# Agency without Actors?

New approaches to collective action

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# 3 Science, cosmopolitics and the question of agency

## Kant's *critique* and Stengers' *event*

*Michael Schillmeier*

We lack resistance to the present.
(Deleuze and Guattari 1994: 108)

### Interrogating agency

Contemporary science studies have shown how modern sciences and scientific practices play a key role in the way in which agency is conceptualized.[1] In particular, scholars of actor–network–theory (ANT) have linked the question of agency not only to humans, but have extended their analysis to non-human "objects" or "technologies". Consequently human social relations – and the different ways in which they come into being, maintain themselves, or change – depend upon how humans and non-humans interact and affect each other. Agency, understood like this, is the *effect* of "collectives" that link and create the heterogeneity of actors (Callon 1991; Latour 1988a, 1999; Law 1994). Such a reading of agency has tremendous consequences for how to reconceive both "the human" and "the non-human" as well as understand "the social" (Schillmeier 2009a, 2010). The "matters of fact" of what is considered human, non-human or social turn into "matters of concern": they become controversial, disputed, uncertain (cf. Latour 2005).

The concept of agency appears so naturally bound to humans that it looks as if it is almost impossible to open it for non-humans without betraying modernity's self-understanding. The question concerning agency, then, notoriously creates controversial debates whenever it is conceptually and empirically linked with the non-human world. The concerns are manifold and deeply rooted in the way we moderns see ourselves as the subjects and thus the sole authors of enlightenment. The latter, which appears inextricably intertwined with rationality and humanism, is meant to free ourselves from the necessities of Nature and the unquestioned essence or representation of things. Evidently, the twentieth century and the interest in language, discourse, culture and society decentralized the question concerning agentic authorship (autonomous subject) and challenged thoroughly the Cartesian subject–object relation. Still, the controversy over non-human agency remains riddling since neither language, discourse, culture nor

society has been challenging the modernist belief that we do something to things and not the other way around. All reality, so the modern story goes, is observer-dependent and those who observe are human beings. To be sure, for sociologists humans observe not merely with their minds and sense with their senses; they appropriate other humans, things, artifacts and technologies to do so, and in turn such human–non-human relations enact the different ways in which we observe. As soon as we observe *that* we observe (with or without technologies) we *add* reality to the natural flow of things.

However, for us moderns – and sociologists are legislators of modernity – this does not mean that the non-human has agency. On the contrary, agency names a *marker of difference* to natural causes. For classical social sciences, agency is a key concept in promoting its self-conception as a critical scientific discipline that – although it appears in notoriously contingent forms – draws upon the capacity of humans to act on other humans or objects. It marks a typical human (cognitive, rational, normative, creative) ability to make a difference (make and impose choices) (1) *in* and *through* social interaction, and (2) in relation *with* nature. To what extent human agency is oppressed or enabled by social relations depends on the importance given to the power of structures that govern humans or the capability of humans to resist and change structures. For more *sociologized* versions, human agency and social structure are co-constituent social elements that make up and change social relations. Despite these possible varieties of understanding the concept, agency functions as a term to delimit disciplinary borders. If attributed to non-human and non-social objects, the term names – from the perspective of classical sociology – the (ontological) boundary to disciplines other than sociology (e.g., natural sciences, medical practice, etc.). Hence, the notion of agency gains sociological prominence by highlighting the *human and social nature of acting*; it offers a strategic tool to perform the *critical* self-understanding of social sciences that poses questions concerning our historical being.

Does conceding agency to the non-human, then, mean to be outside modern and sociological discourse? Well, yes and no. Yes, since my intention to rethink agency names – to begin with – a very "modern ethos" *to resist the present without denouncing it*, as Foucault has called it:

> For the attitude of modernity, the high value of the present is indissociable from a desperate eagerness to imagine it, to imagine it otherwise than it is, and to transform it not by destroying it but by grasping it in what it is.
>
> (Foucault 1984: 44)

In order to embrace the creativity of the modern ethos in discussing agency, I will enroll two highly different philosophers – Immanuel Kant and Isabelle Stengers – two thinkers for whom scientific practices are vital in understanding agency and for whom the relationship between science and agency is *cosmopolitical* since it brings about possibilities to resist and change the present (cosmos) and its "modes of existence" (Souriau 2009) without denouncing or destroying it. Still, the two



philosophers differ starkly concerning the question *who or what* has or is able to *have* (cosmopolitical) agency. For Kant, agency is a human-only property which defines the freedom of human nature but also enables imagining a cosmopolitan society that develops according to a "general world-history that follows the plan of nature" (Kant 1991 [1784]: 158). Hence, Kant's decisive answer to the question of enlightenment is to imagine agency as a self-referential property of human beings capable of resisting the self-established "guardians who have so benevolently taken over the supervision of men" (Kant 1983: 41). Stengers' understanding of agency on the other hand appears as a "matter of concern" that is symmetrically distributed between human and non-human entities. Thus, whereas for Kant agency *defines* man [*Mensch*] and enables a "universal history with a cosmopolitical intent" (Kant 1991 [1784]), Stengers shows that agency refers to the politics of the human cosmos [*Welt*], whereby the actors involved multiply and constantly reconfigure who/what is to be understood as an actor as well as who/what composes our common world. As Stengers lucidly illustrates, it is precisely the history of science that brings to the fore the possibility of distributing agency between humans and non-humans alike *without* rejecting the project of enlightenment. It is the agency of critical scientific practices that strengthen the ethos of enlightenment to resist the present (i.e. to evoke *events*) which – in effect – makes us imagine and live our world otherwise. At the same time though – and this is why her reading may appear "amodern" – or "non-modern" – it puts at risk the modern legacy of Kant's critique of human reason that frames the (cosmo-) politics of enlightenment as a purely human affair.

## Kant's critique

Paradoxically, the seemingly natural fact that agency is a human-only property is the effect of a critical, modern attitude against "objects" or "objectifications" that appear as matter of facts: matter of facts that (un-)wittingly and (non-)voluntarily may govern, discipline and define our human being and related practices. As the reader will see below, it has been Kant's critical philosophy – a philosophy of "purification" as Latour (1993) would say – that links modern science and scientific practices with an interest in defining *human nature*. At the same time it outlines a *political project* of identifying the human subject as the natural agentic power-holder that has the capacity to resist the control, oppression and disciplining of objects as given/giving matter of facts. Kant's scientific philosophy of human nature is a political and educational project of active self-reflection to withstand non-subjective matters of fact that may guide us.

### *Imitating science*

Intriguingly, Kant is not following Descartes here, but the events or "revolutions" (as he calls them) of Aristotelian logics and in particular experimental sciences (Bacon, Galileo, Torricelli, Stahl) to underwrite his work as scientific (cf. Kant 1998 [1781/1787]). Kant was fascinated by scientific logics that

abstract from epistemic objects in order to generate nothing but "formal rules", which adhere to the principle of "self-limiting" or "self-demarcating" rationality [*Verstand*]. He was very much aware of Aristotle's fundamental contribution to logics in a way which not only revolutionized philosophical thought but remains *in itself* uncontested. Kant considered Aristotle's logics as a truly self-closed and complete practice (1998 [1787]: BVIII). But how do sciences gain that strength when they are not just dealing with themselves as a rational operation as mathematics do, but have to relate to objects? Is it possible to make objects speak for themselves, as logic is able to speak for itself? What happens if the witness of a scientific demonstration does not have to add anything to the things observed [*der Sache nichts beilegen müsse*] although it was the scientists' own construction, Kant asked (1991 [1787]: BXII)?[2] In modern empirical sciences Kant finds that very principle working. Thus, for instance, in Galileo's experiment of the inclined plane and the rolling ball, it is precisely the experimental setting that allows the scientist to let Nature speak, to make Nature answer the questions posed by the authority of the scientist and scientific experiment. Kant says:

> It is only the principles of reason which can give to concordant phenomena the validity of laws, and it is only when experiment is directed by these rational principles that it can have any real utility. Reason must approach nature with the view, indeed, of receiving information from it, not, however, in the character of a pupil, who listens to all that his master chooses to tell him, but in that of a judge [*bestallter Richter*], who compels the witnesses to reply to those questions which he himself thinks fit to propose.
>
> (Kant 1998 [1787]: BXIII, Preface to the Second Edition)

Kant is thrilled by the experimental setting: to make Nature speak is not only to let reason speak but names the secure course of science. This is the path of enlightenment and anything else is nothing but "padding in the dark" within Sophist metaphysics and speculative reason. Kant concludes that one has to imitate the experimental setting in order to understand human nature (ibid.). Henceforth, his "critique" is seen as a conceptual tool of confining the nature of human being; that is, his/her natural determinations *and* his relationship of morality and freedom [*Moralitäts- und Freiheitsverhältnis*]. Kant's critique of pure reason is a philosophy understood as "a science of human being and his imagination, thinking and acting" (Wilmans in Kant 1991 [1798]: 85).

### *Inventing the human*

Instead of treating the human being as a "machine" or as "almost a mere passive part of the world" (Wilmans in Kant 1991 [1798]: 86) as the old philosophy did, Kant attributed agency to human beings. The human being was given an active existence and once it is defined as if Nature speaks, Kant is able to give the empirical instruction to use the power of human nature against the oppressive agency of others (Kant 1991 [1784]). Once we identify our singular human



nature, once we have purified it, we may enforce a progressing "moral culture" [*moralische Kultur*] of humanity, which allows a universal, necessary and obligatory *answer* concerning the question, "What is enlightenment?" So Kant is proposing a moral culture as the answer to his question. But what, for Kant, is "culture" in the first place? Kant:

> [t]he production of the aptitude of a rational being for arbitrary purposes in general (consequently in his freedom) is culture. Therefore, culture alone can be the ultimate purpose which we have cause for ascribing to nature in respect to the human race.
>
> (Kant 2001 [1790]: B391–392)

The Kantian Copernican Turn [*Kopernikanische Revolution*] as well as his cosmopolitanism describes the relation with the other as a *cultural (i.e., civilized) and moral praxis of becoming societal beings* of a civil, cosmopolitan society. It is culture that enacts human nature which enacts the possibility of human culture. Cultural praxis, then, names the capability of human nature to go beyond nature. But what allows Kant to talk concomitantly about the labor of (inner) human division as a subjective (transcendental) relation and as a worldly (i.e., cosmopolitan) relation? What is the relation between the transcendental subject and the cosmopolitan [*Weltbürger*]? Kant notes:

> The beautiful arts and the sciences which, by their universally-communicable pleasure, and by the polish and refinement of society, make man more civilised, if not morally better, win us in large measure from the tyranny of sense-propensities, and thus prepare men for a lordship, in which Reason alone shall have authority.
>
> (Kant 2001 [1790]: B395)

The sphere of *culture* as civil is the realm of agency, of a cosmopolitan system [*weltbürgerliches System*] that sets the purpose of man as its beginning and end. Only then do we emerge and progress as cultural beings. This is important: it is this very culturalization [*Verweltlichung*] of the moral cosmos that makes Kant a truly humanist cosmopolitan thinker. This is possible, since it is the human being only, who, "in possession of morality, as a free being" (Wilmans in Kant 1991 [1798: 87), appears as "the moral person of humankind" (ibid.: 89). Although dependent on non-human *Außendinge*, it is the *inner* capacity of humans that makes us free and different from "all other parts of nature" (ibid.). Kant's work suggests that every rational human being has the capacity (and duty) to become cosmopolitan: the more culturalized, the more human nature is performed and the more the cosmopolitan human being appears to transcend his/her animal nature. The cosmopolitan system culturalizes the *status naturalis* of the human being and fosters human nature by educating or disciplining the collective life of humans which is nothing but the pluralism of "logical", "esthetical" and "practical egoists" (Kant 1977 [1796]: 409–411).

Kant's answer to the question "What is enlightenment?" names a second order process of culture that culturalizes men "after nature"[3]:

> Laziness and cowardice are the reasons why so great a proportion of men, long after nature has released them from alien guidance (*naturaliter maiorennes*), nonetheless gladly remain in lifelong immaturity, and why it is so easy for others to establish themselves as their guardians. It is so easy to be immature. If I have a book to serve as my understanding, a pastor to serve as my conscience, a physician to determine my diet for me, and so on, I need not exert myself at all. I need not think, if only I can pay: others will readily undertake the irksome work for me.
>
> (Kant 1991 [1784]: 162)

Agency as a human-only property is a signet of freedom; freedom from any objectified pre-given technological, religious or medical expertise of how we should think and live. With enlightenment we humans must recognize that we are *already* no longer objects of "alien guidance". What we still lack though – according to Kant – is a way to perform our freedom that is able to deal with the *effects* of coming to terms that we are not governed by alien guidance – that is, not steered by a world outside our human world. It is "man's emergence from his *self-imposed* immaturity" that comes into view as a *counter-nature* against *social necessities*:

> Enlightenment is man's emergence from his self-imposed immaturity. Immaturity is the inability to use one's understanding without guidance from another. This immaturity is self-imposed when its cause lies not in lack of understanding, but in lack of resolve and courage to use it without guidance from another. *Sapere Aude*! [dare to know] "Have courage to use your own understanding!" – that is the motto of enlightenment.
>
> (Kant 1991 [1784]: 162)

Thus, enlightenment demands courage, an ethos of resistance that requires human agency. It stipulates matters of purely *inner-worldy* concerns that counteract the power of entities, forces and expertise that are seen as matter of facts that speak *for* us. According to Kant, we humans remain immature if we do not grasp the *physis* of human nature; that is, the self-referential agency of human beings. To be sure, the human being is a *homo duplex* of sensuality and rationality on the one hand and reason and free will on the other. The former couple determine the earthly side (i.e. "what and how it is") and thus relate closely to Nature. "Reason" on the other hand always wants to go beyond the sensory and desires the transcendental [*Übersinnliche*] that likes to add something to the sensory world. Free will exists independently from the "things out there" [*Außendingen*] and thus, like reason, cannot belong to Nature (Wilmans in Kant 1991 [1784]: 86). Having said this, for Kant this does not mean to set a "social rationality" against the rationality of nature. Rather, it means to make the *human*



nature of Nature speak by using "one's understanding without guidance from another". Thus, human agency is rather non-social. It appears as a *political act* instead, able – naturally as it were – to *politicize* socially acknowledged forms of rationality and belief systems superimposed by technologies and experts for our soul and body. This is Kant's credo: *Take care that you take care of yourself and take care when others try to take care of you.* Consequently, agency means human self-mediation, self-representation, self-substitution and self-agency. Kant's cosmopolitanism is a truly self-referential and self-generated process, a natural process that refers to the *physis* [nature] of man: we see the common world *as if* it is the cosmos and understand that it is from and for humans, a merely human affair, which for Kant is an interest of reason. The interests of reason order the purposes of Nature. This ability of reason is a natural one, of purposeful nature, that describes Nature as an ability of practical reason. The nature of reason generates purposes of self-referentially; the notion of Nature's purpose [*Begriff des Naturzwecks*] is a notion of reflection. We as humans go beyond Nature and while doing so perform nature's laws. We as humans represent the presentations of Nature's purposes (cf. Kant 2001 [1790]: § 75, § 85). Kant thereby culturalizes [*verweltlicht*] the Cartesian rationalism and empiricism.

### *Governing the 'unsocial social'*

Kant confesses that it is rather difficult for the average individual human being to free himself from his self-imposed immaturity. It is more likely that a public [*Publicum*] of individuals is able to freely perform self-enlightenment (Kant 1991 [1784]: 163 *et seq.*). The latter is only free and active when scholars use their reason "in front of the public of the entire literate world" (Kant 1991 [1784]: 164). Thus, public self-enlightenment should not be conflated with the mere private [*häuslich*] use, which for Kant relates to the scholars' social [*bürgerliche*] position in society (e.g., his job). In private use, institutionalized rules have to be followed (e.g., to pay taxes) in order to function properly (Kant 1991 [1784]: 164). No free exercise of reason is operative here since it *demands* a certain passivity to be socially functional. Self-enlightenment is purposeful though (and morally necessary since naturally meaningful!) if it is addressed trans-locally to the readership [*Leserwelt*] of *cosmopolitan society* [*Weltbürgergesellschaft*]. To be sure, it is rather clear *who* is able and/or who is likely to become a cosmopolitan actor in Kant's *Weltbürgergesellschaft*: It is the healthy, reasonable, literate and well-educated scholar/citizen.

But how can Kant be so sure about the cosmopolitan providence of our world? Again, the cosmopolitan constitution is part of human nature which is part of the mechanism of Nature (cf. Kant 1991 [1795]: 300–302) that paves the way to perpetual peace. As animals we humans are at war; as rational beings we humans become peacemakers, we perform nothing but the nature of cosmopolitanism that civilizes the *ungesellige Geselligkeit* of human beings. For Kant we can only answer "egoism" with "pluralism" (of humans). Thus, the cosmopolitan

"is not concerned with oneself as the whole world, but rather regards and conducts oneself as a mere citizen of the world [*Weltbürger*]" (Kant 2006 [1798]: 18). As humans we are "as well as" entities: both animals *and* rational cosmopolitans [*Weltbürger*]. This means that humans cannot be reduced to animals that solely behave due to their animal instincts, nor do they act entirely along an arranged societal plan (Kant 1991 [1784]: 144). All mettle [*Naturanlage*] is meant to develop (meaning-)fully, as does human nature. Hence, since human beings are the only rational entities on earth, they – according to the will of nature – will fully develop as a cosmopolitan collective (i.e., mankind), which overcomes the "animal being" [*thierisches Dasein*] (Kant 1991 [1784]: 146). Still, due to the very double nature of the human being, society is *not* a homogenous entity. Consequently, society has also no capacity to wholly govern human nature. We humans – as socialized/culturalized as we are – remain egoists as well. We stay humans and do not turn into complete social/cultural beings. Politics has to take this *matter of fact* into account and Kant's "Idea for a Universal History with a Cosmopolitan Intent" [*Idee zu einer allgemeinen Geschichte in weltbürgerlicher Absicht*] and "Perpetual Peace: A Philosophical Essay" [*Zum ewigen Frieden*] are a reflection about it. Hereby, Kant exemplifies the climax of the enlightened will to understand the *self-referentiality* of the human world [*cosmos*].

Kant not only "invented"[4] the human, as Foucault has argued so convincingly (Foucault 1990), but also the creation of society as a transcendental [*übersinnliche*] realm that frames, tames and educates the "unsocial sociality" [*ungesellige Geselligkeit*] (Kant 1991 [1784]: 147–148) of human beings. Thereby, (cosmopolitan) society is of a different causal reality than nature. Unlike the natural realm of causal processes and determinist mechanisms, "society" refers to the space of sociality with other humans presupposing "freedom" and "spontaneity" (Kant 1977 [1796]: 565; cf. also Kant 1998 [1781/1787] B 472–479). It is only the latter space of the social as "society" which refers to that part of human nature (reason and free will) that enables the "event" [*Eräugnis*] – agency as it were – which transcends the mere succession of natural causes and their continuation. As we have already seen, it enables Kant to conceive the self-referentiality of two different causalities: the social and its space of civil society as the realm of freedom and nature as the one of necessity.

### *Ship, camel and horse*

It is human nature that demands practical "intermediations" [*Vermittelungen*] between human beings in order to make the process of culture less "asocial" in a world of "asocial sociality". Kant names "money" as a central *Vermittelung* that stabilizes peace and renders war less possible (Kant 1991 [1795]: 309). It is human nature, human rationality *in practice* that extends its sociality with the help of intermediaries like money, which secures the future of a perpetual peace. Does this mean that non-humans gain (cosmo-)politan agency in the process of culturalization? Kant would say "no". The question of non-human agency is



neither the concern of the philosophy of man nor that of pragmatic anthropology since the "cosmos" that has to be analyzed is delimited *to and by* human nature and his/her cognitive abilities. Kant stresses:

> The opposite of egoism can only be *pluralism*, that is, the way of thinking in which one is not concerned with oneself as the whole world, but rather regards and conducts oneself as a mere citizen of the world. This much belongs to anthropology. As for what concerns this distinction according to metaphysical concepts, it lies entirely beyond the field of science treated here. That is to say, if the question were merely whether I as a thinking being have reason to assume, in addition to my own existence, the existence of a whole of other beings existing in community with me (called the world), then the question is not anthropological but merely metaphysical.
> (Kant 2006 [1798]: 18)

Consequently, it is the cosmos of the singularity of human nature and the culturalizing process of how human nature forms social relations, political action, juridical laws forms, etc. that has to be analyzed. For Kant and his modern imitators, the question of "non-human agency" has to be a metaphysical question that is systematically ruled out from being of any scientific, philosophical, anthropological, sociological and cosmopolitan concern. Having said this, Kant already saw that the "cosmopolitan law" [*Weltbürgerrecht*], which is thought to connect and civilize the globe, could not be achieved without non-human entities. For Kant it was the ship and the camel (as the "ship of the desert") that makes a global "cosmopolitan constitution" [*weltbürgerliche Verfassung*] possible in the first place since it relates people and places which couldn't be associated by humans only (Kant 1991 [1795]: 297). Ship and camel silently function as "intermediaries"[5] (technologies of transport) connecting foreign people and places all over the globe. Once we are able to share the globe with the help of the non-human, it appears necessary that all strangers that arrive on foreign land should have the right of hospitality (i.e., the right not be treated hostile); it demands to respect the "visiting right" [*Besuchsrecht*], (i.e., the "right of the other") to collectively own the finite "surface of the earth" [*Oberfläche der Erde*]. If we globally value the right of hospitality, humanity is coming closer to a cosmopolitan constitution that may bring about the possibility of perpetual peace. Interestingly, Kant was already very much aware that economic globalization unleashes the "nonhospitable conduct" [*inhospitale Betragen*] of trading states affecting inequalities, conflicts and war. Hereby, Kant argues, "the horse" may be considered as the first essential animal "tool of war" [*Kriegswerkzeug*] (Kant 1991 [1795]: 303). Still, his attitude of purifying and delimiting agency to human nature prevents him from conceptualizing agency within a cosmopolitan world in a more complicating way.

Captivatingly, for Kant, evidence of cosmopolitanization was already given since one is already able to "feel" the violation of hospitality at *one* place *from everywhere* on the globe. Obviously it was books, ships and horses that helped

to do so. With the assistance of technological or natural *Vermittelungen* one becomes aware that the ideal of a cosmopolitan law/constitution is not a phantasmagoria but a necessary, even a natural supplement to given laws (Kant 1991 [1795]: 300). Kant already had a complex understanding of modern, global topology. For Kant, gaining knowledge of the global world does not necessarily demand traveling around the globe as long as there are places functioning as "world-spaces" like big cities do (his world-space was *Königsberg* at the River *Pregel*) (Kant 1977 [1796]: 400). These places are networking spaces that offer *intermediaries* (*i.e., systems of transport* (natural and cultural)) linking the practices of science, politics, economy, as well as different cultures, countries, languages, cultural traditions, etc.

In the same vein, Kant saw that "knowledge of human nature" [*Menschenkenntnis*] – as it is obtained locally, regionally or nationally from "one's fellow and countrymen" [*Stadt- und Landesgenossen*] – has to antecede in order to acquire "knowledge of the world" [*Weltkenntnis*]. He was very much aware of the importance of global knowledge locally experienced. Nevertheless, it is vital that scientific, general knowledge [*Generalkenntnis*] *precedes* local knowledge or opinion [*Lokalkenntnis*] and not the other way round (Kant 1977 [1796]: 400). This crucial, hierarchical relationship between general and local knowledge frames Kant's *principles* of critique. Although the human being is part of Nature, it is the *general* knowledge of *human* nature as world knowledge [*Weltkenntnis*] (through which Kant makes Nature speak) that turns our understanding concerning man into a secure scientific endeavor and does not remain a mere sophist or ordinary "fragmentary fumbling around" [*fragmentarisches Herumtappen*] (ibid.). His delimitation of agency to *humans only* is very much embedded in metaphysics of "speculative reason" translated *into* the modernistic scientific belief system that is meant to solely found – and thus to make *reasonable* – the analysis and constitution of general *principles* and "eternal and unchallengeable laws" (Kant 1998 [1781]: AXII) of reason, of human nature.

### *From metaphysics to science*

Such a translation names Kant's understanding of "critique", "which marks out and defines both the external boundaries and the internal structure of this science" (Kant 1998 [1787]: BXXII–III) of the double meaning of an object as phenomenon and thing in itself. His critique of reason is meant as a general, everlasting self-contained "legacy" [*Vermächtnis*] (Kant 1998 [1787]: BXXX) of founding scientific knowledge principles that prove powerful against any form of immature, ivory-tower "ordinary dogmatism" [*gewöhnlichen Dogmatism*] (Kant 1998 [1787]: BXXXI] and related arrogant, factious and controversies as ignorant and non-scientific! Even

> metaphysicians (and, as such, theologians too) can be saved from these controversies and from the consequent perversion of their doctrines. Criticism alone can strike a blow at the root of materialism, fatalism, atheism, free-thinking, fanaticism, and superstition, which are universally injurious – as well as of idealism and scepticism, which are dangerous to the schools, but can scarcely pass over to the public.
>
> (Kant 1998 [1787]: BXXXIV)



Hence, it is Kant's basic motivation to turn *the metaphysics of reason* into a *science of human nature* (Kant 1998 [1787]: BXIV–XV) that also grounds his normative ideas on cosmopolitanism. As we have seen, Kant suggests *imitating* experimental sciences that are able to scientifically deal with their objects of concern. This leads him to his famous "Copernican Turning":

> The attempt to think these objects will hereafter furnish an excellent test of the new method of thought which we have adopted, and which is based on the principle that we only cognize in things a priori that which we ourselves place in them.
>
> (Kant 1998 [1787]: BXVIII)

Obviously, Kant cannot experiment with objects as natural scientists do, since his experimental test of understanding "pure reason" is meant to look at objects sensed as well as objects that transcend the limits of possible experience. To do so, Kant experiments with "conceptions and principles" instead. He compares his experiment of pure reason that separates off "things in themselves" from "objects thought" with the chemists' experiment of reduction:

> The analysis of the metaphysician separates pure cognition a priori into two heterogeneous elements, viz., the cognition of things as phenomena, and of things in themselves. Dialectic combines these again into harmony with the necessary rational idea of the unconditioned, and finds that this harmony never results except through the above distinction, which is, therefore, concluded to be just.
>
> (Kant 1998 [1787]: BXXI)

Once arrived on the secure path of science, it is the critique of reason that also safeguards the ideas concerning the general history of his highly normative concept of cosmopolitanism and with it the proof of the nature of agency as a human-only property. In Kant's cosmopolitanism, technologies and natural objects play a/their natural role "to acquire knowledge and skill for the world". "But," and Kant makes this very clear, "the most important object in the world to which he can apply them is the human being: because the human being is his final end" (Kant 2006 [1798]: 3). Although the world of his time was utterly changing by starting globalizing practices that cannot be done and thought without ship, camel or horse (next to other technologies), cosmopolitics remains – scientifically, philosophically, anthropologically and sociologically – a mere human affair. Hence, although Kant's humanist cosmopolitanism rests upon *non-humans* that either stabilize perpetual peace between humans (ship, camel

and money) or engage in war (horse), he is not able to grant them political, cultural or "cosmopolitical agency" [*Welthandlung*], as one could call it. Rather than being treated as "mediators" that (trans-)form and multiply (generate, maintain, dispute, change) the cosmos of what is to be understood as the human social [mankind], third elements remain "intermediaries" of human nature – they are nothing but *transporters* of human nature – in theory and practice alike. The sociological imagination has been deeply affected – wittingly and unwittingly – by Kant's "asymmetrical anthropology", which understands natural or artificial objects as pure intermediaries that *do not* gain political agency in social/cultural processes.

## Stengers' event

### *Experimental fiction*

Like Kant, philosopher of science Isabelle Stengers is interested in cosmopolitics. Still, unlike Kant's normative view, her interest is not the analytic and application of general principles of human nature. Rather, following a "diagnosis of *becoming*" she unfolds a radicalized interpretation of cosmopolitics that systematically leaves open who or what is part of the cosmos and who or what can be considered a cosmopolitical actor. Her work tries to resist "imperialist imaginations" of generalists that translate cosmopolitics into a theoretical tool. This is why Stengers' "cosmopolitical proposal" appears so controversial; it is not conceived as an application of a given theory but one that challenges the authority of theory:

> How can this proposal be distinguished from issues of authority and generality currently articulated to the notion of "theory"? This question is particularly important since the "cosmopolitical" proposal, as I intend to characterize it, is not designed primarily for "generalists"; it has meaning only in concrete situations where practitioners operate. It furthermore requires practitioners who – and this is a political problem, not a cosmopolitical one – have learned to shrug their shoulders at the claims of generalizing theoreticians that define them as subordinates charged with the task of "applying" a theory or that capture their practice as an illustration of a theory.
>
> (Stengers 2005: 994)

This quote of Stengers' suggests a kind of counter-cosmopolitanization against the peak of a normative cosmopolitanism that appears as a universal narrative of human nature: Kant. Having said this, like Kant she is interested in performing experimental settings. Unlike Kant, though, her critical interest is situational and not theoretical. She shares with Kant the admiration and astonishment of the *event* of modern science that "implies and imposes (...) a new type of truth" (Stengers 2000: 73), a "new use of reason'" (Stengers 2000: 80) performed by



the experimental sciences that escapes the idea of being just another "imputed" [*angedichtet*] or fictive nature (Kant 1998 [1787]: BXIV): "When Galileo experimented with balls of a definite weight on the inclined plane", Kant argues,

> a light broke upon all natural philosophers. They learned that reason only perceives that which it produces after its own design; that it must not be content to follow, as it were, in the leading-strings of nature, but must proceed in advance with principles of judgment according to unvarying laws, and compel nature to reply its questions.
>
> (Kant 1998 [1787]: BXII–XIII)

For both Stengers and Kant, Galileo's experiment is prominent for silencing *skepticism*. In the Middle Ages, every single argument which could put God's omnipotence in danger was rejected, since God was set as the standard against which the truth of argumentations was measured. Among those arguments that could be accepted there were (1) those logically deducible, and (2) those provable by direct facts; nothing could be said against them, since both types were thought to reveal themselves as true. Thus, when an argument was logically contradictory, there was no doubt it had to be automatically rejected – one had to suppose God was also quite logical, not accepting contradictions in His realm. But *abstract* arguments (neither logically nor empirically deducible) were problematic; they tried to go beyond empirical observations in order to affirm something about the nature of the world. This was a dangerous type of argument, since scientists dared to say what was possible and what was impossible. This audacity was a theological scandal. What looked impossible in our eyes could not be so in God's eyes, since nothing is impossible for God. Consequently, a scientist making a claim about the world ("it is so, and cannot be otherwise") would pass as pretentious: an offence towards God, the only instance able to decide between the possible and the impossible, the suitable and the unsuitable, the thinkable and the unthinkable. Scientists were accused by the Church of just pretending to know about the world, but actually they knew nothing; their arguments were invented, just a figment of the author's imagination. Abstract claims like that, then, were not only seen as insolence; they were nothing but a *fiction*, disconnected from the real state of things and the world. Human reason and the reason of things could not be linked up. For this reason, abstract claims had to be rejected.

What Galileo did was, indeed, vulnerable to such accusation, His conclusions were not derived from *observation*, but rather from a device, an artifact organized and performed in a laboratory. That is, they were not derived from a comparison with Nature, but from an abstract, idealized, geometrized world, which he had *recreated* by his experimental setting. This lack of connection with "real phenomena" needed to be justified and defended; criticism had to be counter-argued. Was not his experiment, after all, only a "nice invention", something arbitrarily imputed at Nature? Galileo did not try to dispute the established view by saying that fictions invented by people may as well be true. On the contrary,

he admitted that, under normal circumstances, any interpretation of phenomena refers back to a human actor – and with him or her, it links with wishes, desires, biases, subjectivity, etc. Therefore, interpretations may be considered as fictions. Nevertheless, he tried to convince the skeptics that what he had done was not a personal interpretation of this kind, and definitely not a fiction, since no human actor is the author of this interpretation, but Nature itself. However, how could Galileo claim such a thing? He must have contrived something to make others believe him; his word alone would not suffice. Galileo was not silencing others just because he was in a powerful position, or by simply showing how rational and reasonable his construction was, neither through collective negotiations nor through intersubjective practice of rational discussion as suggested by Jürgen Habermas' work (cf. Habermas 1995). Galileo and his heirs silenced accusations of creating fictions with the help of an invention of a new device: the experimental setting, with the ability to let Nature speak on its own. Obviously, the experimental setting is an artificial setting that creates facts of art, artifacts.

What is decisive of the experimental setting, Stengers argues (2000, Part II), is that the originator of that setting can withdraw from the experiment and let the experiment itself give witness to the movement. It makes the setting speak and it silences the skeptics. When a scientist designs an experimental setting, s/he embodies in this setting a particular conception. For instance, when Galileo constructed the famous inclined planes, he was also proposing a definition of movement, and a particular relation between these movements. One could claim that this construction was just a way of representing a state of relationships given in the outside world, but the "outside world" was nowhere to be seen: we can only see a scientist creating a particular small-scale world, enabling the unfolding of particular relationships inscribed in it, so that, when the device was put to the test, it produced the types of results and relations that our scientist had inscribed in it (ibid.). Efforts to construct such a world do not grant success: the experiment may still fail; but the fact that some experiments end up in failure does not contradict the idea that experiments are constructed in order to sustain a particular order of things. Order which, if things hold together, will make the first step towards its institution as "truth". Thus, the order is not defined by correspondence to an invisible, underlying reality, but by whether it holds or not (cf. also Latour 1988b; Lynch 1993; Knorr-Cetina 1999).

However, if the experimental setting is to become a definite proof, it must also prove wrong – and consequently exclude from the range of possible realities – any other alternative theory which would put the scientist's explanation in danger (Stengers 2000). This is where the "abstraction", typical of the experiment, plays the important role. The scientist chooses some characteristics and excludes others in order to constitute a device which performs particular relations, so that he can construct a world that reacts as s/he predicts (ibid.: 84–85). Galileo brings into the experiment everything that helps him to perform the type of movement he wants to illustrate. Those elements which have no role to play, or could even be threatening for the performance of the relationships, are eliminated, as well as what cannot be reduced to experimentation. Only what Galileo



can use to make his point remains. This exclusion has the aim of preventing the device from performing somebody else's predictions. In that way, the criticism of the relativist skeptic, who would claim that fictions are disconnected from reality and therefore equally valid, is silenced. Not by discussions or logical demonstrations, but "by the production, always local, selective, and limited, of ways of discriminating between fictions" (Stengers 1997: 159). The *mise-en-scène* of a device that is able to support *some* fictions, and not others.

Another landmark of the experimental setting, so Stengers, is the silencing of rival positions, since it makes refutation much more difficult. If one wants to challenge the discovery of a scientist, one cannot simply say "I do not accept your position, I do not agree with you". One still has to produce an answer regarding the experimental device: Why would these results be found if the scientist were not right? Then, the scientist trying to disagree must prove the other wrong in her own terrain: she must challenge the experimental setting itself. Galileo has not spoken, but the ball has moved. If one wants to contradict Galileo, one will have to challenge not Galileo himself but the phenomena under test, the behavior of the ball.

### *The event of agency*

After this description, we would be surprised to see that an experiment is not accused of tautology. The scientist prepares a setting so that it performs according to his/her own ideas, and then we marvel that the device performs the relations that have been inscribed in it by the very scientist! The key movement is up to that: even though the setting has been invented and arranged so as to produce these results, the confirmation of results is not taken as a proof of the fictive nature of facts (a tautology), but precisely as a proof of their inevitability. It cannot be otherwise; things function this way – *reality itself has spoken.* Granted, two different agencies are said to be at work – the scientist's and the facts'. It is quite evident that the scientist actively intervenes in the constitution of facts as "actors in the discussion" – not only to make them speak, but to let them "speak in a way that all other scientists recognize as reliable" (Stengers 1997: 85) and believable.

The creation of the experimental device, gives birth to a new relation of forces:

> The art of the experimenter is in league with power: *the invention of the power to confer on things the power of conferring on the experimenter the power of speaking in their name.*
>
> (Stengers 1997: 165, emphasis in original)

Along such

> a *new "use of reason"*, capable of doing what was no longer believed possible to do. (...) What is presented as having been re-conquered in principle,

> if not (still) in fact, is precisely *something one believed to have been lost: the power to make nature speak*, that is, the power of assessing the difference between "its" reasons and those of the fictions so easily created about it.
>
> (Stengers 2000: 81)

Nature is now an actor on its own. The authority of the scientist withdraws in order to let things speak, so that afterwards s/he is recognized as the legitimate speaker of the things:

> Scientists recognize "nature" as their sole "authority", as the phenomenon they are concerned with, but they know that the possibility for this "authority" to create authority is not a given. It is up to them to constitute nature as an authority.
>
> (Stengers 2000: 93)

Here, then, we find the singularity of modern sciences: to have invented a device, which allows a new actor to participate in discussions on knowledge:

> The singularity of scientific arguments is that they involve third parties. Whether they be human or nonhuman is not essential: what is essential is that it is with respect to them that scientists have discussions and that, if they can only intervene in the discussion as represented by a scientist, the arguments of the scientists themselves only have influence if they act as representatives for the third party. With this notion of third party, it is obviously the "phenomenon studied" that makes an appearance, but in the guise of a problem. For scientists, it is actually a matter of constituting phenomena as *actors* in the discussion, that is, not only of letting them speak, but of letting them speak in a way that all other scientists recognize as reliable.
>
> (Stengers 2000: 85, emphasis added)

With this, an *event* appears. This notion of "the event", which Stengers borrows from the philosophy of Whitehead (1978) and Deleuze (2006), supposes the emergence of some novelty in an unforeseeable way. A relevant occurrence, which is nevertheless contingent, not necessary: it happened, but it could as well not have happened, and it is neither predictable nor reproducible. But once it has taken place, it conditions facts coming after it, of which it will become a constitutive part. The event is the "terrain of invention". For Stengers, this event is modern science, the emergence of a new way of arguing, a new way of making facts themselves talk, while taking this setting not as an artifact, but as a true communication of reality's nature. A new way of arguing which is ambivalently connected to the power of fiction. Science uses this power in its maximal potency to create, while it also negates it so as to distance itself from fictions:[6]

> It is the obviousness of this power of fiction that constitutes not only the "terrain of invention" for modern science, but also the means by which it will stabilize itself so as to better detach itself from it. Wherever a "new use of reason" is produced – and this is how I propose to identify the singularity of the modern sciences – it will imply and affirm the inability of reason alone to vanquish the power of fiction.
>
> (Stengers 2000: 80, emphasis in original)



The event, then, manages to constitute the phenomenon as a witness, and this transformation, the emergence of this event, will change our history thereafter. From that point onward, scientific discussions among humans will not be solved by humans alone, but the discussion will be joined by non-human entities which will be recognized as "authorized" to settle a debate; that is, to introduce novelty and difference. This means that science will become a constitutive part of our lives and of society. A scientific proposition presents us with a fact that aspires to be recognized as a member of our collective, and, with each scientific fiction which is constructed and accepted as a fact, our collective changes. A new *collective* emerges, of whom the new scientific "discovery" is a member, and whose introduction redistributes agencies, identities and roles within the collective. Therefore to recognize this is also to acknowledge the mutual constitution between subjects and objects. Science brings about new ways of rethinking ourselves. This constitutive role of science in the formation of our collective, in our history, helps us explain, according to Stengers, the common feeling that scientific discoveries are "ahistorical". Indeed, she says, we all think that if Beethoven had not existed, his symphonies would never have been created. But we are all convinced that if Galileo had not existed, somebody else would have "discovered" the same laws about the same natural phenomena (Stengers 2000: 39–40). But the reason we have this impression is not because science is ahistorical – as if science was unaffected by history, or as if its activities happened outside history. On the contrary, it is its intense entanglement with history that makes us think that scientific discoveries are unavoidable: science constructs our history to such an extent that it is impossible for us to think that some facts could be otherwise. Science constitutes a collective as much as facts and thereby redistributes agency.

According to Stengers, this is one of the most striking characteristics of science, which once again is made invisible: the intermingling and entanglement between the world of things and the world of humans, between facts and history. Or rather, their mutual constitution: if a collective creates a fact, the fact is in its turn also creating a collectivity. So, in contrast to the politics of the Greek city, which separated between "human affairs [*praxis*]" and "the management–production of things [*techné*]", Stengers argues that the innovative politics of modern science achieved an integration of *praxis* and *techné*, of history and facts (Stengers 2000: 163–164). Thus modern science constantly re-invents collective action and with it the cosmos of entities that gain agency in politicizing our world.

> *Material, electron, vacuum* do not receive an "operational" definition, as if it were enough simply to decide to subject them to an operation; rather, they

> become that on which *we* are now able to operate, and it is this "we" that is decisive, the creation of a collectivity with which matter, electron, or the vacuum will now make history. It is from the *political* definition of this collectivity that epistemological terms such as *objectivity* or *theory* take on meaning.
>
> (Stengers 2000: 94)

## Conclusion

The discussion of Kant and Stengers on experimental sciences has shown that two different forms of "critical" agency became apparent. Kant, who delimited agency to reasonable humans only, and Stengers, who shows that agency is the effect of a conjunctural event of associating human and non-humans. Stengers names "an astonishing disproportion" between Kant's appraisal of the experimental setting that is read as "the discovery of the laws of motion" and Galileo's experiment describing "a motion whose prototype is the descent of highly polished balls down the length of a smooth inclined plane, or the eternal oscillation of an ideal pendulum", which names "the practical identification of the (limited) class of accelerated motions whose prototype is pendular motion or the fall of bodies in the absence of friction" (Stengers 2000: 73–74).

Imitating science as the discoverer of the laws of Nature, Kant becomes a philosopher-judge whose critical experiment of thinking a priori concepts and principles makes human reason speak itself. Objects do play a role but only in the way we think them, as if they are empty boxes to be filled. Through Kant, an object itself is not only a black box, it is *made* a black box by human reason; an object which in effect obviously lacks agency. The experimental setting of science that deals with the invention of objects silently turned into a formal logic of human nature that equates with reason. The strength of the local experimental setting is transformed into a universal critique of general knowledge that precedes local knowledge; objects turn into mere "concepts and principles" of reason losing any capability "to object to" the very fiction of reason itself. Still, Kant's experiment of defining general scientific principles of human nature was and is for the moderns *the* event inasmuch as it invented "man" and his unique ability to act. For many, Kant set – once and for all – the gold standard not only of and for an adequate and universal understanding of the cosmos of human nature, but also defined the list of membership of those who do the politics within that cosmos. Kant was looking for a global experiment that offered a global self-referential and fixed *explanans* of understanding the human world. It appears somewhat astonishing then that his cosmopolitanism is nothing but the *intermediation (transportation) of human reason* whereby only humans are granted agency. Those who say differently appear non-scientific, are ethically suspicious and stumble within the darkness of scandalous metaphysical speculation.

Stengers' cosmopolitics appears highly resistant and recalcitrant towards Kant's tribunal of theory, and she has good reasons for being fractious. Unlike



Kant, she argues that it is precisely the local experimental practices of modern sciences that always give agency to third parties – human *and* non-human alike – who not only perform "reliable" witnesses, but it remains undecided if they act as *intermediaries* (transporters) or *mediators* (transformers) of the reality set in place by the experiment. Most conspicuously, Stengers points out that non-human actors have to be actors on their own right, otherwise science would lack its most powerful capability: to create new alliances and functions (cf. Deleuze and Guattari 1994). It is precisely this mode of creative and locally specific existence that Stengers' work highlights. Thus, the politics of science is a risky endeavor whenever its objects mediate and consequently may endanger the scientific practices and premises that led to the mediating power of objects in the first place. However, this does not mean that sciences have to get rid of their passion for truth or objectivity and their "struggle against opinion". According to Stengers, these controversies of re-imagining scientific practices would be inadequately described if they exhaust in a methodology of exchanging rational arguments. A critical science *must* be experimental and speculative in order to be critical by giving new alliances a presence that politicizes given and taken-for-granted order of things. Hence, the ability to question the presence and its "obvious, plausible and normal" future (Stengers 2010: 10) neither arises exclusively from, nor can be answered merely by, the scientific authority. Critique, then, does not stop before the doors of science but makes the proper understanding of science *by* science controversial as well. In a rather non-Kantian mood, Stengers stresses that the critical power of speculative, experimental sciences is not about digging out the principles of general knowledge that precedes local knowledge and triumphs over mere opinions and viewpoints:

> [T]his struggle has nothing to do with matters of principle: the opinion against which science is invented is not opinion in general. It is opinion created with reference to the invention itself, to the possibility of a new "measurement", of the creation of a new way, always local and relative, of differentiating science from fiction.
>
> (Stengers 2010: 11)

Here Stengers unfolds a particular *ethnomethodologically* motivated *cosmopolitical project* of the scientific "ecology" (Stengers 2010: 37, 40) of counter-opinion. Her cosmopolitics reflect *and* gain agency through the diversity and heterogeneity of actors which are/become part of *situated* experimental practices that configure the world observed. Thus, *scientific counter-opinion is inventive as much as it is invented by the very "matters of concern" which science creates and observes*. The entities involved are *mediators* of scientific practices and not mere spectators or intermediaries. This is what the sociological imagery can learn from her work: the agents involved are not only culturally and historically diverse but include the non-human object as well. Following Stengers' cosmopolitics, actors may come into view who/which do not fit a Kantian understanding of mature *cosmopolitical* agents at all. Actors, which are seen as mere

*intermediaries* of human reason, turn into *mediators* of "human nature", and thus disrupt, question and alter common orders of "reasonability" and "normality". This obviously includes artifacts and technologies but also "natural" agents like viruses or rivers (Schillmeier 2008; Schillmeier and Pohler 2006), and also the demented (Schillmeier 2009b), the idiot (Stengers 2008), witchcraft (Stengers 2008) and all these possible others (human and non-human alike) that are meant to be unreasonable. Such inclusion of the agentic other enacts the agency of science *that analyzes and creates new relations of heterogeneous entities and functions*. Consequently, such a reading allows questioning the very politics that qualify entities as having no agency. To resist the convention of the reasonable and the taken-for-granted matters of fact of social ordering is to construct "new alliances" transgressing and disputing the commonality and commensality of experience and to create possible novel ones instead.

With this in mind, the role of social scientists is to help bring into being new associations that construct rather than fix or destruct/denounce our *world multiple* (cosmos). Such a proposal is a risky one, as Stengers stresses (2008). It displays a "risk-constructivism" (cf. Latour 1997), which not only questions the "normality" of matters of facts, but also means that others (e.g., non-scientific voices) may gain the power to change the conventions of (social) sciences. Through social research, then, the position of the social scientist is put at risk as well. Consequently, social scientists are part of the changes of the social and not just distant observers of empirical matters of facts. Social research can play a critical role in our societies by giving actors a voice that had no particular say beforehand. This suggests giving agency to the formerly mute, silent, passive, unheard and non-social. Social sciences may gain critical impetus by imagining a more experiential and speculative self-understanding that introduces non-common, inconvenient, ambivalent, nonsensical, and non-expected actors and related action.

Following "dissident" actions and actors – humans and non-humans alike – enacts the critical agency of (social) sciences. It may not only bring us closer to the very power relations that fabricate the distinctions which create normality, it may also help to imagine the social world differently. Thus, it is the open variety of cosmopolitan figures which disrupt, question and alter the normalcy of social orderings. It is up to critical social sciences to unfold the multiplicity of actors and related forms of agency. Fortunately, social sciences have already learned much from the feminist imaginary, the postcolonial experience, the migrant, the fugitive, the global stranger and cultural other, the disabled and the ill, in order to enlarge and transgress the common modes of rethinking and politicizing collective action and its related actors. Following the history of sciences, other *agents non grata* play a crucial role in re-imagining cosmopolitics: the non-human. It provides new possibilities of "object"-related social research agendas that may resist the presence of an all too modernist understanding of agency delimited to human subjects only.



## Notes

1 See e.g., Biagioli (1999), Hackett *et al.* (2007), Latour (1988b, 2005), Law (1991, 2002), Law and Hassard (1999).
2 Kant's example is that of the invention of the triangle by Thales.
3 Strathern exemplifies this point in her seminal discussion on English kinship (Strathern 1992).
4 Like, for instance, Louis Pasteur invented the microbes (cf. Latour 1988b).
5 On the crucial difference between "intermediaries" (transporters) and "mediators" (transformers), see Latour (2005). An intermediary "transports meaning or force without transformation", whereas mediators "transform, translate, distort, and modify the meaning or the elements they are supposed to carry" (Latour 2005: 39). See also Schillmeier (2010) and Schubert (Chapter 7, this volume).
6 To be sure, scientists also try to black box the trace of the event which – in the case of Galileo – meant to argue that the experiment functions only to illustrate the "truth of facts", a "rational truth" (Stengers 1997, 2000).

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