On Epistemology, Objectivity and Axiological Neutrality in Science

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Cambridge
Scholars
Publishing

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This book first published 2024

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-5275-5839-8
ISBN (13): 978-1-5275-5839-7

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PREFACE

'Hume's Law' introduces a dichotomy between 'facts' and 'values'. Life, after all, always requires evaluation because living is, precisely, choosing. Science, on the other hand, must make epochs with respect to all axiological considerations, precisely because science aims at knowledge. What is certain is that these two different dimensions cannot be suppressed unilaterally. A civilisation without axiological moments does not exist. And, conversely, a civilisation without knowledge is not conceivable either. Is Hume therefore still right? *Yes* and *No*.

Yes, because science produces objective knowledge that allows us to consider different operational procedures by explaining their intrinsic rationality. On the other hand, science can never cross this boundary because when we choose a particular procedure, discarding another we always make a precise axiological assessment.

No, because even when we speak of evaluation, it is taken for granted that in making this choice one knows how to evaluate the different choices. Therefore, even within the very act of making a choice there is always a precise knowledge that we use, precisely, to make a given choice.

How then is it possible to recover all the intrinsic critical value of an objective knowledge of the world without renouncing a critically adequate understanding of the axiological dimension of our own life? The critical link between the axiological dimension and the cognitive one, tending to *wertfrei*, is therefore configured as much more complex and intrinsically problematic than has ever been suspected by the classical tradition of empiricist descent. Certainly, this connection appears today as worthy of an adequate overall and analytical critical and philosophical rethinking. This was certainly also the intention of various authors, at different time in the history of contemporary reflection.

In order to overcome the traditional opposition presupposed by the Humean dichotomy, it is necessary to abandon the traditional ontological-metaphysical essences (of Platonic derivation) in order to recover a more plastic relationship with the intrinsic complexity of reality. From this dynamic, interactive and implicitly transductive perspective Dewey is, therefore, able to outline a coherent overall conception of a human being, who no longer qualifies as a sort of 'little god', but who instead fully recognises that humanity belongs to nature as a centre of energy that is

always interconnected with multiple other centres of interaction and energy. But in addition to Dewey, even a thinker like Edmund Husserl critically attacked the traditional empiricist (pre-)judgement on the basis of which facts and values do not present any binding relationship, as they are set within an absolute dichotomy, devoid of mediations and, therefore, completely unrelated. On the contrary, Husserl believed that theoretical disciplines themselves constitute the authentic 'foundation' of normative disciplines. In other words, for Husserl every axiological judgment is always rooted in precise, historically determined and configured cognitive assets. But what does it mean then that a doctor may not be a good clinician? In short: 'An A should be B' and 'An A that is not B' can only be 'a bad A', precisely because, more generally, 'only an A which is a B is a good A'. This is the general inferential scheme that is used in axiology, which then explains the overall equivalence of the following sentences: 'an A that is B is in general a bad A', 'an A should not be B'; or, again, 'only an A that is not B is a good A'.

Along this hermeneutic horizon, the lesson of Husserl's phenomenology can then only be linked to the concept of the *transcendental* elaborated by Kant, modifying our overall image of knowledge itself. A knowledge that can no longer be justified empirically precisely because it takes on a *normative dimension* with respect to which the experimental dimension always plays a decisive function. But it is a faction that does not found a theory, precisely because it is placed instead in the final phase, namely that in which a theory - in the words of Lakatos - 'exposes its neck to the axe of experience'. Which finally allows a new image of the objectivity of scientific knowledge to be delineated. Not only that: this normativist and transcendentalist approach also allows us the influence of objective scientific knowledge on axiology (cf. Petitot [1985], [1991], [1992] and [2009]). This opens up a new perspective of philosophical meta-reflection concerning scientific knowledge, by virtue of which we are reconnected to the great tradition of critical rationalism inaugurated by Kant and subsequently reconsidered and variously renewed by all those thinkers who have grasped the plastic role played by human reason when it is configured as a function of critical integration of reality. In this book I develop precisely this new critical-rationalist perspective, insisting above all on two points. The more decisively theoretical one - to which the first part of the book is devoted - and the historical one to which the second part of the book is instead dedicated, taking into consideration some eminent moments of the modern and contemporary debate (with the figures of Galilei, Peirce, Einstein and two Italian philosophers such as Preti and Agazzi) that allow us to better grasp the intrinsic richness of

scientific knowledge, as well as its own intrinsic axiological value. In my opinion, it is precisely this innovative research programme - at once transcendentalist, phenomenological and rationalist-critical - that enables us to better understand the complexity, the limits but also all the extraordinary potential of human knowledge.

PART I

THE EPISTEMOLOGICAL PROBLEM OF THE OBJECTIVITY OF KNOWLEDGE

CHAPTER 1

ON THE *WERTFREIHEIT* OF SCIENCE: EPISTEMOLOGY, AXIOLOGY AND SCIENTIFIC KNOWLEDGE

> Knowledge, like the growth of a plant and the movement of the earth, is a mode of interaction; but it is a mode which renders other modes luminous, important, valuable, capable of direction, causes being translated into means and effects into consequences.
>
> John Dewey, *Experience and Nature*

1. Facts and values: the crisis of "Hume's law"?

The following passage by Hume, taken from *A Treatise of Human Nature* is celebrated:

> "In every system of morality, which I have hitherto met with, I have always remark'd, that the author proceeds for some time in the ordinary way of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when of a sudden I am surpriz'd to find, that instead of the usual copulations of propositions, *is*, and *is not*, I meet with no proposition that is not connected with an *ought*, or an *ought not*. This change is imperceptible; but is, however, of the last consequence. For as this *ought*, or *ought not*, expresses some new relation or affirmation, 'tis necessary that it shou'd be observ'd and explain'd; and at the same time that a reason should be given, for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it. But as authors do not commonly use this precaution, I shall presume to recommend it to the readers; and am persuaded, that this small attention wou'd subvert all the vulgar systems of morality, and let us see, that the distinction of vice and virtue is not founded merely on the relations of objects, nor is perceiv'd by reason."[1]

[1] David Hume (1896), p. 319, italics in the text; the passage is found in the final part of the first section of the first part of the third book.

In this way Hume introduces what is called "Hume's law", which affirms the existence of a clear and drastic distinction between facts and evaluations, between reason and morality, therefore between the dimension of scientific knowledge and the development of human passions and actions. In short, we could say more briefly, between the world of objective scientific knowledge and the world of values. Which allows us to immediately identify, *à la* Hume indeed, the traditional 'moralistic fallacy' according to which what *'is'* is systematically transformed, surreptitiously, into a *'ought to be'*. Hume's empirical point of view thus allows us to critically denounce a widespread model of metaphysical argument which, in general, unduly contaminates the axiological point of view with the ontological one in order to make a *de facto* situation look like *a de jure* one: ''p' *must be* true because p is good' or, and conversely, 'p' *must be* false, because p is bad'. This refers, at least within the established metaphysical tradition of Western philosophy, to a peculiar (fallacious) form of 'general argument' which assumes the following argumentative model as its privileged model of inference: ''p' implies 'q', but q is bad, *therefore* 'p' *must be* false' or, and conversely, 'p' implies 'q', but q is good, *therefore* 'p' *must be* true'.

In relation to the circumscribed, but certainly eminent, Humean reflection, Mario Dal Pra observed that

> 'Hume's doctrine of the radical gap between the world of knowledge and the development of the passions is of great importance for the formulation of his ethical doctrine; in fact, on the basis of the basic ambiguity that characterises the Humean construction, and due to the non-rigorous distinction between the descriptive sphere and the critical-philosophical level, on the one hand it gives rise to a complete 'psychological' autonomy of the world of passions, on the other it expresses the principled opposition to intellectualistic-metaphysical ethics; Hume' general opposition to the metaphysical perspective was in fact determined, in the field of ethics, as an aversion to the *a priori* acceptance of 'duties' imposed on the nature of human beings in the name of the metaphysical and religious tradition and of its claimed absolute validity. Hume's ethics therefore assumes a general naturalistic orientation, in the sense that it aims at detecting human values in the autonomous mixture of human passions and natural motives. Undoubtedly, through this doctrine, Hume reached a broader understanding of the values that have been revealed in the complex experience of history and led the way to passing from *a moral philosophy* to *a philosophy of morality*, which by renouncing any claim to cognitive determination in relation to the world of values, is better disposed to

> consider them as autonomous and spontaneous products of human initiative.'[2]

This, as mentioned, certainly helps us to better understand, *analytically*, the overall nature of the innovative, decidedly anti-metaphysical Humean reflection as well as its specific development. On the other hand, this precious observation, *internal* to Hume's philosophy, however, must not make us forget how this acute and innovative anti-metaphysical and also decidedly anti-spiritualist critical stance, subsequently largely influenced and fertilised the very tradition of critical empiricism of modernity (and also of the neo-positivism that itself originated in the Vienna Circle), by leading to the acceptance, often as taken for granted and acquired, of the existence of a clear and drastic distinction between *facts* and *evaluations*, between scientific knowledge and the sphere of the will and passions. In this way, at least in the context of logical empiricism of neo-positivist origin, the prohibition on drawing moral conclusions from factual premises is configured as a widespread 'common sense', especially in the analytic field, which has systematically allowed philosophers to denounce the traditional metaphysical fallacy of claiming to be able to derive what *ought to be* from what *is*. This has led many authors to denounce the parallel philosophical attempt to found ethics within the realm of knowledge, by thus configuring a clear and drastic dichotomy between facts and values.

This significant theoretical outcome is also clearly explained in the light of the effective history of Western modernity. In fact, on a concrete historical basis, the 'moralistic fallacy', as Giulio Preti understood, for example, is 'typical of every metaphysical foundation of ethics, but is specific to naturalism. In 'nature' we already locate what we want to draw from it – the model of 'nature' itself is constituted according to the ethical model that ought to follow from it'.[3] The emblematic and disruptive historical events of the seventeenth-century doctrine of natural law, especially in its innovative reading produced during the Enlightenment, which historically gave rise to the disruptive French Revolution – the authentic turning point in Western history – constitute a significant and truly emblematic 'test bench' for this complex tradition of thought which, precisely in this drastic dichotomy between facts and values, finally revealed its peculiar historical-critical guillotine by which it subverted, *ab imis fundamentis*, the traditional medieval world to implement, in *the*

[2] Dal Pra (1973), pp. 242-243.
[3] Preti (1957b), p. 184.

world of praxis, a revolutionary *civil* entrance to Western modernity (naturally with all its multiple and drastic historical-civil antinomies).

This fundamental and decisive historical context must of course never be disregarded, even when we try to critically understand the *philosophical* nature of this conceptual tradition, by identifying both its intrinsic *values* and its, equally intrinsic, *limits*. Its overall *value* is naturally rooted in the ability to culturally and civilly set free scientific knowledge from any prejudicial metaphysical cage, by releasing, in fact, all the critical potentialities connected with the objective knowledge of the world. Its *limits* on the other hand, are to be identified within the historical process of the Enlightenment – also presenting its complexities – which often and willingly ended up by unduly mythologising scientific knowledge itself, by turning particularly its immanent critical nature into a myth, and thus by transforming its inexhaustible criticality (proper and specific to scientific research, which is always open and never concluded), into a dogma and into an altogether metaphysical and absolute reality (in this reconstructive framework post-positivist *scientism* has thus represented, historically speaking, the most widespread cultural and social translation of this myth, which has in fact ended up by elaborating a mythological vision of the scientific enterprise). It is therefore necessary for us to dig into this subtle, but decisive, and at the same time, cultural, institutional, disciplinary and epistemological 'fissure', using the instruments of criticism in order identify a different perspective, capable of freeing all the immanent critical potential of the scientific and objective knowledge of the world, without, however, falling into an undue dogmatic metaphysical mythologisation of science itself and, therefore, of the immanent critical power of knowledge, which is always open and always revisable.

2. Science and life: *Wertfreiheit* and practical-sensitive activities

If science tends to be – and certainly it cannot but tend to be – *wertfrei*, on the contrary, life can never be *wertfrei*, because living means *evaluating*. In fact, living always necessarily implies, albeit in a broad sense, the ability to *evaluate*. Better still: it should be said that life always implies the capacity of *being able* to evaluate. In this regard, Preti, in *Retorica e logica*, noted that

> 'To live is to evaluate – already at the most basic biological level, an organism carries out acts of choice: and these, if we broaden the concept of 'evaluation', are already assessments. And anyway, a civilisation without

> axiological instances does not exist, nor is it conceivable. This is why science can hold the central place in a civilization, but it cannot exhaust it or resolve it totally in its own form.[4]

Therefore, the two cultures, namely the rhetorical-axiological culture and the scientific-objective culture, are so intrinsically *correlative* and are always necessarily interconnected, *with all due respect to* Hume and his famous 'law' (and also to the misleading dichotomy schematically and erroneously conceived by Snow in his famous little volume[5]). On the other hand, however, it is also true that

> 'Science operates with a decisive, methodical, επσχη of all the axiological considerations. Science does not evaluate. Even when it is normative, when it is making technology, it only points out ways to follow, possible operational procedures according to the ends-in-view: but it says nothing about the value of these ends themselves; nor, ultimately, about the value of the operating procedures themselves.'

From this perspective – admittedly dichotomous – we are therefore faced with two radically different and tendentially antithetical polarities, since science produces objective knowledge which then allows us to consider different operational procedures, even by providing us with a precise critical evaluation of their intrinsic rationality. However, science can never go beyond this specific field, because when we actually choose to follow a certain procedure, by opting out of other possible ones, in addition to scientific knowledge, an axiological evaluation comes into play, which does not pertain to knowledge as such, but to our decisions which concerns more directly *our* lives. So much so that in this context different and conflicting axiological evaluations can arise, which can also make certain operational procedures appear as 'more rational' which on the contrary turn out to be 'less rational' at the level of pure objective knowledge, because they might even involve a higher 'cost' (for example when we decide to buy a certain product and/or certain services from a specific provider that charges higher prices than others, but which is more convenient for us or that we choose because it appeals to us more or for various other reasons: personal, historical- biographical, emotional, etc.).

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[4] G. Preti (2018), p. 408, while the quotation that immediately follows in the text is taken from p. 407.

[5] See Charles P. Snow (1959). Italian edition: Charles P. Snow, *Le due culture,* translated by Adriano Carugo, *Preface* by Ludovico Geymonat, Feltrinelli, Milan, 1964 with multiple reprintings. Recently this text has been republished by Marsilio (Venice, 2005), without the historical and emblematic *Preface* by Geymonat.

Well, in all these cases the 'rationality' of the choice always implies a purely evaluative procedure which systematically goes beyond the level of the mere *Wertfreiheit* of science.

On the other hand, it could also be observed that the very possibility of evaluating always implies, as mentioned, the specific capacity of *being able* to evaluate. In this way the specific relationship between the dimension of *knowledge* and the dimension of *evaluation* cannot fail to appear much more problematic and complex than the drastic and controversial dichotomous 'guillotine' of Humean descent could suggest. Conversely on the other hand, it also seems that we cannot give up on the historical-civil *value,* specific to this empiricist dichotomous guillotine devised by Hume, which, as has also been mentioned, has historically acquired undoubted merits, precisely because, alongside the emotional and concrete historical basis of value, there is also the dimension of objective knowledge. This refers to a demonstrated and argued rational truth, thanks to which a complex patrimony of knowledge has historically been built, which has undoubtedly contributed to improving our overall conditions of life and existence.

How then is it possible to recover all the intrinsic critical value of an objective knowledge of the world without renouncing a critically adequate understanding of the axiological dimension of our own life? The critical link between the axiological dimension and the cognitive one, tendentially *wertfrei*, is therefore configured as much more complex and intrinsically problematic than has ever been suspected by the classical tradition of empiricist descent. Certainly, this connection appears today as worthy of an adequate overall and analytical critical and philosophical rethinking. This was certainly also the intention of various authors, at different time in the history of contemporary reflection. Although it would be impossible here to provide an articulated and exhaustive picture of this interesting critical reflection, nevertheless, I will focus, in particular and with some attention, on the contribution outlined by the great and original American instrumentalist John Dewey.

3. History: which tradition? Herodotus, Hume and Dewey

In *Experience and Nature* Dewey investigated the link between existence and value in detail and in an innovative way, by starting from the awareness both that values 'are what they are', and also from the observation that values are always rooted in the concrete experiences of life, in the world of praxis, thus appearing 'as unstable as the forms of

clouds'.[6] Of course, *nihil sub sole novum* (*Ecclesiastes*, 1.10), since already an eminent historian like Herodotus, in the third book of his *Histories* (III, 38, 3-4,), reports this famous episode referring to Darius:

> 'When Darius was king, he summoned the Greeks who were with him and asked them for what price they would eat their fathers' dead bodies. They answered that there was no price for which they would do it. Then Darius summoned those Indians who are called Callatiae, who eat their parents, and asked them (the Greeks being present and understanding through interpreters what was said) what would make them willing to burn their fathers at death. The Indians cried aloud, that he should not speak of so horrid an act. So firmly rooted are these beliefs; and it is, I think, rightly said in Pindar's poem that custom is lord of all.'[7]

A conclusion, however, reached by Herodotus by having anticipated, in this same passage, that 'if it were proposed to all nations to choose which seemed the best of all customs, each, after examination, would place its own first; so well is each convinced that its own are by far the best.' This is also deeply in keeping with Hume's moderate scepticism, for which, as is well known, man is essentially a *habit-forming animal* since *custom* would always be constitutive of our own experience (although in this specific theoretical context Hume then, paradoxically, misses the intrinsic dynamic value of this very constitutive role of *custom*[8]). But if the frank critical recognition of the absolutely central role played by habits certainly

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[6] See J. Dewey (1929), the quotations in the text are taken from pp. 396, 399. Italian translation: J. Dewey (1973), pp. 282-310, quotations which appear in the text are taken from p. 283 and p. 285.

[7] See Herodotus (1920-1925), pp. 398-399.

[8] In this regard, Dal Pra rightly observed that, 'Hume, therefore, anticipated Kant's Copernican revolution of the relationship between the subject and the object of knowledge, even if the activity carried out by the subject in the constitution of knowledge explicitly assumes a character not cognitive but instinctive. And the fact that there still remains a significant distance between Hume's position and that of Kant also results from the question that in the analysis of habits Hume tends to minimise the initiative of the subject. In fact, habit is a modality of the subject that almost seems to materialise itself in the pure and simple repetition of several moments of observation; it could be said, with a paradox, that the instinctive modality of the subject is the very result of the observation of the object and that for that aspect of it that more directly calls into question the initiative and the activity, it is more the initiative and activity of 'nature' and of the subject in his awareness. As is well known, Kant understood both the innovation of the Humean doctrine and its limits with great clarity; these coincide, moreover, with the insufficient analysis of the cognitive structures, already noted several times' (Dal Pra [1973], pp. 152-153)

does not eliminate the fruitful and intrinsic critical antinomicity of the Humean position (since Hume, as Dal Pra pointed out, 'is a moralist who prefers instinct to reason' but who, the more he prefers instinct, the more he develops the dimension of reason[9]), on the other hand it does not open at all to any holistic-radical relativism (*à la* Feyerabend[10]), precisely to the extent that our being *habit-forming animals* relates historically, in turn, with the articulated and complex technical-cognitive heritage developed by humanity, *step by step,* in the actual course of its history. Indeed, as Dewey rightly points out, with respect to the values rooted in existence,

> 'But a brief course in experience enforces reflection; it requires but brief time to teach that some things sweet in the having are bitter in after-taste and in what they lead to. Primitive innocence does not last. Enjoyment ceases to be a datum and becomes a problem. As a problem, it implies intelligent inquiry into the conditions and consequences of a value-object; that is, criticism. If values were as plentiful as huckleberries, and if the huckleberry-patch were always at hand, the passage of appreciation into criticism would be a senseless procedure. If one thing tired or bored us, we should have only to turn to another. But values are as unstable as the forms of clouds. The things that possess them are exposed to all the contingencies of existence, and they are indifferent to our likings and tastes.'[11]

Exactly within this precise context of *lived experiences,* then, *criticism,* namely philosophical reflection, plays its own specific and peculiar role. In this case, according to Dewey, we are in fact in the presence of that rhythm of 'flights and perchings' (*à la* James) with which criticism and critical attitude alternate the emphasis on the immediate and the mediated, on what is enjoyed and consumed and on what, on the other hand, is configured as quite instrumental, by focusing on the different phases of conscious experience. In all these cases

> 'There occurs in every instance a conflict between the immediate value-object and the ulterior value-object: the given good, and that reached and justified by reflection; the now apparent and the eventual. In knowledge, for example there are beliefs *de facto* and beliefs *de jure*. In morals, there are immediate goods, the desired, and reasonable goods, the desirable. In aesthetics, there are the goods of an undeveloped and perverted taste and

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[9] Dal Pra (1973), p. 392.

[10] See Paul K. Feyerabend (1978), it. ed. (1981), pp. 106-129.

[11] Dewey (1925), p. 398, while all the quotations that follow in the text are taken, respectively, from the following pages: pp. 402-403 (italics in the text), pp. 404-405 (italics in the text); p. 407; p. 410; p. 411; p. 412; p. 414; pp. 420-421; p. 424; p. 428; pp. 428-429; p.429; p. 430 (italics in the text); p. 434; p.435; p. 437.

> there are the goods of cultivated taste. With respect to any of these distinctions, the true, real, final, or objective good is no *more* good as an immediate existence than is the contrasting good, called false, specious, illusory, showy, meretricious, *le faux bon*. The difference in adjectives designates a difference instituted in critical judgment; the validity of the difference between good which is approved and that which is good (immediately) but is *judged bad*, depends therefore upon the value of reflection in general, and of a particular reflective operation in especial.'

For Dewey, therefore, philosophical reflection can only coincide with this complex operation, and with 'this critical function become aware of itself and its implications, pursued deliberately and systematically'. Not only that: philosophy, starting from evaluative perceptions, behaviours and also from different situations of belief, progressively expands the range of critical reflection precisely to guarantee greater freedom and security to the very acts of direct selection, of rejection or of approval. Thus, Dewey again points out, philosophy

> 'does not annihilate the difference among beliefs: it does not set up the *fact* that an object believed in is perforce found good as if it were a *reason* for belief. On the contrary: the statement is preliminary. The all-important matter is what lies back of and causes acceptance and rejection; whether or no there is method of discrimination and assessment which makes a difference in what is assented to and denied. Properties and relations that *entitle* an object to be found good in belief are extraneous to the qualities that are its immediate good; they are causal, and hence found only by search into the antecedent and the eventual. The conception that there are some objects or some properties of objects which carry their own adequate credentials upon their face is the snare and delusion of the whole historic tradition regarding knowledge, infecting alike sensational and rational schools, objective realisms and introspective idealisms.'

4. Ontological essences or transductive interactions?

Moving within this precise horizon of thought, Dewey therefore seeks to critically overcome all the traditional and multiple 'mental cramps' (*à la* Wittgenstein) specific to the different philosophical traditions (empiricist, rationalistic, realistic and idealistic), to put his eminently *critical* attitude at the centre of philosophical reflection, in order 'to make it clear that there is no such difference as this division assumes between science, morals and aesthetic appreciation'. In this way Dewey wants to underline the critical inadequacy of the traditional dichotomy between facts and values, between knowledge and morals, by aiming at recovering a much more articulated, critical and fruitful horizon of reflection. According to

Dewey, it is therefore necessary to be able to critically dismantle the difference, both metaphysical and ontological, which one imagines exists between science, morality and aesthetics, since 'in a moving world solidification is always dangerous'.

In this precise critical context, the role of philosophy consists not so much in competing with science to conquer truth, but in succeeding at 'liberating and clarifying meanings, including those scientifically authenticated'. Operating within this perspective horizon, it is therefore necessary to have the courage to place 'social reform' itself outside an excessively narrow and 'Philistine' context, since it has instead to be reconnected precisely with the 'liberation and expansion of the meanings of which experience is capable'. In short, it is necessary to know how to recapture the concept of 'the richest and fullest experience possible' and then, in this exact perspective, the specific contribution historically provided by philosophy, with its privileged work of conceptual clarification, is rooted precisely in the thorough analyses produced by criticism, in order to be able to recover the complexity and multiplicity of all the interactions that always qualify, structure and characterise human life. Just because 'man needs the earth in order to walk, the sea to swim or sail, the air to fly. Of necessity he acts within the world, and in order to be, he must in some measures adapt himself as one part of nature to other parts.' Through this progressive and always dynamic 'adaptation' it is then possible to discover the *multiplicity of interactions* that human beings build up in the course of their existence, without falling into the metaphysical trap of the ontologisation of the relations codified in the classic tradition of *ens, verum et bonum,* which constituted an absolute metaphysical object, conceived as coincident as a real and existential metaphysical entity. Again for this reason it is necessary, then, *to know how to* critically *rebuild* our own experience, without however, on the one hand, ever expecting to be godlike, and, on the other hand, without becoming disillusioned with a world which would systematically disappoint us. If anything, for Dewey

> 'a mind that has opened itself to experience and that has ripened through its discipline knows its own littleness and impotencies; it knows that its wishes and acknowledgments are not final measures of the universe whether in knowledge or in conduct, and hence are, in the end, transient. But it also knows that its juvenile assumption of power and achievement is not a dream to be wholly forgotten. It implies a unity with the universe that is to be preserved. The belief, and the effort of thought and struggle which it inspires are also the doing of the universe, and they in some way, however slight, carry the universe forward. A chastened sense of our importance, apprehension that it is not a yard-stick by which to measure

> the whole, is consistent with the belief that we and our endeavours are significant not only for themselves but in the whole.
>
> Fidelity to the nature to which we belong, as parts however weak, demands that we cherish our desires and ideals till we have converted them into intelligence, revised them in terms of the ways and means which nature makes possible. When we have used our thought to its utmost and have thrown into the moving unbalanced balance of things our puny strength, we know that though the universe slay us still we may trust, for our lot is one with whatever is good in existence. We know that such thought and effort is one condition of the coming into existence of the better. As far as we are concerned it is the only condition, for it alone is in our power. To ask more than this is childish; but to ask less is a recreance no less egotistic, involving no less a cutting of ourselves from the universe than does the expectation that it meet and satisfy our every wish. To ask in good faith as much as this from ourselves is to stir into motion every capacity of imagination, and to exact from action every skill and bravery.'

In this way Dewey delineates the median position of human beings, by which, at the very moment in which they assert that their power is limited, as beings that belong entirely to nature, of which they represent a moment and on which they always depend, nevertheless we can also affirm, with a 'chastened sense of our importance', our own *constructive* role which can even push the universe itself forward a little. Human beings must therefore know how to take part, consciously and critically, in the processes of natural reality themselves, by building, in the words of the sociologist Boaventura De Sousa Santos, a sort of articulated 'ecology of knowledges',[12] by means of which we can never forget the *infinite plurality of interactions* within which human beings can perform their actions and develop their critical reflection. Which then led Dewey to critically rethink the link between *belief* and *knowledge* by breaking the traditional empiricist rigidity of this dichotomy. Indeed, if knowledge has generally been conceived as 'pure objectivity', by attributing to it the role of controlling belief through knowledge, science and truth, Dewey, on the contrary, insisted, instead, in emphasising how this dichotomy itself, which is integral to the Western tradition of philosophy, must be critically rethought, starting from the epistemological awareness that knowledge itself constitutes, in its turn, 'a case of belief'. For this reason it is therefore necessary to decisively turn our backs on the traditional empiricist theory, totally mythological and metaphysical, according to which our knowledge would draw inspiration from 'innocent sensory data,

[12] See Boaventura De Sousa Santos (2020).

or from pure logical principles, or from both together, as original starting points and material.' Indeed according to Dewey

> 'All knowing and effort to know starts from some belief, some received and asserted meaning which is a deposit of prior experience, personal and communal. In every instance, from passing query to elaborate scientific undertaking, the art of knowing criticises a belief which has passed current as genuine coin, with a view to its revision. It terminates when freer, richer and more secure objects of belief are instituted as goods of immediate acceptance. The operation is one of doing and making in the literal sense. Starting from one good, treated as apparent and questionable, and ending in another which is tested and substantiated, the final act of knowing is acceptance and intellectual appreciation of what is significantly conclusive.'

But then, Dewey wonders: 'Is there any intrinsic difference between the relation of scientific inquiry to belief-values, of aesthetic criticism to aesthetic values, and of moral judgments to moral goods? Is there any difference in logical method?'

His answer to this question is on the whole negative, precisely because the evaluation of any belief-value always implies a *comparative* judgment, since, when we affirm that an object 'is good', this may perhaps appear as an absolute statement, especially when it is formulated in the context of action and not so much in the context of reflection. However, this affirmation about the goodness of a given reality is always the result of a comparative process which, in turn, refers to an evaluative comparison exactly because in these cases 'the issues shift to something comparative, relational, causal, intellectual and objective':

> '*Immediately* nothing is better or worse than anything else; it is just what it is. Comparison is comparison of things, things in their efficacies, their promotions and hindrances. The better is that which will do more in the way of security, liberation and fecundity for other likings and values.'

From this dynamic, interactive and implicitly *transductive*[13] perspective Dewey is, therefore, able to outline a coherent overall conception of a

[13] For the concept of transductivity developed by Dewey it is naturally necessary to refer to the chapter 'Interaction and Transaction' from Dewey (1989-2008), in particular p. 97, where it is specified that 'What we call 'transaction' and what we wish to show as appearing more and more prominently in the recent growth of physics, is, therefore, in technical expression, neither to be understood as if it 'existed' apart from any observation, nor as if it were a manner of observing 'existing in a man's head' in presumed independence of what is observed. The

human being, who no longer qualifies as a sort of 'little god', but who instead fully recognises that humanity belongs to nature as a centre of energy that is always interconnected with multiple other centres of interaction and energy. The Western philosophical tradition from Descartes onwards has considered nature as a kind *alter ego* in relation to ourselves, which would qualify precisely for its absolute otherness and for its overall intrinsic passivity. On the contrary, from this new instrumentalist and transductive point of view, Dewey re-evaluated Spinoza's position, without ever referring to it explicitly, as well as that of the American Indians, according to whom human beings actually constituted a part, albeit infinitesimal, of nature. It is therefore necessary to start from this 'intrinsicity' between man and nature, an 'intrinsicity' which considers humans as a purely natural element, devoid of any exceptionality in the context of naturality. Dewey wrote:

> 'When man finds he is not a little god in his active powers and accomplishments, he retains his former conceit by hugging to his bosom the notion that nevertheless in some realm, be it knowledge or aesthetic contemplation, he is still outside of and detached from the ongoing sweep of inter-acting and changing events; and being there alone and irresponsible save to himself, is as a god. When he perceives clearly and adequately that he is within nature, a part of its interactions, he sees that the line to be drawn is not between action and thought, or action and appreciation, but between blind, slavish, meaningless action and action that is free, significant, directed and responsible. Knowledge, like the growth of a plant and the movement of the earth, is a mode of interaction; but it is a mode which renders other modes luminous, important, valuable, capable of direction, causes being translated into means and effects int consequences.'

In this way the absolute empiricist dichotomy between facts and evaluations, between knowledge and evaluations is undoubtedly overcome critically by elaborating the model of the transductive interaction which, as we have seen, even assumes the growth of a plant as a heuristic-paradigmatic model to analyse critically the complex interaction between human life and the knowledge of the world itself. The model of the biological growth of plants makes it possible to highlight how growth itself takes place through a continuous critical metabolisation that

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'transaction', as an object among and along with other objects, is to be understood as unfractured observation — just as it stands, at this era of the world's history, with respect to the observer, the observing, and the observed — and as it is affected by whatever merits or defects it may prove to have when it is judged, as it surely will be in later times, by later manners' (p. 97).

transforms the inorganic into the organic, ensuring that a plant is in fact able to build the environment in which it lives by interactively *building* its own context as well as by interacting with it. Through this fruitful and innovative approach, the traditional way of understanding the function of philosophy itself also changes, since Dewey consequently conceived 'philosophy as the critical method of developing methods of criticism'. On the one hand, this constituted a fecund revival of the tradition of Western criticism already outlined by Socrates in the fifth century BCE, on the other hand, it referred to a new critical-epistemic paradigm in the name of which the increase of objective knowledge must be able to be explained by the interactions of multiple transductive-transactions that also qualify the mode of growth of a plant and a vegetable.

5. The new perspective of Husserlian phenomenology

In the light of Dewey's critical considerations referred to in the previous paragraph, it is clear that what is called Hume's law has undoubtedly lost much of its heuristic éclat and its original methodological absoluteness. Not so much because the distinction between facts and values may appear today 'hopelessly fuzzy, because factual statements themselves, and the practices of scientific inquiry upon which we rely to decide what is and what is not a fact, presuppose values',[14] since this observation constitutes, in reality, a well-known and somewhat discredited critical stance. If anything, because, as Hilary Putnam added, referring to both William James and Arthur Edgar Singer Jr., '*Knowledge of facts presupposes knowledge of values*' and, conversely '*Knowledge of values presupposes knowledge of facts'*.[15] It is therefore necessary to critically investigate this connection by identifying, if possible, a different critical path. To do this, we need to go back to the *moralistic fallacy* to which we referred earlier by pointing out how the naturalists of the eighteenth century inspired by the Enlightenment fell into it precisely to the extent that into their concept of 'nature' they inserted whatever they wanted ... to obtain from it. In this case, as we have seen, the very model of 'nature' is constructed, as Preti pointed out, 'according to the ethical model that should be its consequence'. We are thus faced with an obvious *vicious circle*. The indisputable historical fact that precisely this vicious circularity constituted, through the French Revolution, the historical-civil leaven of modernity certainly does not constitute its philosophical justification. If

[14] Putnam (1981), p. 128. (Italian translation (1985), p. 140).
[15] Putnam (2002), p. 137, italics in the text.

anything, it is only a very important *de facto* datum which, however, does not nullify the unconvincing logical argument that claims to 'be the foundation' of this same vicious circularity. Precisely in order to overcome this critical impasse, which is both logical and historical, the more mature reflection developed during the Enlightenment by Rousseau and Kant finally developed a philosophically shrewder and more sophisticated naturalism. As Preti further observed, beyond the appeal to 'nature' or to 'reason', what appeared essential in this critically more mature reflection created during the Enlightenment is that

> 'a pure a priori ideal principle is invoked, which at the same time constitutes the foundation and limit of the historical-empirical variations of morals and of opinions about ethics. This supreme norm of conscience, as universal and necessary, faces contingent manifestations: it is a *critical* principle, in the face of which every norm and empirical evaluation, with its limitation, shows its arbitrariness and historical contingency. No norm stands up to the criterion of reason.'[16]

On the other hand, from this supreme *ideal* criterion of reason one can naturally deduce no particular norm, no right and therefore, also no particular system of values, no positive morality, no kind of catechism. If we do it, we fall back into the *moralistic fallacy*. It is therefore definitely crucial to reflect on the role and function of this *ideal* criterion of reason by addressing what has been considered the problem of the place of reason in ethics. But, more generally, it is necessary to question the intrinsic nature of human critical rationality as such. For this reason it is imperative to investigate what human rationality consists of.

In the first place, it could be observed how human reason coincides with *logical coherence*, by thus formulating an answer that refers merely to the *formal* dimension of human rationality. Indeed, logic does not concern only and exclusively the cognitive discourse, but rather it relates, and not only potentially, to any type of possible discourse that can be formulated, in a coherent way, in any field of investigation and reflection. But the formal transversality of this answer reveals its limits, because in this case we are dealing with a purely *formal* rationality, which can certainly make any argument 'rational' (hence also evaluative arguments), but it does not enter into the merits of rationality as such. In fact, this approach, precisely because of its formal limitation, does not make it possible to consider purely evaluative discourse as rational. Indeed, it seems to increase the traditional contrast between the intrinsic rationality

[16] Preti (1957b), p. 185.

of theoretical discourse and the equally intrinsic irrationality of evaluative discourse. However, precisely in relation to this contrast, it would then be worth mentioning an important critical achievement of Hume's, on the basis of which we know that human reason can only *order* the contents on which it reflects, but it can never *create them*. This observation is valid not only for the evaluative field, but also for the theoretical-cognitive field. In every different area of investigation, 'data' are always made available through reason but never produced by it. From this point of view, the ultimate contents of evaluations (attitudes and emotions) are then just as 'irrational' as the 'sensible data' (sensations) that underpin knowledge.

However, if we dismiss this first answer, which insists on the *logical formality* of reason, another sense of rationality can be evoked, which is specific to the typical idea of rationality developed during the Enlightenment and which is related to the logical and methodical reflection concerning what Galilei referred to as 'sensible experiences', i.e., our objective scientific knowledge. As Preti wrote

> 'The only 'rationality' (in this second sense) of the evaluative discourse lies in the rationality of its cognitive moment, of its motivations. The only disagreements that can be rationally resolved are disagreements of belief. The proof that the accused did not commit the act removes all sense from the discussion about the juridical configuration of the alleged crime.'[17]

This has a specific significance, since 'a traditional system of evaluations can be challenged not only by changing attitudes, but also, and more irremediably, if its system of motivations is theoretically false; that is, if science declares it erroneous. The case of witches, although a borderline case, shows very clearly what I mean'.

6. Theoretical disciplines as foundations of normative disciplines

Precisely this different approach to the critical understanding of human rationality makes it possible to perform a significant critical overturning of the traditional empiricist approach, which affirms the existence of an irreducible dichotomy between facts and evaluations. Indeed, if the traditional Humean distinction associated with 'Hume's law' leads us to believe that there is no direct link and no possible critical mediation between facts and evaluations, as well as between knowledge and

[17] Preti (2018), p. 415, from which the immediately following quotation is also taken.

attitudes, the new phenomenological framework outlined by Edmund Husserl enables us, on the contrary, to affirm that, in reality, precisely the opposite is true, since every evaluative judgment is always rooted in a cognitive judgment. In other words, to quote Husserl, every predicate of value, i.e. every evaluative one, must be considered as 'second-order' predicates, or rather as 'predicates of predicates'. In this perspective, to refer directly to the Husserlian *Logical Investigations*, 'theoretical disciplines' are configured 'as the foundation of normative disciplines.'[18] Husserl critically attacked the traditional empiricist (pre-)judgement on the basis of which facts and values do not present any binding relationship, as they are set within an absolute dichotomy, devoid of mediations and, therefore, completely unrelated. On the contrary, Husserl believed that theoretical disciplines themselves constitute the authentic 'foundation' of normative disciplines. In other words, for Husserl every axiological judgment is always rooted in precise, historically determined and configured cognitive assets. To clarify this innovative point of view, Husserl states, first of all,

> 'The concept of a normative science in relation to that of a theoretical science. The laws of the former tell us (it is usually held) what shall or should be, though perhaps, under the actual circumstances, it neither is nor can be. The laws of the latter, contrariwise, merely tell us what is.'

But what is meant by *should be* in comparison to the simple *be*? What is being stated, when it is argued that a 'soldier should be brave' or that a 'teacher should be qualified' or that 'a sportsman must be trained' or that 'parents must look after their children with love and intelligence' or, again, that 'a doctor must be a good clinician'? Well, Husserl observes,

> 'In all these cases we make our positive evaluation, the attribution of a positive value-predicate, depend on a condition to be fulfilled, whose non-fulfilment entails the corresponding negative predicate.'

In short: 'An A should be B' and 'An A that is not B' can only be 'a bad A', precisely because, more generally, 'only an A which is a B is a good A'. This is the general inferential scheme that is used in axiology, which then explains the overall equivalence of the following sentences: 'an A that is B is in general a bad A', 'an A should not be B'; or, again, 'only an

[18] Husserl (1970/2001), vol. I, p. 28; the following quotations appearing in the text are taken from pp. 33-34; p. 35 (italics in the text); p. 36; pp. 36-37 (no italics in the text); p. 37; p. 38 (no italics in the text; texts between both square and round brackets not present in the English text); p. 39;

A that is not B is a good A'. A cowardly soldier is a bad soldier, just as an unqualified teacher is a bad teacher, as parents unable to take care of their children with love and intelligence are bad parents, as a doctor without clinical knowledge is a bad doctor. To affirm that a soldier should not be cowardly, that a teacher should not be unqualified, that parents should not look after their children without love and intelligence, and that a doctor should not lack a clinical eye, does not, however, imply the falsity of the statement according to which a cowardly soldier is also a bad warrior or that an unqualified teacher is also a bad teacher or, again, that parents unable to take care of their children with love and intelligence are bad parents or that a doctor lacking a clinical eye is a bad doctor. Judgments that relate to *should*, in fact, do not imply any statement about a correspondent *be*, precisely because, logically speaking, a duty and the lack of duty, at least on a logical-formal level, are always mutually exclusive.

> 'We see from these analyses that each normative proposition presupposes a certain sort of valuation or approval through which the concept of a 'good' or 'bad' (a value or a disvalue) arises in connection with a certain class of objects: in conformity with this, objects divide into good and bad ones. To be able to pass the normative judgement 'A soldier should be brave', I must have some conception of a 'good' soldier, and this concept cannot be founded on an arbitrary nominal definition, but on a general valuation, which permits us to value soldiers as good or bad according to these or those properties. Whether or not this valuation is in any sense 'objectively valid', whether we can draw any distinction between the subjectively and objectively 'good', does not enter into our determination of the sense of should-propositions. It is sufficient that something is held valuable, that an *intention* is effected having the content that something is valuable or good.'

From Husserl's perspective on the basis of these considerations a normative proposition can then be defined as that particular proposition which, in relation to a previous general axiological assumption, which stands as its foundation, by determining a correlative pair of value predicates, is capable of expressing the conditions (necessary or sufficient or also, at the same time, necessary as well as sufficient) for the possession of a given predicate:

> 'If we have once drawn a distinction between 'good' and 'bad' in our valuations in a particular sense, and so in a particular sphere, we are naturally concerned to decide the circumstances, the inner or outer properties that are or are not guarantees that a thing is good or bad in this sense: what properties may not be lacking if an object from that sphere is to be accorded the value of 'good'.'

In this way it is possible to construct an articulated hierarchy of axiological judgments which refer to a fundamental norm, by configuring a set of norms that form a closed and independent group, which in the end is determined and qualified precisely by the axiological assumption judged as fundamental. Precisely this general normative proposition will then force, consequently, the entities of a given sphere to adapt as much as possible to the specific and constitutive characteristics of the predicate axiologically assumed as positive and fundamental, which generates, precisely, the general norm of that specific group of norms. In this perspective

> ‘The basic norm is the correlate of the definition of 'good' and 'bad' in the sense in question. It tells us on what *basic standard or basic value* all normativisation must be conducted, and does not therefore represent a normative proposition in the strict sense. The relationship of the basic norm to what are, properly speaking, normative propositions, is like the relation between so-called definitions of the number-series and the arithmetical theorems about the relations of numbers which are always referred back to these. The basic norm could also be called a 'definition' of the standard conception of good – e.g. of the morally good – but this would mean departing from the ordinary logical concept of definition.’

In any case the idea of a *regulatory discipline* arises just from the totality of the connections existing between different normative propositions. This central and decisive reference for normative disciplines is instead absent in theoretical disciplines, for which the overall unity of their investigations is rooted in the possibility of identifying what arises from the ‘inner laws of things’, within their ‘mutual coherence’. But, as mentioned, for Husserl theoretical disciplines are configured as the authentic foundations of normative disciplines:

> ‘Every normative proposition of, e.g., the form 'An A should be B' implies the theoretical proposition 'Only an A which is B has the properties C', in which 'C' serves to indicate the constitutive content of the standard-setting predicate 'good' (e.g.. pleasure, knowledge, whatever, in short, is marked down as good by the valuation fundamental to our given sphere). The new proposition is purely theoretical: it contains no trace of the thought of normativity. If, conversely, a proposition of the latter form is *true*, and thereupon a novel valuation of a C as such emerges, and makes a normative relation to the proposition seem requisite, the theoretical proposition assumes the normative form 'Only an A which is B is a good A', i.e. 'An A should be B'. Normative propositions can therefore make an appearance even in theoretical contexts: our theoretical interest in such contexts attaches value to the being of a state of affairs of a sort – to the