant*, the *Wissenschaftler* as opposed to the *Gelehrter*) appear? Although the attempt to apply Mauss’ anthropological notion of the *persona* to the history of science is new, there already exists a literature, scattered but significant, which has attempted to carve out a middle course between scientific biography and the history of scientific institutions, attentive to how cultural categories intersect with individual lifelines (Outram 1978, Olesko 1991, Shapin 1991, Clark 1992, Biagioli 1993, Shortland and Yeo 1996, Lawrence and Shapin 1998, Fara 2000, Jordanova 2000). Beyond the history of science, there is a burgeoning literature on the history of the self, much of it inspired by the works of Norbert Elias (Elias [1969] 1977), Michel Foucault (Foucault 1984), and Charles Taylor (Taylor 1989). We are much indebted to this research, and hope that the concept of the scientific persona will be seen, *inter alia*, as a useful term around which to group these studies.

Intermediate between the individual biography and the social institution lies the persona: a cultural identity that simultaneously shapes the individual in body and mind and creates a collective with a shared and recognizable physiognomy. The bases for personae are diverse: a social role (e.g. the mother), a profession (the physician), an anti-profession (the flâneur), a calling (the priest). There is no one-to-one correspondence between any given social category and the existence of a persona:

many venerable professions do not crystallize into a persona (e.g. the cook), while other activities that are established neither by institution nor remuneration nor specialized education nonetheless do cohere into one (e.g. the social critic). Personae are creatures of historical circumstance; they emerge and disappear within specific contexts. A nascent persona indicates the creation of a new kind of individual, whose distinctive traits mark a recognized social species. The papers in this collection trace the emergence of various scientific personae, where “scientific” is understood broadly enough to embrace the instrument maker, the scholar, the technocrat, and the professor, as well as the experimenter and the naturalist. Although the chronological center-of-gravity is the nineteenth century, the period during which new words like “scientist” (*der Naturwissenschaftler, le scientifique*) were coined for a group that laid claim to ever greater cultural recognition, the papers span the sixteenth through the twentieth centuries in order to capture the historical models for and development of scientific personae. In the same comparative spirit, the papers deal with cases in Britain, France, Italy, Germany, and the United States, as well as disciplines ranging from physics to botany, classical philology to astronomy. Although these papers are peppered with proper names, they are not about individuals, but about species – about personae, rather than persons. They investigate the personal element in science not as biographers but more as botanists, piecing together a type specimen that represents a class rather than any individual in particular. The aim of the collection is to introduce the concept of persona to the history of science, by showing how it can be fruitfully deployed in diverse periods, locales, and disciplines.

Like Mauss, the authors of these papers are concerned with the emergence and implications of categories of people – of collective ways of thinking, feeling, judging, perceiving, working – rather than with individual biographies in all their idiosyncratic particularity. If personae are not individuals, nor are they simply stereotypes or social roles. The Latin word *persona* originally meant “mask,” but we must be careful not to project our modern understanding of the mask onto ancient usage. For us, masks are easily donned and doffed, just as for us actors (both on stage and in society) step easily in and out of roles, without thereby transforming their core identities as individuals. Even the sociological use of the term “role” allows one and the same person to assume several of them serially, as context demands (Goffman 1969). As a metaphor, the mask in modern parlance is a topos of insincerity: to wear a mask is to disguise one’s authentic self, to succumb to social constraint and convention. The modern opposition of mask to true self mirrors that between the artifice of society versus the genuine nature of the individual, both the legacy of Jean-Jacques Rousseau’s moral and political theory of inauthenticity. In contrast, the ancient meaning of persona that is implicitly invoked by these papers recalls the dramaturgy of masks as makers, not destroyers of true identities. To put on a mask in ancient Greek and Roman theatre (and in the rites of passing analyzed by Mauss) was transformative, to attain rather than to suppress genuine selfhood. To understand personae in this sense is to reject a social ontology that treats only flesh-and-blood

individuals as real, and dismisses all collective entities as mere aggregates, parasitic upon individuals. Personae are as real or more real than biological individuals, in that they create the possibilities of being in the human world, schooling the mind, body, and soul in distinctive and indelible ways.

Perhaps the most striking feature of the personae is that there are so few of them in comparison to individuals. In some cultures – Mauss provided several examples in his seminal essay – a small set of social identities, derived from ancestors or totem animals or gods, is endlessly repeated, generation after generation. Often the assumption of a persona is combined with a coming-of-age ritual, and the assumption of a new-old name, as in the case of confirmation, induction into certain religious or fraternal orders, or assuming the office of pope. Even in secularized cultures like our own, the stock of names is paltry compared to the number of individuals who bear them, and the choice of a name for a baby almost always locates the newborn within a tradition – be it of saints, forebears, or heroes (Wilson 1998). The individual is subsumed within a collective identity, symbolized by names handed down for generations. In many cultures, personae are the literal incarnation of tradition, projecting a past (legendary or historical) onto the present and into the future. Personae negate the facts of human mortality and individuality. In every generation there will be bearers of the ancient names and identities; in every generation the social order crystallized by personae will be renewed.

Such customs may seem quaint in connection with modern science, with its bold individualism (think of the eponymy of laws, theorems, and units of measurement, and of the historiography of great names), and its prestissimo pace of change. Since at least the seventeenth century, the natural sciences seem to have resolutely erased, not relived their past. They are amnesiac disciplines, and insofar as they have a history of their own making, it is an epic history of titanic (and quirky) individuals. Hence the modern sciences seem to be poor candidates for the anthropological category of the persona. But before leaping to the all-too-familiar opposition between traditional and modern cultures, we might reflect on the stubborn collectivity of words like *der Wissenschaftler*, *le scientifique*, the scientist: although we have a plethora of names for scientific specialists (entomologists, crystallographers, mycologists, chemists, ornithologists, etc.), and although specialist journals and societies have notoriously fragmented the unity of science as both a corpus of knowledge and a social institution, both practitioners and laymen nonetheless cling to the collective denomination “scientist” and its various cognates in other languages. The very superfluity of umbrella organizations like the British Association for the Advancement of Science or the *Versammlung deutscher Naturforscher und Ärzte* should give us pause: they were established just at the time that scientific specialization, as documented by the hyperbolic increase in specialist journals, societies, and university chairs, took off. The word “scientist” bears witness to a persona that resists the multiplication of identities even at the disciplinary level, not to speak of the level of the individual.

The papers in this collection address fundamental issues concerning scientific personae: how do they emerge and develop in context, in what ways are they cemented and transmitted, how do they shape the individuals who incarnate them, what purposes do they serve, and what is the relationship between knowledge and the persona of the knower? First: where do personae come from? Under what historical conditions does the persona of the *Naturforscher*, the *femme savante*, or the technocrat crystallize? The rise of a persona is a relatively rare event, and not to be confused with professionalization or institutionalization: to be a pastry chef or for that matter an inorganic chemist is to follow a profession, but not to embrace a persona. To achieve a persona presupposes a certain degree of cultural recognition, as well as a group physiognomy that can be condensed into a type. In these accounts of the emergence of the new personae there is an element of cultural cut-and-paste: Lorenz Oken's *Naturforscher* draws upon the *gut-bürgerliche* traditions of tavern camaraderie and *Hausmusik* (Myles Jackson); J. Robert Oppenheimer successively and successfully became the very model of the modern theoretical physicist by combining elements of the theorist, the teacher, the administrator, and the advisor (Silvan Schweber). Sometimes it is possible to identify a literary prototype, as in the case of the eighteenth-century Italian poet Diamante Medaglia Faini and her tutor, the mathematician Giambattista Suardi, whose relationship closely followed the models set out in the pages of Bernard de Fontenelle's and Francesco Algarotti's stylish works of science popularization (Paula Findlen). There is no creation *ex nihilo*. But there is creation, nonetheless: these personae are genuinely novel, distinctively so.

To fashion a new persona requires a delicate balance between old and new cultural forms. The novelty of some of these personae can in some cases be measured by the strength of resistance to them: Count Suardi was only one of many early modern would-be natural philosophers or mathematicians forced by his family to study law, medicine, or theology (Findlen; cp. Feingold 2002); Nietzsche's philologist colleagues protested vehemently against his attempt to create a hybrid persona of *Wissenschaftler-Künstler* in *Geburt der Tragödie* (William Clark). Michael Hagner emphasizes how the "brain-clubs" in which distinguished men bequeathed their brains (and skulls) to anatomists violated cultural taboos about the propriety of beheading non-criminal corpses, while at the same time appealing to religious sentiments concerning relics and conventions of male honor and friendship.

Second, what are the techniques that mold these new kinds of selves, the relationship between life and works? As several papers emphasize, these are not merely externally staged selves, masks in the sense of inauthenticity. These techniques shape selves from within: sharpening the senses, channeling attention, expanding or contracting the credible, fixing emotional allegiances, training patterns of inference and argument, bending personalities, instilling an ethos. Early modern married scholars who had to solve the novel problem of combining study with the distractions of family life developed a habitus of "learned forgetfulness," that form of intense concentration that makes it possible to ignore one's immediate surroundings (Gadi

Algazi). Experimenters like Moritz Hermann Jacobi had to find ways of making the mute skills of the artisan communicable and conceptual in order to win recognition for their findings as a form of knowledge, as well as an artisanal accomplishment (H. Otto Sibum). These are the very concrete disciplines – intellectual, moral, corporeal – that consolidate abstract scientific disciplines. The relationship between individual and persona is considerably more integrated than that between representation (literary, artistic, mythological, hagiographic) and reality. Personae create new ways of being in the world, modifying everything from perception (the botanist’s refined sense of color) to character (the patience and perseverance of the precision measurer) to forms of problem-solving (the technocrat’s pinpoint focus) to bodily demeanor (the professor’s voice and posture). No specific individual scientist ever fully incorporates the scientific persona, but individuals can be molded by their masks or portraits, Dorian Gray fashion.

The match between person and personae is never exact, however, and the management of the dissonance between the two shows how great the restrictive pressure of the persona on the individual can be. Anne Secord describes the ludicrously unsuccessful attempts of Samuel Smiles to press artisan botanist Thomas Edward into the mold of the modest, humble, self-made scientist, and Edward’s own robust efforts to identify himself with a quite different persona, the genial born-naturalist. Here, persona threatened to overwhelm self. Janet Browne and Cathryn Carson examine the ways in which scientific fame and the expectations of a large public shaped the later phases of meteoric careers in the cases of Charles Darwin and Werner Heisenberg, respectively. Both papers emphasize the dialectic between the scientist and his public, more as a process of mutual adjustment than as a tug-of-war. The contrasting expectations of Victorian Britain and post-World-War-II Germany reveal the centrality of cultural context in defining the content of the scientific persona. Browne draws attention to how the trappings of modern celebrity, including widely disseminated photographs, pointed caricatures parasitic upon such photos, and the characteristic relationship of “distant intimacy” to the public shaped Darwin’s persona as Victorian intellectual. Carson suggests that Heisenberg’s participation in the ideal, so deeply rooted in the *Bildungsbürgertum* of his youth, of a coherent individual makes the concept of the persona (as opposed to an ensemble of roles) particularly useful for German intellectuals of his generation.

Third, what good are personae? All of the papers attend to functional aspects of personae. Darwin, Heisenberg, and Oppenheimer commanded respect in circles far wider than science by speaking “as scientists”; Nietzsche lost the respect of his colleagues (but arguably gained that of a far larger public) by refusing to speak in this voice. Edward was awarded a tidy pension for so perfectly embodying (at least in Smiles’ biography and George Reid’s illustrations) the humble naturalist, albeit at the expense of the good will of his neighbors and his own sense of self. The *Liedertafel* evenings of the *Versammlung deutscher Naturforscher und Ärzte* partially succeeded in cementing the camaraderie among German researchers that Oken hoped would not only elevate them to the status of their French and British colleagues in

achievement, but also provide a model for German national unity. The consolidation of the persona of the *Handwerksgelehrter* by Moritz Jacobi and other early nineteenth-century German experimentalists established new university chairs, increasingly equipped with laboratories, and eventually the grand German scientific institute, the architectural expression of the man of science as professor, civil servant, researcher, *Bildungsbürger* and *pater familias* (family accommodations were built in). And, in a gift exchange worthy of a monograph by Mauss himself, the great men who left their brains to science were repaid with admiring monographs that contributed to the everlasting fame of their bodies as well as their minds – scientific hagiography in an anatomical vein. Once again, the interaction between the society that must grant significance to a persona and the individuals who must embody it occupies center stage, underlining the hybrid character of the persona concept between individual and society. Symbols, values, and meanings – the stuff of culture – are essential components in this interaction.

The notion of persona as deployed in these papers might reawaken all-too-familiar historiographical worries. For many years now, historians of science have taken considerable care to distinguish the mythologies of science from the historical facts of the matter. It is only a slight exaggeration to say that we form our professional identities by discarding the genealogies of science textbooks and debunking the biographical anecdotes of science lore. We are the ones who pique ourselves on knowing that Kepler's laws were never called such by Kepler himself; that Darwin believed in the inheritance of acquired characteristics; that Galileo was singularly uninterested in circulating his telescopes to other astronomers. It is a reflex among us to distinguish between representations of scientists (in biographies and autobiographies, in works of literature, art, and film) and the actual lives and works of scientists. Everywhere, always, we are on the alert against the mythic and the allegorical. Against the background of this gimlet-eyed skepticism, the study of scientific personae may stir suspicions: what is a scientific persona but a mythology by another name? Since personae are collective entities, never fully realized in historical individuals, how can they be reconciled to hard historical facts? Worst of all, might not scientific personae, especially in their idealized form, open the back door to scientific hagiography?

These anxieties rest upon an ontology that is itself a historical artifact worthy of inquiry: the individual is more real than the collective, the local is more real than the global, the concrete is more real than the abstract, the jottings of the archive are more real than the testimony of portraits and novels. Of course the papers in this collection deal very concretely and locally with named individuals who left verifiable traces in texts and archives. But they also invoke entities – the scientific personae – whose Cartesian co-ordinates cannot be so precisely defined, and which are nonetheless real, in that they cause things to happen in the world. These papers are rich in examples of how the persona of the knower is intimately intertwined with knowledge. Hence we must cultivate a kind of double vision as historians, simultaneously fixing the

individual scientist and the persona in our sights. This implies taking a different view of sources like portraits and novels that take scientists as their subjects: they may be mythologies not in the historian's sense of being false to facts, but in the anthropologist's sense of being true to essences.

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