

Communication with aliens, as an opening of the horizon of a scientific Humanity. A philosopher's reflections

J.-L. Petit^{1,2}

¹Faculté de Philosophie, Université de Strasbourg, 7, rue de l'Université, 67000 Strasbourg, France

²Laboratoire de Physiologie de la Perception et de l'Action, Collège de France, 11, Place Marcelin Berthelot, 75005 Paris, France

e-mail: jean-luc.petit@college-de-france.fr

Abstract: In this article, we reflect on the motives underlying the search for extraterrestrial intelligent life (SETI) with a view to show that far from turning away from humanity it is profoundly rooted in human aspirations. We suggest that those motives derive their driving force from the fact that they combine two powerful aspirations of humanity. On the one hand, there is the transcendental motive that drives history of science, the human enterprise that claims to escape any communitarian closure of horizon and brings our humanity to transcend itself toward the other, which was formerly referred to under the title Universal Reason. On the other hand, there is the anthropological motive by virtue of which the human being tends to project on the other and even in inanimate nature a double of himself. The mixture of both motives is deemed responsible for a remarkable bias in the current understanding of the SETI programme. Despite the fact that such a programme might well be aimed at any biological formation which could be arbitrarily different from all known forms, it is focused instead on a very special kind of being: beings that possess both the natural property of the type of mentality we identify with: intelligence, and the ideal one of being possible co-subjects for a Science of Nature.

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Mixed motives for a scientific programme

One may have legitimate grounds for puzzlement about SETI. SETI is the acronym of a research programme to detect optical or radio signals as a communication with intelligent beings inhabiting the planets of stars other than our Sun. That research has been unsuccessful to date despite the progress already made in two areas. On the one hand, progress has been made in the astronomical identification of exoplanets located in the habitable zone of their stars. The observatory satellite Kepler dedicated to the hunt for exoplanets has allowed identification of over a thousand candidates for the status of telluric exoplanets awaiting confirmation from telescopic observation on Earth. On the other hand, progress has been made in the detection of trace physicochemical components of life in space (biosignatures). The analysis of the light spectrum of exoplanets orbiting their star (so far only uninhabitable planets more like a hot gaseous Jupiter than like Earth) has made possible the determination of the chemical composition of the atmosphere of a few of those exoplanets, revealing the presence of several necessary ingredients of life: water vapour and methane on the planet HD 189733 b (Swain *et al.* 2008), water vapour, methane and carbon dioxide on the planet HD 209458 b (Swain *et al.* 2009), carbon monoxide and dioxide on the planet HR 8799 b (Bowler *et al.* 2010). If the purpose of SETI is to find extraterrestrial intelligent beings, one must

admit that those results are far from the goal. The preliminary steps they represent leave the remaining steps to that goal depressingly underdetermined. Nevertheless, it still remains the ultimate goal of that enterprise which serves to designate it. Why? The search for a life form in space may well not be a search for the particular form that is the outcome of the evolutionary history of our species in the Earth environment. Such a life form is characterized by a brain with a disproportionate neocortex basis for a faculty: intelligence, whose improvement led to the knowledge and mastery of Nature, culminating in the use of electromagnetic signals for communication. A straightforward answer is that researchers would be happy to deal with forms of life very different from our own if only they had the technical means. But, lacking the necessary means, researchers have no alternative but to rely on the eventuality that aliens have developed on their part an intention to make their existence known. And that they implemented that intention by broadcasting signals sufficiently different from those of inert Nature to reveal the intelligence of the issuers. According to the neutrality of science dear to positivism, the apparent anthropomorphic bias of the search for extraterrestrial life would be entirely due to technical constraints and thus free from prejudice. Everything would be fine if we could separate in any circumstance science and prejudice. Unfortunately, at the moment, it is difficult to distinguish our bias in favour of science and technology from

the dubiously legitimate determination to endow the unknown object with an eminently human property – intelligence.

About what motivates SETI, I have some insights to be submitted to the reflection of the reader. What fascinates scientists in exobiology, it seems to me, is the possibility that there are other worlds where life might have led to the form that we hold ourselves to be ideal: namely the form of the subject of knowledge of Nature. Closing down on the history of *ἐπιστήμη* the distinguished representatives of scientific mankind that are the astrobiologists look for their counterparts in very remote areas of the universe. Thus comes to expression an epistemological requirement: stabilization of the stream of appearances, unity and continuity of Nature, and objectivity of knowledge all require confronting our particular view as human observers with the standpoint of knowing subjects other than ourselves. Result of work of a first laboratory must always be capable of being replicated and validated by a second laboratory. By extrapolation the image of the world admitted by scientific mankind as a whole should in principle be capable of being replicated and confirmed by a scientific community other than the earthly. Up to that point, there is no inconsistency: the horizon of our science is infinitely open. It is not enough to say that it includes all mankind. It not only includes our mankind but also includes any other forms of mankind, whether real or possible. However, there is reason to suspect that such noble motivation is not unmixed. Even though we tend to project that ideal which leads us to another being than the one we are ourselves, the constraints of our biological organization make it be that the other we project ahead of us in deep space is inevitably a duplicate of ourselves. The confusion of these two motivations causes the search for aliens to be paradoxically oriented towards what we are ourselves.

The idea is that the search for evidence of existence of other forms of intelligent life in space may be burdened with a transcendental illusion: the illusion due to confusion between the transcendental requirement of scientific rationality and a mere question of fact. The factual issue is whether there is actually somewhere in the universe other intelligent beings. The transcendental requirement is that the human community constituting the subject that supports responsibility for objective science should not be confined in any particular cultural or historical boundary. The horizon of understanding of such a community should in principle be capable of being extended uninterruptedly to the horizons of any actual or potential communities. Up to this point, the reference to aliens fulfils a function comparable to the reference of classical philosophers to the point of view of Sirius: a transparent substitute for Universal Reason. Kant in his *Critique of Pure Reason* (1781/1787) laid the foundation for the objectivity of knowledge in Reason, the source of principles for determining *a priori* knowledge. The unparalleled character of that Reason: nomological necessity and unconditioned condition of possibility was supposed to evade any psychological characterization. Hopefully, in his later *Critique of Judgment* (1790) Kant was opening a more promising track. In matter of tastes, he noted, everyone sticks to his personal feelings, but nonetheless

claims the approval of all, a claim where one recognizes man's rationality. And how did Kant justify that claim coming from an empirical faculty of the human mind such as taste? In the absence of any rational principle, he suggested, open-mindedness is our sole recourse: 'this is what shows a man of open mind [*von erweiterter Denkungsart*] to be able to rise above the subjective conditions of judgment, in which so many others cling, and to reflect on his own judgment from a universal point of view (one he cannot determine other than by placing himself at the point of view of others) (§. 40).'

With the downfall of classical abstract universalism, the possibility of objective knowledge could no longer be considered as fixed *a priori* in the formal structure of a transcendental subject. However, physics did not for all that stop pretending to determine its objects *a priori* by conceptualization, demonstration and computation. How do we understand that the subjective activity of human cognition could reach mind independent objects? The knowing subject was brought back to the concrete conditions of an embodied consciousness, itself located in a world. But that body is a living body and not an object of science. That world is a world inhabited, not the natural or physical universe. Meeting that challenge in later texts, Husserl developed a new transcendental epistemology of the relationship of man with the world along the following lines. Conquering objectivity requires a double genesis: a genesis of an epistemic subject who was neither the isolated individual nor society at large and the parallel genesis of an objective world, not to be confounded with any of the known community worlds. The only way out is to assume that the knowing subject is basically animated by an intentional orientation towards the world in a horizon of expectation which includes the possibility of broadening the horizon of the individual up to horizons of the most diverse communities. In that process all the standard referents lose their fixity and are caught in a constant dynamic correlation throughout successive stages of extension of horizons. Instead of the subject and the object, intersubjectivity is being set up by 'communication' understood as the sharing of their respective worlds by different communities. From that follows both the relativity of humanity in relation to communication and its openness to alien humanities. Here, we are back to the SETI programme!

I do not claim that a healthy transcendental reflection on the cognitive conditions of scientific objectivity (or the epistemic intersubjectivity that underlies that objectivity) must necessarily withdraw any rational foundation from research in exobiology. Indeed, whatever the conditions in which we hope to reach objective truth; it may happen that other intelligent beings exist outside Earth, as it may also happen that such beings do not exist. Are both issues still unconnected? Probably not, but their relatedness is straddling two planes that it is important not to confound. If a requirement of infinite openness rooted in the essence of scientific inquiry motivates humans to project their counterparts in extraterrestrial space, this is an anticipation of the same order as that which guides the search for an unknown object based on the projection of hypotheses or the building of abstract models, beyond the level

of immediate observation data. Anthropomorphic speculation on the mental life of aliens is of a different nature. What we understand with the word intelligent is definitely retro-referent to who we are. So, even if we eventually discovered such beings, calling them intelligent in advance would be making again the mistake of confusing the two levels. Maybe that error is not fatal, but to think about it cannot hurt either!

Intelligence is our pride and prejudice

It is significant that the question whether there are or not other beings capable of communicating with us outside Earth has been formulated in terms of intelligence: Are there other intelligent beings? Are there other forms of intelligence? Under what conditions would we attribute intelligence to other life forms? etc. Before we ask about evidence for intelligence, before defining criteria of intelligence, nay before imagining intelligence tests, a prerequisite seems to be necessary. This prerequisite would be to consider more carefully what led us to decide that intelligence is the good property. And, if we could go back to such a decision, it would be reasonable to examine what justified it. Do we, for example, hold intelligence in such high esteem that we take other qualities to be unimportant (at least for communication purposes), or that they come down to that one, or that they derive from it, or even that they only have a disruptive influence on the functioning of intelligence? Difficult to justify the privilege granted to intelligence with such reasons! At least as important for the possibility of communication is feeling, desire and affect. Except by reducing communication to what communication engineers mean: the transport of an arbitrary physical quantity called information. However, the state of mind in which you are willing to enter into communication with someone rather than the opposite is also a prerequisite for the establishment of a satisfactory communication.

Why, after all, did exobiological research not set itself the goal of discovering other forms of affection? No doubt because the investigation addressing such a programme might have led astray researchers towards an assessment of the anomalies, deviations and perversions inherent in earthly varieties of a normal emotion, whose inexhaustible diversity might have wasted all their credit! It is, moreover, an interesting topic to think about: that intelligence tears us away from our earthly condition, while focusing attention on any other property of mind tends to bury us in that same condition. However, such idealization of intelligence reflects the legacy of a tradition hotly debated in recent times on the basis of neurophysiology and psychopathology, whose data show the influence of emotions on the formation of decisions, which tended to be routinely considered rational (Damasio 1994). Far from us the rather scurrilous idea of redirecting the search for intelligence in space towards a search for heart, sympathy or philanthropy! For the motivation to search in space for an interlocutor takes root in the very same instinctual trend that gets us closer to one another, our other on this Earth, of course.

One advantage intellect has on affect that must be granted is its relevance to the scientist's founding project: the

objectification of Nature. Intelligence is generally considered an objective property that can be measured. As regards emotion, one might well allege that psychologists have attempted to quantify it, if not reduce it to variations in a continuum (e.g. by showing to subjects computer images intermediate between views of faces miming anxiety and panic or sadness and anger: Blair *et al.* 1999). However, emotions and feelings usually retain a relational character, such that one cannot treat them as properties of independent objects. When one is in love, one's mental state necessarily embraces another person – which is not reducible to another brain and even less reducible to a representation of the other in one's mind-brain. On the contrary, being intelligent is a property that one has or has not, or one has on some level, on a defined scale. Intelligence has emerged as the property that sums up the mind because the objectivity of intelligence accomplishes the process of objectification of mind undertaken by cognitive science. When I told Jean Schneider, who invited me to speak in the Drake workshop, that with respect to aliens, at least, we would not have to submit them to tests of I.Q., his response was: in saying that I advanced a lot! Intelligence, 'what our tests measure', is thus the paradigm of the mind that our age is proud to have objectified just after physical Nature.

Updating our phenomenology-and-physiology of the other

To naive realism (or even scientific realism), the world is supposed to be completely pre-constituted with all physical systems such as furniture, machines, human bodies, non-human or possibly aliens, which are there for a subject – located nowhere in particular – to observe, explain and predict their behaviour. Such an approach, we believe, led cognitive science in an impasse from which some researchers try to remove it in order to make possible a new science of consciousness. We suggest that such a method is not good even for the search for extraterrestrial beings capable of communicating with us. Of course, knowing that will not be enough to redirect the quest. However, if a paradigm shift is, in the words of Kant, an orientation in thought, the effort to apprehend the purpose of SETI research otherwise than by placing it under the 'intelligence' category involves an attempt to interpret that research in a new sense, if not steer it in a new direction. Although still dominant, and perhaps more in cognitive science than elsewhere, the classical paradigm: a Turing-machine mind in Descartes' animal-machine body in a Newtonian astronomical-clock universe is now under converging attacks (Bailly & Longo 2006; Petitot 2011). Among other things, the recent confirmation by neurophysiology of the role of action, anticipation, and in general the internal activity in perception and cognition (Berthoz & Petit 2008) seems to be reviving Husserl's criticism of physicalism and mentalism in psychology.

The physical body, a mere element of the furniture of the physical universe, is not a good starting point for a science of perception and cognition as the activities of a living subject. That is because physical body and physical universe are highly

processed products which require the intervention of operations of reduction, construction and mathematical idealization, operations that have been implemented as part of a programme aimed at a theoretical determination and technological mastery of nature: modern science. Such operations could only have taken place in the aftermath, and on the basis, of much more primitive interactions between a living subject and its environment or *Umwelt*. The physical body, as conceived by common sense, as being there in a physical space outside the perceiving subject, and as the permanent and unchanging support of all its physical properties, is not the perceived object of experience. In the best of cases, it is an idealization of that perceived object, although it is an idealization that has become so habitual that common sense is unaware of it. Reduced to the plane of experience, the perceived object is what takes shape gradually through a coherent series of lateral aspects that the attentional arrow unifies by passing through. The arrow is itself guided by the interest in the object as a goal of possible action. It implies the existence in the brain of a continual reshaping of the body. It also implies topographic maps of the surrounding space, which are localized in cortical areas dedicated to various sensory modalities: visual, auditory and tactile. The existence of such modulatory influences from the centre to the periphery of the brain, not only by the effect of attention but also by the effect of intention, has been demonstrated recently in neuroscience.

Putting back the thing of perception in relation to the subject interacting with it makes it possible to understand that such a thing could be the bearer of 'affordances' (i.e. practical resources), so as to meet the subject's perceptual expectations or answer his intentions in action (Gibson 1979). The neural activity in brain functional architecture as the basis of those expectations and intentions is becoming better known in its continuously changing configurations. Accordingly, the thing is the correlate of acts of perception and action of a living subject, which sets in motion his sensory and motor organs in dealing with it. However, we must not forget that this subject not only moves his limbs but also feels, from the inside, those movements and intentions of movement through kinaesthetic sensations. So that, to some extent, for the subject the thing owes its very constitution to his kinaesthetic sensations. 'My body is haunting the world' Merleau-Ponty wrote to express this feature of perceptual experience, the foreshadowing of our expectations projecting onto the non-ego the ghost of the body, as modulated by our body schema. He echoed Husserl: 'It is a law of the possibility of a world that the world, and first of all the nature, is essentially related to human organization.' (Husserl 2008, Text 57, 53, 54, Ap. 50).

The internal limitation of perception to the own body of the perceiver is manifest as soon as the perceived body moves in the environment. As early as the kinematic level and even in absence of morphological information, the movement of the human body means more to the perceiver, than the skeleton and muscles machinery Etienne-Jules Marey was interested in. Movement is generally perceived as movement of a living body animated by human intentions (Heider & Simmel 1944; Michotte 1963). In an attempt to objectify this dimension of

experience, Gunnar Johansson developed a method of representing organic movement with luminous markers on the body of an actor. A static point image appears meaningless, but the video animation irresistibly suggests to the viewer a human agent engaged in a readily identifiable action: walking, running, dancing, jumping, standing, sitting, etc. (Johansson 1973). This direct perceptual recognition of actions encompasses perceiving the sex and identity of the agent, his/her emotional state, the effort he/she deployed and other not purely motor dimensions of action.

The neural correlates of motion perception are the subject of numerous studies. Functional magnetic resonance imaging in humans revealed selective activation of posterior superior temporal sulcus induced by the vision of animation of actors in light points, while the visual area of perceived motion does not distinguish that animation from a disordered mixture of points (Grossman *et al.* 2000). Not only do we perceive the movement of members of the agent, but we also perceive the action as such, including the agent's goal (Fogassi *et al.* 2005). Our brain probably houses face recognition neurons in the fusiform gyrus and the superior temporal sulcus (recorded in monkeys by Perret *et al.* 1982). As for the perceived emotions in facial expressions and bodily postures, we participate therein by directly accessing the emotional values in visual stimuli (Carr *et al.* 2003; de Gelder *et al.* 2004). Finally, much of the lexicon of action verbs derives its meaning from the distribution of representations of body parts involved in the functional maps of the brain (Pulvermüller 2005). As a proof of the founding of human language in bodily actions, fMRI activation foci (evoked by verbs of actions performed with the leg, the arm or the face) overlap foci of activations evoked by movements of the feet, fingers and tongue, respectively (Hauk *et al.* 2004). If we are not locked into our language as the prisoner behind the bars of a prison (despite what Wittgenstein may have meant), this mass of data suggests that the horizon of what we can perceive and say is *a priori* limited – if not blocked – by the bodily experience of the acting man.

And yet, based on the fact that the human body is a body among others, a tendency in the context of science is to neglect our actual experience and rebuild it by injecting an acquired knowledge giving us a false sense of dominating the situation from an overhanging position. One clings to what our schoolmasters relayed by experts in all disciplines taught us about the process of hypotheses constructed and tested in use by scientists. And we are told the following story: we arrive at the recognition of others as a result of an inferential reasoning leading from the detached observation of the behaviour of any physical body to the judgment attributing intelligence to the body, i.e. an invisible property on top of its visible properties.

Actually, nothing is further from the truth. How is it possible that another person comes into existence for the ego in the interactions between a living subject and its *Umwelt*? It depends on an experience of a special type that draws on another specific capacity of the living, that of 'getting to the place of others'. Indeed, someone else is different from a simple external thing to which you can go, around which you can turn or that you can handle at your leisure. He differs in this, that by

going in his place, not only we can see the world from his perspective (and take the opportunity to correct our errors of perspective), but we can understand the actions he does; we can suffer by sympathizing with what it is like for him to be a living subject ‘that reigns in his body’. Not to mention the inevitable vicissitudes of the so precarious sovereignty of the voluntary agent on his own body (*Leib*, not *Körper*), which barely reflects the normal adult experience and not the experience of infancy, aging, sickness, sensory, motor disability, or even madness. Being the subject of a bodily experience is more than just being an eye doubled with an intellect: what more there is has surely much to do with such fundamentally participatory, not objectifying, dispositions as sympathy, compassion, love, etc.

Neurophysiology discovered the brain ‘resonant systems’ that are repertoires of complex sensorimotor stimuli paired to learned actions. These systems presumably underlie the phenomenology of others, not as mental representation inferred in the ego’s mind, but as co-subject participating in the constitution of the same world as the ego (Rizzolatti *et al.* 1999). What relationship does the physical universe maintain with the *Umwelt*, the world that the living subjects are experiencing? Necessarily, it cannot be but a very indirect relationship. The world of a living subject is the world of daily activities in his community, the *Lebenswelt*. And these activities take place in a partially closed horizon. Insofar as this horizon is not definitely closed (as it is in some countries or it was in some epochs), methods of idealization, mutual control and objectification in use in scientific communities might open it up on new horizons – the horizons for understanding the daily activities of other living subjects, other communities, other humanities perhaps. It is only in the perspective of all these nested horizons that the physical universe encompassing them all will loom up.

A mixture of distance and empathy

According to the latest news, inflationary pressure has increased on scientific language: not content to call Nature a universe reduced to physical objects or events, and intelligence, a certain threshold of improbability of recurrence of these events, a single signal is straight away seen as a message and the detection of this signal, takes the place of communication. If anyone is free to use the words as he pleases that will have no effect except within certain limits of understanding. However, the speaker or the reader is even less sure of being able to understand the message because this use of words differs from their customary context. Usually, communication is an active bilateral interaction of two (or more) persons who intend to communicate and who, even without a special message to be transmitted (on the model of Shannon and Weaver), at least situate their respective experiences in the horizon of the same world so they will not be incommensurable.

Nothing like that in the so-called ‘communication with extraterrestrial intelligences’ where, on the face of it, the question is simply to detect a signal with certain statistical characteristics arbitrarily specified. And for sure, one might think it legitimate to align communication with ET on the

current pattern of scientific inquiry. No complaint, indeed, as long as we do not forget the limitations of such an endeavour. However, the shift in meaning is tempting, one that forces one to occupy surreptitiously the point of view of extraterrestrials and from that point of view assume that aliens are willing, as we are, to get their message across. From there, everyone has his clever suggestion on how best to proceed: for example, Christopher Rose, an engineer from Rutgers University, New Jersey, proposed in *Nature* to use an organic material as a mailing envelope and an asteroid as a postman (Rose & Wright 2004). Thus, officially, the physical conception replaced the world of perception and action with the idea of a Nature all the more predictable that it would not be disturbed in its course by the untimely intervention of subjectivity. But in the SETI context it appears that the standard objectifying approach camouflages a relationship that remains implicitly and unknowingly prefigured as communication with humans.

Let us only quote Seth Shostak, an astrobiologist from SETI Institute in a recent *Science* chatroom about SETI: ‘Well, you’re so right! Hollywood aliens always look like ... US!!! But of course they have to, for otherwise you couldn’t understand their motives.’ Except that: ‘Well, from the SETI point of view, we consider them intelligent if they can build radio transmitters or lasers. That’s all we require. Their poetry can be lousy’ (Bhattacharjee & Shostak 2012). What do these informal comments reveal, if not that without asking any question about the existence of sufficient similarity one takes the perspective of aliens, imagining their intention to communicate, their effort to do so, their choice of means, even their preference for a brief message of alert (‘We exist!’) or for sending a larger archive file. See again in *Nature*: ‘A fundamental problem in searching for extraterrestrial intelligence is to guess the communications set-up of the extraterrestrials who might be trying to contact us. In which direction should we look for their transmitter? At which frequencies? How might the message be coded? How often is it broadcast? (For that discussion I am assuming that the signals are intentional, setting aside the *a priori* equally likely possibility that the first signal found could be merely leakage arising from their normal activities.), etc.’ (Rose & Wright 2004). Should we see into the concern of astronomers and engineers about the possibility of the existence of extraterrestrial intelligences (or life) an obscure presentiment, even within the dominant conception of the natural world, of what phenomenology said: despite its so perfect objectivity, the natural world is nonetheless the product of a subjective act?

Bridging the gap from terrestrial ground to other worlds

Let us come back to the necessary steps to take to make sense with the inaccessible when one is a living being that interacts within the *Lebenswelt* with things which arouse some interest or refer to a possible use. In his lectures at Collège de France on Nature, Merleau-Ponty re-read with profit the D17 Husserl’s manuscripts known under the title ‘Earth the originary Ark does not move’ (Farber 1940; Merleau-Ponty 1994); here is our *Guide Vert* – the route is detailed in our *Guide Bleu*: the

700 pages of Volume III of Husserl's posthumous texts on intersubjectivity edited by Iso Kern in *Husserliana* XV (Husserl 1973). With luck, we will find along the way no aliens, of course, but at least the circumstance that have led scientific investigation to come to focus on asking the possibility of their existence. Besides the fact that it is part of a research programme among others, is this theme, as an orientation of scientific interest, not already involved at some basic level in our usual understanding of the world and of us? Here arises the need for a reflective analysis of the meaning of everyday experience as the breeding ground for scientific inquiry.

This inquiry is an endless task unfolding in the horizon of the infinite world of Nature that we take for the ultimate truth about our world. How could such a perspective open up for a humanity whose world of experience was always limited to the daily horizon of some community, a world that Heidegger described as circumscribed by the closure of 'being at home' [*Heimwelt*]? Certainly, science refuses to be a local system of beliefs, which, even if that location extended across the Earth, would transform science into a myth. The epistemic subject, the transcendental bearer of science, should not be a closed community, as they are all without exception. It should be rather a community that is essentially open on its exterior. How is this opening possible, not as the pure formal requisite of the possibility of knowledge in Kant's sense, but as a concrete possibility of thinking based on our experience?

The inaugural act done by Galileo when he declared that the Earth '*se muove*' like any other body in absolute space has been both revealing and covering: he hid for a long time the ground on which and in reference to which any body must appear to someone in order to be 'in motion' or 'at rest'. Meeting the requirements of computing that require relativizing both terms of the relationship body-ground, Galileo rushed into oblivion the experience of our own body. The body, which is itself a ground relative to the movements and rest of its organs, is based on the Earth as the absolute ground for our activities: whether it moves or not, the Earth itself 'does not move'. It is to this body-ground dialectic, as rooted in our own body that we must return to reveal the constitution of infinite space (Husserl 1976).

Some experiences (or thought experiments) are useful to think about in this context. The flight of a bird involves kinaesthetic sensations that are not part of our repertoire but that I understand as an extension of my own sensations: the sky for a bird in flight is like Earth to the walking man. Air travel fosters a remarkable permutation between the body and the ground: the plane, a body in motion relative to Earth of which it is a temporarily detached fragment, is perceived as ground for my travel during the flight, a ground on the same level, so to speak, as Earth. Interplanetary travel, making the round trip from Earth to another 'Earth' (space station or planet), each Earth becomes alternately body and ground in relation to the other. Thus, from the Moon the man could see for the first time the spherical Earth. But the possibility of that alternation depends on whether our earthly humankind has extended its field of possible accessibility to the Moon, a Moon human

action has merged with the Earth as an extension of the terrestrial ground: 'What separates us from the Moon or Venus, Husserl says, is assimilated ultimately to the ocean or to the insurmountable mountains separating previous Humanities (Husserl 1973, XXVI, 440)'.

Understanding the SETI programme in that line still requires one more step: that the ground of Earth will form with all habitable telluric exoplanets in the Universe the same ground continuously extended for humankind to take a firm stand on it, while that humankind itself will be extended to the whole of all beings, whether communicating effectively or likely to come into communication in the future. That such extension of a common ground is an absolute necessity might be better understood by thinking about the essence of that communication. If we mean simply sending and receiving signals, then we can give up the progressive enlargement of Earth's horizon as vain anthropomorphic metaphysics. In the world, which is an explosive multiplicity, a chaos of irradiations, the habitable worlds will be so many closed boxes that can be assumed to be occupied or not, but that one would have no reason to suppose commensurable with each other. Such incommensurability will not be the case if the communication is meaningful only as building a community of understanding. Such a community of understanding requires that the distant worlds might possibly be equated with the world of our experience through empathic projection. Without empathy, my power to be with someone else, it is impossible to produce in me the possibility (in thought) of the world and worldly things of the other as they are for him thanks to the play of his sensory and motor organs. Despite the culturalist pluralism fashion, to understand is necessarily to understand the same things in the same sense, which is possible only if such things can be located in the context of the same common world. As long as one understands in one sense what the other has understood in another sense, there is no guarantee that both mean the same thing. The fusion of the respective horizons of understanding was all what we tried to – what we were constrained to – describe as extension of terrestrial ground. Alternatively, it can also be interpreted as the progressive and never-ending construction of a unitary concept of humankind, whose members include all those who come into communication with us. Without surrender to sceptical relativism, the epistemic subject of the human endeavour that science is can be identified with humanity itself. Husserl said nothing else:

'Moreover, the common world contains the potential existence of generations of humanoids that could not possibly belong to the chain of our earthly generations. Our *Umwelt*, the one we are bound to by history and generation, the one that is progressively accessible to us and gradually becomes more and more accessible, comprises the horizon of a nature that transcends any nature actually accessible belonging to that circle, an astronomical Nature which is still inaccessible, but to which nevertheless subjects could belong who have experience of a world within their generational relations. Such subjects could possibly come into community with us (and possibly also bind with us by generation) if one day in a future actuality, the

inaccessibility of such stellar Nature was surmounted and transformed into a nearby accessible Nature. But, again, behind the stars once they turned accessible would yet loom an even more remote and inaccessible world with unknown subjects in it' (Husserl 1973, XII, 219).

'Communities and community *Umwelten* are particularized to a European humankind, or a earthly humankind, which does not yet fulfil the idea of Humanity in the most universal sense, insofar as operates here an essential concept of Man that leaves open the question of whether outside Earth are not living men as co-holders of our world. Such men as, when they would come into relationship of understanding with us, would be called and empowered to co-constitute the world (...). And, finally, should it appear to us that 'men' live, for example on Mars, and we find a way to enter with them into a community of understanding, from that very moment they would account for the 'we' humans which is correlative to the world as 'our' world, common to all' (Husserl 1973, Text 11, 163).

'There is no purely objective Nature that could be thinkable without psychophysical beings in it' (Text 1, 19). 'No experience of things without an own body, which is the first foundation of the proposition that a world of pure Nature, a world without animal existence is unthinkable' (XVIII, 300). 'And obviously, when the existence of the world is transcendently clarified, it appears that Nature is also unthinkable for itself as an absolute being. It is only conceivable qua Nature as a human *Umwelt* and as what is transcendently constituted by the transcendental intersubjectivity of 'I, next to the other' – a fact that there would be no sense to try overcoming' (XXII, 371).

Conclusion

The little known texts by Husserl that I have just quoted actually have guided from the start my reflection. My guess is that they might contain a remedy to the current surreptitious overlap of an expressed objectivism and a persistent anthropomorphism, thus providing a welcome solution to the tension at which I tried to make the reader aware about SETI. That solution lies in a satisfactory synthesis of the two motivational springs of the search for aliens: the epistemic one of securing the conditions of possibility of objective knowledge, and the anthropologic one of coping with the relativity of our perception and cognition to our bodily and communitarian situation. Putting it in a nutshell, referring to the possible existence of aliens one does no other than point the regulative ideal of the never-ending process of opening the horizon on ever new worlds. That process only allows the transition between our bounded locality as earthlings and the universality (in principle if not in fact) of a scientific understanding of Nature. In return, such regulative ideal ceases to be a mere implicit postulate of any research enterprise whatsoever to acquire the operational status of a specific research programme with its own field of investigation and its appropriate technological apparatus.

Let us add an explanatory note that might not be useless to a positivistically inclined readership. As a philosopher I have no

claim to bringing new results to the knowledge of the public: exobiology, cognitive science, phenomenology, transcendental philosophy, those institutions exist and I leave them as they are, or I hope so. On the other hand, as any writer, I pretend to say something never heard before. Specifically, here are advanced for the first time both (1) the proposal of a linkage between SETI's apparent fixation to intelligence and the ideological background of standard disembodied cognitive science, and (2) the proposal of re-contextualizing SETI in the context of a phenomenology of embodiment cum embodied cognition as starting level of a transcendental foundation programme replacing Kant's static subject by Husserl's process of horizon opening en route for an extended humanity.

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