Philosophia (2008) 36:453–463
DOI 10.1007/s11406-008-9132-x

Explanation and Understanding: Action as "Historical Structure"

Jakub Čapek

Received: 20 September 2007 / Revised: 17 January 2008 / Accepted: 2 April 2008 /
Published online: 23 April 2008

Abstract The first part of this essay is basically historical. It introduces the explanation–understanding divide, focusing in particular on the general–unique distinction. The second part is more philosophical and it presents two different claims on action. In the first place, I will try to say what it means to understand an action. Secondly, we will focus on the explanation of action as it is seen in some explanatory sciences. I will try to argue that in some cases these sciences commit what I call an "external contradiction".

Keywords Philosophy · Explanation · Understanding · Action · History · Droysen · Windelband · Rickert · Mill · Helmholtz

The Issue at Stake

The problem pertains to the seemingly well-defined discipline of the methodology of empirical sciences. It arises out of the specific situation in the nineteenth century. On the one hand, there was a striking success in natural sciences (exact, progressive, efficient), on the other hand, the development of human sciences or humanities was rather modest. They could not compete with the sciences of nature either in exactitude, or in their capacity to accumulate reliable pieces of knowledge, nor in their ability to originate efficient technical achievements. How to respond to this difference in efficiency, exactness and progress of the two branches of science? Basically two reactions were possible:

(1) One the one hand, it was claimed that human sciences have to adopt the inductive method of the natural sciences, i.e. they have to look for regularities

J. Čapek (✉)
Institute of Philosophy, Faculty of Arts, Charles University nam. J. Palacha 2,
Prague 116 38, Czech Republic
e-mail: capek@cfb.cuni.cz

and try to establish general laws. Thus all sciences would proceed according to one and the same method. This is for instance Mill's project of the unification of sciences: "The backward state of the Moral Sciences can only be remedied by applying to them the methods of Physical Science, duly extended and generalized"[1]. One hundred years later, Carl G. Hempel was following the same idea when advocating the "methodological unity of empirical science"[2]. In contemporary science, we encounter similar attempts to unify all knowledge according to the model of the science of nature. Cognitive sciences or neurosciences often adopt this line of thinking. The very usage of the term "explanatory gap", which is designed to highlight the issue at stake, proves this implicit ambition. The gap in the explanation refers to the lacuna between the physical level and the level of mental phenomena[3]. My question is not, how to bridge this gap, but what is meant by the adjective "explanatory". Were there no "gap", everything would have been explained. Well, explained—in what sense? What consequences would this explanation entail?

(2) On the other hand, we can espouse the methodological autonomy of human sciences, which remains to be stated explicitly. This was the motivation behind the conceptual reflections of J. G. Droysen, W. Windelband, H. Rickert, W. Dilthey in the neo-Kantian tradition of the nineteenth century, or of Peter Winch and many others in the analytic philosophy of the twentieth century. The first step in the defence of the autonomy of human sciences consists in establishing a clear distinction between the two types of science. What constitutes this difference? It may reside either in the object or in the method. Each of these two types of science investigates *different things*, or they proceed *in a different manner*, even if they occasionally investigate the same thing.

Before we focus directly on the explanation–understanding divide, it should be noted that certain ethical questions are at stake. The defence of the autonomy of human sciences has very often been taken as an ethical task. It has been supposed, that the autonomy of human sciences has a certain moral value, since there is an intimate connection between the plea for autonomy of humanities and action itself. The assumption was simple: If we do not justify the difference between the work done by a historian, lawyer or a psychologist from the business of natural sciences, we have to abandon the idea that we are free and individual agents. Thus the plea for autonomy of human sciences has often understood itself as the plea for the freedom of the human being. If everything falls under scientific explanation, there is no longer any action—and consequently no ethics is possible. This assumption was articulated for example by the famous nineteenth century physicist and philosopher

[1] Mill, J. S. (1892). The Logic of the Moral Sciences. (In Mill, J. S., *The System of Logic* (book VI, chap. I, 1). London: Routledge.) A little further on, Mill calls the state of the "moral sciences" a "blot on the face of science"

[2] Hempel, C. G. (1942). The Function of General Laws in History. *The Journal of Philosophy*, Vol. 39, No. 2, pp. 35 – 48, quotation p. 48. See also p. 35: "general laws have quite analogous functions in history and in the natural sciences".

[3] Libet B. (1999). Do We Have Free Will? *Journal of Consciousness Studies*, 8–9, pp. 47–57, see p. 55: "There is an unexplained gap between the category of physical phenomena and the category of subjective phenomena."

of science Hermann von Helmholtz in his address from 1862: "in ascribing to ourselves free-will, that is, full power to act as we please, without being subject to a stern inevitable law of causality, we deny in toto the possibility of referring to at least one of the ways in which our mental activity expresses itself to a rigorous law"[4]. Johann Gustav Droysen shares this assumption when comparing the voluntary acts to "cells", out of which the moral realm is composed[5].

Explanation and Understanding

The distinction of the two types of empirical sciences can be based either on the object of their investigation, or on their method. Let us begin with the first possibility: the natural sciences and humanities investigate *different things*. To establish their difference, it is enough to indicate the difference between their objects. However, attempts to establish the material or substantive dichotomy never found success. All oppositions, such as nature–mind, nature–culture, matter–man, nonhuman world–world shaped by the mankind, failed to meet the basic requirement, i.e. they failed to separate two regions of scientific investigation. If for example associationist psychology tries to establish laws, does that mean that it is a natural science? Its object is the human being and its mind!

These attempts to introduce the material dichotomy arrived at a very general opposition: repeatable–unrepeatable (unique). Authors like Windelband or Rickert held that categories like "meaning" or "value" are conceivable only if attached to singular objects. Thus the distinction repeatable–unique was primordial for them. Of course, objects of humanities very often have certain normative feature, but this was taken as a consequence, not as their distinctive feature. It is useful to recall here the basic assumption of inductive science as established by J. S. Mill: the axiom of the uniformity of the course of nature[6]. The axiom states, "that there are such things in nature as parallel cases; that what happens once, will, under a sufficient degree of similarity or circumstances happen again, and not only again, but as often as the same circumstances recur. … The universe, so far as known to us, is so constituted, that whatever is true in any one case, is true in all cases of certain description". The axiom has as its consequence the universal claim of inductive science: there is nothing unique (=unrepeatable) in the world. Our investigation has to focus only on general laws (which are for the most part the laws of the sequences of events), for if there is nothing unique in events, then the scientific knowledge of an event consists in the discovery of its law.

This provides the possibility of establishing a material dichotomy of the two types of sciences. The only thing we have to do is to contest the universal validity of Mill's axiom. Thus we have on the one hand everything which is repeatable and which constitutes the object of natural science (e.g. physical events, chemical reactions, but

[4] Helmholtz, H. von (1995). On the Relation of Natural Science to Science in General. (Helmholtz, H. von, *Science and Culture: Popular and Philosophical Essays* (76–95), The University of Chicago Press.) Quotation p. 85.

[5] Droysen, J. G. (1937). Grundriss der Historik (In Droysen, J. G., Historik: Vorlesungen über Enzyklopädie und Methode der Geschichte. München), see §§ 72, 14 and 37.

[6] J. S. Mill, *A System of Logic*, Book III, chap. 3, § 1.

also the alternation of boom and recession in the economy). It is very possible and reasonable to subsume all these repeatable, similar phenomena under one concept (a law describing an observed regularity of events). On the other hand we have everything which is unique and constitutes the object of the humanities. A notable historical event (revolution) or an event of a private life (breakup) does not invite us to look for similar events of the same kind and to establish a concept or a law. Our task is not to subsume the particular under the universal, but to grasp what is unique. Thus the material distinction states—implicitly or explicitly—that the universe is, in itself, divided. Different regions of the world and of our experience (experience as the record of events that repeat versus experience as more or less fundamental change) require different approaches. There is no point either in giving names to laboratory mice, or in calculating the probability of the breakup of my relationship.

I find this repeatable–unique distinction relatively sound, the only thing is it is probably not a material distinction. The repeatability seems not to be a genuine feature of a certain kind of things and events, i.e. of a certain region of the world, but a feature of a certain *view* of the world. It can be claimed that it depends on us, whether we focus on what is repeatable in a certain thing (and in a general law, under which it comes) or on what is unique (its unique meaning cannot be found anywhere else). There is one fundamental argument in favor of the claim that repeatability and uniqueness depend on our view and not on things themselves: it is possible to show that the same phenomenon can be approached in both ways. If the material distinction were valid, this should not be possible[7]. What is more, the insistence upon the material difference does not contribute to the defence of the autonomy of humanities. The ambitions of the sciences of nature are universal. Although these sciences have not yet established for example a theory of culture based on physics, or a theory of action based on the observation of the brain, it is impossible to rule out the possibility of such a theory. If the defence of the autonomy of humanities starts from the material distinction, it is itself completely defenceless against the universal ambition of the science of nature, which is never obliged to respect differences in the matter studied. Although this is more a strategic reflection than a real argument, its significance should not be underestimated.

Thus we are led to turn to the formal distinction of sciences, which is based on the method, on the objectives of the knowledge in question. Wilhelm Windelband puts it in his famous lecture "History and natural science" as follows:

> "At this point, we have before us a purely methodological classification of the empirical sciences that is grounded upon sound logical concepts. The principle of classification is the formal property of the theoretical or cognitive objectives of the science in question. One kind of science is inquiry into general laws. The other kind of science is an inquiry into specific historical facts. In the language of formal logic, the objective of the first kind of science is the general, apodictic

[7] H. Rickert: "*everything* in the world has its 'history'", i.e., its nonrecurring evolution, just as everything has its 'nature', i.e., can be subsumed under universal concepts or laws." See Rickert, H. (1962). *Science and History: A critique of positive epistemology* (New York), p. 86.

judgment; the objective of the other kind of science is the singular, assertoric proposition"[8].

Windelband distinguishes between the sciences of laws (nomothetic sciences) and sciences of singular events (idiographic sciences). When arguing in favour of the formal (and *not* material) character of this classification his argument has different versions. For instance biology can be taken as a systematic (i.e. nomothetic) science as well as a theory of evolution understood in the sense of a unique story. Astronomy can be also in a certain sense be taken as an idiographic science, as it tells us of the beginning of the world. There is however in Windelband one example which is much closer to our everyday experience than the beginning of the universe, or the origin of the life on the Earth: the language. A particular phrase can be approached as a unique act of speech as well as an example of the rules of grammar.

Heinrich Rickert takes over the distinction of Windelband[9]. In his own words, the method of the natural science consists in generalizing[10]. In the eyes of this generalizing procedure, unique realities are something inessential. If, however, we consider particular and individual cases as something real, a general concept appears as the remotest opposite to reality—as something inessential.

"With the object of making clear and explicit *two purely logical, and hence purely formal, concepts of nature and history*—by which I mean not two different *domains* of reality, but the same *reality* seen from *two different points of view*—I myself have attempted to formulate the fundamental logical problem of classifying the sciences according to their methods in the following way: *Empirical reality becomes nature when we view it with respect to its universal characteristics; it becomes history when we view it as particular and individual.* Accordingly, I propose to contrast to the generalizing procedure of the natural sciences the *individualizing* procedure of *history*"[11].

When analyzing the general–individual relation, Rickert adds one important remark that refers to efficiency as an intrinsic feature of the knowledge of the general. The claim that "reality becomes nature when we view it with respect to its universal characteristics" could suggest that the knowledge of nature is an abstract knowledge. Our daily experience however shows us how knowledge acquired by the natural sciences is something useful, enabling us for instance to predict events. Rickert is very clear on this point. He sees a very close relation between the capacity of natural sciences to establish universal laws or regularities and their capacity to

[8] Windelband, W. (1980), History and Natural Sciences. Rectorial Address, Strassbourg 1894. *History and Theory*, Vol. 19, No. 2., pp. 169 – 185, quotation p. 175.

[9] "Only a concept that is likewise logical can constitute the opposite of the *logical* concept of nature as the existence of things as far as it is determined according to universal laws. But this, I believe, is the concept of *history* in the broadest formal sense of the word, i.e., the concept of the *nonrepeatable event* in its particularity and individuality, which stands in formal opposition to the concept of universal law. Hence, in classifying the various sciences, we must speak of a distinction between the *method of the natural sciences* and the *method of history.*", Rickert, H., *Science and History. A critic of positive epistemology*, p. 14f.

[10] "The *method of the natural sciences* can be said to be that of *generalization*… *Nature is known by a process of generalization*.", ibid., p. 46.

[11] Ibid., p. 56f.

give us a reliable basis for prediction of the course of nature and for our intervention into this course. The knowledge of the universal is not abstract and useless. On the contrary, it is very efficient. The universality and the efficiency are but two sides of the same phenomenon.

> "We can *predict* only what is *general* in reality, and it is precisely by this means that we are able to find our way in it. If the world were not *simplified* by way of generalization, we should never succeed in laying it open to calculation or in controlling it. The immense diversity of all that is individual and particular *bewilders* us until it is overcome by means of general concepts. … Thus, the necessary precondition for the practical application of the concepts of the natural sciences consists precisely in what we have found to constitute their *theoretical* character, viz., their generality and the gulf that separates them from all the nonrepeatable aspects of reality"[12].

To put it another way, natural sciences in their quest for general laws neglect the fact that each phenomenon can be seen as unique. This is what enables them to make predictions: they do not predict the future as such, but that aspect of the future which is a general case. The world we are able to command is "simplified by way of generalization". Humanities on the contrary try to grasp phenomena as unique. They neglect the possibility of making them instances of a general law. This is the only way to "save" the unique as something which has "meaning".

Now, how does all this relate to the explanation–understanding debate? The method of natural sciences is explanatory. To explain a phenomenon means—according to this debate—to show it as an effect of a cause, whereby this particular cause–effect relation is just one case of a universal law[13]. This idea of explaining, however, covers only causal explanation, which in the nineteenth century tended to be identified with explanation as such. A different kind of explanation—a statistical one—falls under the same idea of explaining. Since it is widely used in social sciences, a modified understanding of explanation was called for. Here, we are entitled to consider the particular as a case of a general statistical regularity without being compelled to know the causal relation at work. What is more, it is not true any longer that if a singular case does not confirm regularity, the regularity itself has been refuted. The explanation of free fall would have been considerably challenged if only one body transgressed this law. But the explanation, according to which the vast majority of my social group votes for a left wing party, would not be essentially refuted if I did not vote for this party.

Humanities do not try to explain but to understand phenomena. They are neither looking for the cause of an event, nor considering it as an instance of a law. On the contrary, they try to grasp the sense, the "meaning" of the unique entity. This is however a very vague definition of "understanding". What is more, it is not

[12] Ibid., p. 44. See also Windelband, p. 180.

[13] Johann Gustav Droysen, who introduced terms "explanation" and "understanding" into this methodological debate, states: "to explain" is "to infer the later from the former, to extrapolate phenomena as necessary from laws, to take them as pure effect and development." (Die historische Forschung will nicht erklären, d.h. aus dem Früheren das Spätere, aus Gesetzen die Erscheinungen als notwendig, als bloße Wirkungen und Entwicklungen ableiten.), *Grundriss der Historik*, § 37.

satisfactory, since it can be claimed, that humanities are also looking for causal relations.

Philosophical tradition which tried to clarify what "understanding" is, was of course aware of this deficiency. Instead of emphasizing the uniqueness as that which disappears in explanation and is uncovered only by understanding, leading figures of this school (H.-G. Gadamer in particular) proposed to conceive understanding as a circular procedure. The famous hermeneutic circle refers to such a relation between the whole and its part, in which we understand the part on the basis of the whole and vice versa. Let us take the individual personality as an example of a whole, where the "parts" are his or her particular expressions. On hearing a terrified scream, we understand, that the other is afraid of something. But only if we know him or her better, if we are acquainted with his or her life hopes and fears, are we able to properly understand this particular case of screaming. To put it in general terms: "The particular is to be understood out of the whole, and the whole out of the particular"[14].

Explain and Understand Action

Let us now consider action in the light of the explanation–understanding distinction. As already suggested, action is usually ranked among the subjects of the humanities, i.e. as that which comes under "understanding". This would mean that action is something unique which should not be considered as an instance of the general. The same thing taken as a case of a general law (causal, statistical), i.e. the same thing being *explained* in the above defined sense, ceases to be what it is—the action of an agent who is responsible for it—and becomes an event. In other words, it becomes something which simply happened according to a certain regularity in the course of nature. When, for instance, I take up cycling, I think that I've adopted a new stance towards my leisure time, my health etc. I have done something for myself. It can be nevertheless objected that cycling is a fashion and a large part of my age and social group is spending time doing it. Thus my activity is just an example of a general rule which can be statistically formulated. Consequently, my action ceases to be an action.

This leads to the following consideration, which I shall develop before offering a critique. Once we explain the given phenomenon as a case of a general rule, we stop, by this very approach, considering it as an action. We comprehend it as a mere event. If we on the contrary insist that there is some such thing as an action, we are apparently obliged to conceive it as something unique, which cannot be generalized. Action can only be understood. To explain an action means to abolish it.

It seems that we have to emphasize the uniqueness of an action. But what does it exactly mean to conceive action as unique? There is a simple and fundamental idea behind this emphatic claim: an action constitutes a beginning. It is a beginning of something which would not have existed without it. As Aristotle puts it, it depends on us (ef hemin). Kant distinguishes causality in accordance with the laws of nature and causality through freedom, called also spontaneity, "which can begin to act of

[14] J. G. Droysen, *Grundriss der Historik*, § 10.

itself, without requiring to be determined to action by an antecedent cause in accordance with the law of causality"[15].

An action has its beginning in itself, it is itself a beginning, and anything, that has its beginning outside itself cannot be called an action. Consequently to understand an action means to regard it as a beginning, whereas to explain an action means to regard it as a sequel or manifestation of something else.

In this line of thought, which I will abandon in favour of a different one, we have two different meanings of the term "unique": (1) unique is that which cannot be generalized, (2) unique is what is itself (an undetermined) beginning.

In the following reflection, I would like to make two points. Firstly: I claim, that to understand an action does not mean simply to regard it as something unique, but to grasp it as unique *through* the general. Secondly, to explain an action (in the above sense) actually means to abolish it as an object of inquiry. Thus explanatory sciences—insofar as they persist with this conception of explanation—really cannot deal with action. But this approach does not contest the existence of the action—as it has often been suggested—but on the contrary, it proves its existence.

Understand the Action

What does it exactly mean to understand an action ? If we look at the problem more closely, we can see, that it is impossible to insist only on the uniqueness of the action. When we try to understand an action, we look for its reasons, we ask "Why ?" If we answer this question only by saying: "well, the action is singular", we do not really answer it. To understand something as completely unique and singular is the same thing as not to understand it at all. A completely unique phenomenon is not understandable—as for example the famous "crime without a motive".

But what does it mean to understand an action through its motives ? What do we do with motives (reasons) of action ? They enable us to see, what is in the individual action *comparable* to other actions. Starting from the motives, we can compare actions of different persons. We actually live with a very strong conviction that different people who face a similar situation, and who have similar reasons, act in the same way. And if not, we ask "why not?"—and again, we look for a reason.

The action starts to be understandable only in the light of a certain reason. But does this mean, that the action is to be taken only as an example of a universal regularity ? Does everybody in the same situation act in the same way ?

The reason shows that action is, to a certain extent, understandable and comparable. But can a reason be completely detached from its relation to acting for which it is the reason? This leads us to focus on the structure of the action, since action appears to be a structured whole or a "historical structure" (historischer Zusammenhang)[16]. Hereby I am taking over the expression, which Windeband uses to designate "cultural life" (Kulturleben), in a slightly different sense. Using the word "structure", I refer to the intelligibility of an action, whereby the adjective

[15] Kant, I. (1929). *Critique of Pure Reason*, (transl. by Norman Kemp Smith, Basingstoke – London), p. 465.

[16] W. Windelband, *History and Natural Sciences*, p. 180. We can also recall Droysens analogy between a voluntary action and a cell (see note 4).

"historical" is meant to underline its unique character. Different parts of this whole are understandable only in the light of the whole, i.e. not in themselves. Every situation we encounter and in which we act, can be described as a tension: between what is given and what is possible, between motive and intention, between past and future, between what is and what we desire. It is only in the light of a certain project, of a certain desired goal, that given elements of our situation acquire the meaning of obstacles, opportunities or uninteresting aspects. The reason itself makes part of the situation. If it does not, it has no sense, it is no longer a reason for acting.

Let us take an example: the fact that is has been snowing for a couple of days. This fact can be a reason for a keen skier to go to the mountains to do some skiing. But the very same fact can be a reason for a driver—who does not like to drive on snow-covered roads—to postpone a visit to his relatives. The fact that it is snowing—taken in itself—is not, however, a reason at all. When we talk about reasons, we implicitly imagine actions to which they invite us or which they prevent. We understand reason *as reason* only through its relation to a certain situation.

Thus we are led to conclude: reason lends to action its generality and comparability (all skiers go to the mountains in winter, unless prevented by certain events). But a reason can be a reason for acting, a motive can motivate only thanks to its relation to *my* situation (created also by my passion for skiing, my fear of driving on snow-covered roads) and thus it is not purely universal any longer.

In the action, the general (reason) becomes particular. The action makes the general enter a particular constellation. If we try to grasp action exclusively as something unique, there is no real understanding at work. If on the contrary we try to understand action on the basis of the generality of motives, then there is no action any longer, since we have already switched to its explanation. But this does not mean that action excludes any sort of generality—on the contrary: the action makes use of the general, since it constitutes itself by contesting its purely general character. No action lacks this self-assertion both through generality and through being against it. When acting, I refer to a general reason which I have in common with many other people, but I refer to it *as mine*. Thus uniqueness of the action is related to its possible attribution to me. This meaning of uniqueness does not contradict the idea of the intelligibility of the action: reasons make the action intelligible, but only as far as they can be related to my situation.

There is a genuine articulation of the general and of the unique in every action, and this is what makes the action a "historical structure". A highly interesting form of this articulation can be observed each time we justify an action of our own. On these occasions, I compare my action, I make it similar to other actions and thus I make it general, strictly speaking I make it a case of the general. My justification confirms our assumption that a thoroughly unique action (in the sense of that which cannot be generalized) would not be understandable, and consequently neither justifiable nor blamable. But if I go too far in my attempt to show the action as a case of the general, I rob myself of the action. If my action were completely generalizable, it would not be an action any longer.

Understanding of an action brings together the general and the unique. The action itself comprehends the general aspect in a very ambiguous form: the general is on the one hand that which makes it understandable, but on the other hand the general is that against which the action affirms itself. The general aspect of an action—the

reason—constitutes at the same time its condition (condition of its understandability) and its threat (since it threatens its uniqueness).

The idea of humanities as sciences dealing with actions as unique entities holds true only *to a certain degree*. As soon as they try to understand an action—and this makes them sciences—they put it into a larger context, they point out influences and motivational constituents. In this attempt to understand they may even reach a point where the action disappears, since it ceases to be a concentration of the general in a unique phenomenon, and it becomes only a case of the general. Here we may witness a transition from understanding to explanation. This transition may be—for example in history—continuous.

Explaining Action

When natural sciences use explanatory method in the above delimited sense, they eliminate the individual character of the particular case as something inessential. Consequently, action fades from their sight: the attempt to explain an action is identical to its elimination. This is what neurosciences sometimes do, when they describe the correlation between states of the brain and human behaviour[17].

I would like to show what I call the external contradiction of such an inquiry. Let us make a statement: the natural science discovers universal laws of what happens in the world. Among these happenings, there is also what we, probably improperly, call actions. According to the idea of natural science as explanatory science, this statement rules out the possibility of human action. I'd like to show that, on the contrary, this very statement proves the existence of action.

First of all, let us recall one aspect of the knowledge of the general. Thanks to our knowledge of the general, we can find our bearings in the world—in particular we can predict. Once the world has been "simplified by way of generalization", we can impact on it. What is an action if not this capacity to impact on the world?

I would like to emphasize a very simple fact which has often been neglected: the knowledge of the general is a preparation for action, since it gives us a new power. This willy-nilly acquired power is a necessary concomitant of each discovery of a general regularity. He who has discovered a new general regularity, has unwittingly created a new situation of action, a new challenge for human activity.

This is what I propose to call an "external contradiction". Natural science gets into this contradiction each time it contests the existence of action. We can describe this contradiction as the incompatibility of three statements: (1) there is no action—what is usually called an action is just the result of a causal physical activity (or a particular case of a statistical probability); (2) our knowledge of the laws of this activity may serve us to predict what is going to happen (but also to say, for example, what this or that "brain" has in mind); (3) the knowledge of the universal law can nourish an action or it can create such a situation, which can only be dealt with by an action. Let us take as an example the discovery of a regularity according to which a certain part of the brain is active each time the examined person is lying.

[17] See for example the program of the "physics of introspection", as set by a distinguished French neuroscientist Jean-Pierre Changeux, in: Ricoeur, P. & Changeux, J.-P. (1998), *Ce qui nous fait penser. La nature et la règle*. (Paris), p. 76.

This discovery raises a problem: when and in what cases are we entitled to use this brain "finger-print"? Needless to say, the knowledge of universal laws will not help us to deal with this question. Each attitude taken to this question is to be considered as an action. Thus the external contradiction is a contradiction between the first and the third statement.

It is interesting to see that the existence of an intrinsic connection between the knowledge of universal regularities and power thereby acquired is nowadays in some domains almost forgotten. Francis Bacon—one of the forerunners of modern inductive science—was very clear on this point:

> "Human knowledge and human power meet in one; for where the cause is not known the effect cannot be produced. Nature to be commanded must be obeyed; and that which in contemplation is as the cause is in operation as the rule"[18].

We can also put the idea of the external contradiction as follows: the knowledge of the universal abolishes anything unique (an action)—as far as its subject matter is concerned—but the very meaning of this knowledge implies the unique. Thus action is not a subject of the explanatory science (in the version examined here), but its unintended concomitant. The explanatory science by its very nature has to detach itself from this concomitant, otherwise it would not be an unprejudiced knowledge of the universal. Thus we should not be surprised that neurosciences and natural sciences in general tend to ignore, and sometimes even to contest the existence of action. But we should not be inclined to believe it, since these sciences themselves prove the opposite to be true.

To establish a law sometimes is, in fact, to create a necessity to act. An action explanation—which substitutes a case of general regularity for an action—does not exclude the individual. On the contrary, it helps to create it: not as an achievement of the science, but as the necessity of taking an attitude to this achievement.

Acknowledgements I would like to thank the anonymous referees for a number of very helpful suggestions.

[18] F. Bacon (2000), The New Organon (Cambridge Texts in the History of Philosophy, CUP), § 3.