

Arto Siitonen

## ***Furthering Understanding***

1. There are three actions, closely related to each other, by which we try to account for the occurrences that surround us and into which we are involved. These actions are: explicating, interpreting, and explaining. They make the world make sense to us. In explicating something, e.g. a principle or a concept, one is clarifying its meaning in the light of examples. One is making explicit something that is implicitly presupposed, instinctively assumed, but not thematized in ordinary communication. Interpreting something, e.g. a mathematical formula or a work of art, involves giving meaning and significance to it. Explaining something, e.g. an occurrence in nature, an action, a trend in economics, etc., is giving an account of how and why it came about.(1)

Historically the actions of explicating, interpreting and explaining arise from, and partly replace, the various myths and stories on how the world was born, has evolved and is destined to vanish.

Psychologically, these actions can be traced back to human curiosity: our desire to know and to understand the reality in which we live.(2)

The terms 'explication', 'interpretation' and 'explanation' have their everyday, commonsense meanings as well as more technical, refined and sophisticated meanings. In the technical sense, the expression "to give an explanatory account" probably carries a slightly different connotation for, say, a forensic scientist than for a professional philosopher. However, in the interest of mutual understanding one may postulate that there remains a common core of denotation in the term.(3) Another postulation requires that the specifically technical uses of the above-mentioned expression retain some connexion to the plain practical level of life. Similar considerations apply to expressions in which the qualifications 'explicative' and 'interpretative' and the corresponding verb forms play a role.

2. In all these operations, explicating, interpreting, and explaining, one can see a common structural pattern: an object that is to be clarified, and the account which is given of it. There is a 2-place relation involved - that between the *explicatum* and what explicates it, its *explicans*; that between the

*interpretandum* and its *interpretans*; and that between the *explanandum* and its *explanans*.

The relation is asymmetrical, which means that the "-um" and the "-ns" cannot change their place. For instance, when a work of art is interpreted, it may not in turn interpret the account which is given of it. This means that there is a categorial difference between an original and its interpretation. The difference may be obscured by the possibility that the *interpretans* of an original interpretation can be turned into an *interpretandum* of a new interpretation. One can for instance interpret a scholarly work which interprets a work of art. However, also here the above distinction applies: the work does not interpret its interpretation but vice versa.

The asymmetry makes the operations of explaining, interpreting and explicating directional. There is an arrow pointing from "-um" towards "-ns" and towards further "ns's".(4)

That one cannot account for a given *explanandum* in terms which are contained in it but always in some other way, is a requirement put forward in order to deter the possibility of *circulus vitiosus*. The operation of explaining should be "zirkelfrei", as a German word - meaning 'non-circular' - expresses the issue. Jean Baptiste Molière has given a famous illustration of circular explanation. In his comedy *Le malade imaginaire*, he lets a doctor answer the question "Why does opium produce sleep?" that this is because opium has *virtus dormitiva*, i.e. dormitive power.

The claim of non-circularity should be clear enough in respect to explanation and definition. A circular definition gives us "idem per idem", thus defining nothing; a circular explanation correspondingly fails to explain anything.(5) One may wonder whether the claim applies also to interpretation and to explication. In respect to interpretation, it should have been clearly enough implied above that the claim in fact applies. This means that what has been called "the hermeneutic circle", whatever it is, does not represent any vicious circle.(6) Explication presents a problem. If, for instance, an English-English dictionary is compiled, it appears unavoidable that the very words which in their alphabetical order receive their explication, in turn help to explicate those very words that have explicated them. Thus a circle is introduced, or rather various circles or series of circles of mutual presupposition. But one may say that these circles are not strictly speaking vicious. Or one

may claim that vicious circularity is a fact with which we just have to live.

Explication, interpretation and explanation are suggestions made to the effect of how the *explicatum*, the *interpretandum* and the *explanandum* are to be understood. In accepting such a suggestion, one complies to the proposed way of looking at, and thinking of, the subject matter that is in question. One is then ready to admit that the suggested explication, interpretation or explanation is in accordance with one's own way of conceiving the subject matter, or that it even furthers one's understanding of it. In this way, explication, interpretation and explanation serve understanding and intelligibility.(7)

3. The *explicans*, the *interpretans* and the *explanans* are technical terms pointing out to the background against which explication, interpretation or explanation is given. It is possible to ask, how these "-ns" in turn are to be accounted for (cf. above). Thus, a given explication contains terms which again can be explicated. When we explain the movements of falling bodies and of planets by recourse to the principle of gravity, we may be required to extend our explanation so that the law of gravity is placed to the role of *explanandum*. Correspondingly, the *interpretans* of a sign can be accounted for by means of a new interpretation. This means that explication, interpretation and explanation can be applied to their own results.

By explaining phenomena, researchers trace them back to their causes and reasons, i.e. to more fundamental levels. How many levels there are or can be, is a difficult question. A more basic theory is such, that in terms of it a less basic theory can be accounted for. One may wonder, whether it is ever possible to give a "world explanation" by way of a "final theory", or "the very basic theory".

One can claim that the issue is a matter of convenience. If the supposed final theory is meant to answer all questions and not raise any new ones, it is indeed more fruitful for the purposes of continuous search not to assume the possibility of such a theory. Or one can present the following argument. Either the *explanans* of such an explanation coincide with a former *explanandum*; this is a vicious circle and leaves us an explanation without any cognitive value. Or the series of

*explananda* is potentially endless; what guarantees that a definite attempt to stop the regress by identifying a given theory as the final one is not arbitrary and does really show that there are no further levels of principles?(8)

A corresponding reasoning is applicable to explication and interpretation. The prospect of publishing "the final, definitive dictionary" is chimerical. Similarly, "the last, closing word of the Shakespearean scholarship" may count as a good joke but does not correspond to the nature of literary criticism.

4. Accordingly, the operations of explicating, interpreting and explaining are open-ended. The argument presented in the previous section is not committed to cultural relativism. Neither is it committed to the existence of paradigms of research which would be mutually incomparable, thus compelling the research to start anew after its background conditions have been changed. The relationality of an *explicandum* to its *explicans*, of an *interpretandum* to its *interpretans*, and of an *explanandum* to its *explanans*, has nothing to do with relativism. It is rather a structural feature: the way these operations work. If one tries to explicate, interpret or explain something, one has to do this by means of, and in relation to, something else. Human knowledge and understanding are built up step by step. It is the task of logical clarification to spell out how exactly the *relata* are related. In this respect, much work has been done concerning the topic of explanation. One typical question in the theory of explanation is whether the *explanandum* has to follow logically or probabilistically from the *explanans*.

The above considerations do not mean that the issue of relativism has been settled. Different epochs favour different explanations: what counted as explanation for ancient and medieval philosophers, may later be devaluated as pseudo-explanation. A long dispute has been concerned with the admissibility and scope of teleological explanations. Representatives of different branches of research may also disagree on the criteria of explanation.(9) Correspondingly, the standards of acceptable interpretation and explication have varied through time, among disciplines and among researchers.

On a metatheoretical level, one may wonder whether there is a satisfactory theory of explanation, of

explication, and of interpretation. It appears that on this level, the search for a final theory is as problematic as on the basic level of inquiry.

5. There is a tension between explicating and taking for granted. It is true that in explicating something, one relies on the implicitly understood meaning of those expressions which belong to the *explicans*. But any of these can in turn be questioned (cf. above), and there is thus no need to take them for granted, except for the purposes of the actual explication. Without a challenge presented to us to the effect of explicating our concepts and conceptions, we may not even become aware that we take much for granted and what it exactly is that we so accept unquestioningly. Socrates was one of the very first known persons who systematically raised questions of explication and thus methodically challenged the ingrained thought-habits of his fellow citizens.

Sooner or later the very concept of explication was to become an *explicatum*. One of the most remarkable explications of this concept is due to Hans Reichenbach:

An explication can never be proved to be strictly correct, for the very reason that the explicandum is vague and we can never tell whether the explicans matches all its features. We can merely require that an explication be adequate, that is, that the explicans correspond, at least qualitatively, to the usage of the term in conversational language, and that if the explicans is put into the place of the explicandum, most sentences of conversational language do not change their truth values. If this requirement is satisfied, we can regard the explication as a proposal to use the new term instead of the old one. This replacement will help us not only to arrive at precise meanings, but also to formulate relations concerning the concept which otherwise would remain unknown. Explication is therefore the method by the use of which we eventually succeed in understanding the meaning of a concept too involved to be accessible to direct understanding.(10)

Here is clearly stated how explication furthers understanding. Reichenbach distinguishes two levels of understanding, the first one being "direct", as he says, or immediate and intuitive, the second one more developed and explicit. Direct understanding does not reach everything that there is to be understood. Therefore, in order to have a deeper grasp, one has to overcome its limitations.

Reichenbach calls explication a method. This method serves a twofold purpose. It opens us access to "precise meanings."(11) It puts the explicated concept into a matrix of other concepts and improves our knowledge of its relations to these. Explication is a replacement: the old term is substituted by the new one. There are presumably certain conditions of adequacy concerning the way in which this operation can be carried through. Explication is a "proposal", which means that it is based on a voluntary decision. The relationship between the new and the old term is concerned

with the truth values of the sentences in which these terms occur. Reichenbach claims that "most" of these sentences retain their truth values intact. "Most" must be more than fifty per cent - but how much more? Anyway, the interplay between the extensions and intensions of the relevant sentences here is delicate.(12)

An addressee of an explication may react to what is proposed by saying "That is correct". However, Reichenbach thinks that an explication can never be strictly speaking correct but just adequate. His words imply that the concept of correctness is not applicable to a comparison of an exact term with a vague term. Adequacy, in contrast to correctness, requires only an "at least qualitative" correspondence.

One may wonder how these remarks can be applied to the topics of interpretation and explanation. Reichenbach speaks of correspondence between a term explicated and its explication. A genuine interpretation has to correspond to what it is supposed to interpret. When the *interpretans* matches the features of the *interpretandum*, the interpretation is adequate. Is it possible that an interpretation would be correct in the Reichenbachian sense? I.e., can there be cases of a quantitative correspondence between the relata of the interpretation? As to explanation, one may say that in some important cases it furthers quantitative understanding.(13)

### Notes

1) One may think that explanation differs from explication and interpretation on the basis of what is explained, interpreted and explicated. Explanation would have as its objects occurrences and laws of nature, and human actions, whereas interpretation and explication would be concerned with symbols, expressions and languages. But one can also give so-called "word explanations"; and one can interpret actions, not only their symbolic manifestations. Moreover, there is an old tradition on *interpretatio naturae*. As to explication, also it can be concerned with actions and natural occurrences. For instance, a mechanic may explicate how an engine works.

Another possibility to distinguish the three actions from each other is to recur to the questions which call for them. Typical requests of explanation would be 'how?' and 'why?', and of interpretation and explication: 'what does it mean?' However, an interpreter can also ask 'how'- and 'why'- questions, and somebody who explains may wonder what does the fact to be explained actually mean.

This is not to say that the three actions - and their concepts - would merge into each other, but to claim that their mutual border lines are not sharp, except for the case that strict technical definitions fix them.

2) Closely connected to the three themes are those of elucidation and definition. The latter has received a strictly technical meaning. Defining is close to explicating; perhaps 'explication' has a wider extension than 'definition'. In contrast to the concept of definition, 'elucidation' is a non-technical concept which can cover all the concepts here discussed.

3) This has to be stressed in order to counteract situations in which philosophers of science employ the concept of explanation in a totally different way than scientists themselves. It is the task of philosophers to explicate 'explanation', and the task of scientists to give explanations.

4) Cf. to this what Steven Weinberg says of "arrows of explanation" in his book (1992), p. 6: "Think of the space of scientific principles as being filled with arrows, pointing toward each principle and away from the others by which it is explained." Here one may wonder whether such a line of arrows is finally bound to point out towards facts rather than principles. Anyway, Weinberg has in mind a reverse order from that which has been supposed in the present article. His is a logical order of general theories including less general principles, whereas the direction of the imaginative arrow in the text above is thought to be that of an ongoing research which finds and postulates principles (the *explanantiae*). Cf. the continuation of his text on the very same page 6: "...if followed backward they all <i.e., the arrows> seem to flow from a common starting point. This starting point, to which all explanations may be traced, is what I mean by a final theory." Cf. also p. 19: "Our scientific discoveries are not independent isolated facts; one scientific generalization finds its explanation in another, which is itself explained by yet another. By tracing these arrows of explanation

back toward their source we have discovered a striking convergent pattern - perhaps the deepest thing we have yet learned about the universe."

To sum up, Weinberg's "arrow" points in the direction from *explanans* to *explanandum*, whereas the reasoning at the beginning of paragraph 2 above asks one to imagine an arrow drawn in the opposite direction. Here is not a contradiction involved, but a connexion of two ways of looking at the matter of explanation.

5) On definition, cf. footnote 2 above.

6) The problem which is posed by this circle is the following: in order to understand a work (of art, science, etc.), you have to understand the single parts (like sentences) which compose it. But in order to understand the parts, you have to understand the whole composition. How can your understanding and interpretation ever get off?

Hans-Georg Gadamer discusses the problem in his book *Wahrheit und Methode*. He says that it was always clear that from the logical point of view here is a circle ("...logisch gesehen hier ein Zirkel vorliegt..."), (1965), p. 178. He leans on Martin Heidegger's claim that the circle should not be identified as a vicious one (p. 251). The decisive question is, whether an interpreter of a work is able to systematically correct his or her idea of the *interpretandum*. The correction can be achieved, according to Gadamer: "So läuft die Bewegung des Verstehens stets vom Ganzen zum Teil und zurück zum Ganzen. Die Aufgabe ist, in konzentrischen Kreisen die Einheit des verstandenen Sinnes zu erweitern. Einstimmung aller Einzelheiten zum Ganzen ist das jeweilige Kriterium für die Richtigkeit des Verstehens." (p. 275). Gadamer's conclusion is that the circle is not a vicious one. He says this rather cryptically: "Der Zirkel ist also nicht formaler Natur." (p. 277).

In the book by John C. Maraldo (1974), a problem-historical analysis is given of the theories of Schleiermacher, Dilthey and Heidegger. At the beginning the author says that the hermeneutical circle appears to be a *circulus vitiosus*: "Der Zirkel scheint ein *circulus vitiosus* zu sein." (p. 11). However, no clear answer is given by him to the question of the logical status of the circle.

The article by Wolfgang Stegmüller (1975) is utterly polemical. According to him, in the expression "the circle of understanding" everything is false. The definite article is out of place, because there is not one definite phenomenon in question; the expression 'understanding' is not adequate because the "circle" is nothing specific for any form of understanding, and also the word 'circle' is false, because the "circle of understanding" has nothing to do with a circle. (p. 64).

Instead of circles of understanding, Stegmüller would like to speak of dilemmas of interpretation. These contain genuine difficulties. Stegmüller argues against the suggestion that these difficulties are typical only for humanities and social sciences. Problems of interpretation as well as methods to overcome them are shared by all branches of research. Stegmüller thinks that the hermeneutic philosophers have considered the circle of understanding to be a vicious one (cf. p. 86 of his article). However, if the above interpretation of Gadamer's view is correct, he does not consider the circle to be vicious. Stegmüller criticizes Gadamer's concept of prejudice (p. 66). Gadamer distinguishes between positive and negative prejudices: "die produktiven Vorurteile", "Vorurteile(n), ...die das Verstehen verhindern und zu Mißverständnissen führen." ((1965), p. 279). In fact this is dubious. But the issue is largely terminological: one can speak, instead of prejudices, of conceptions to be tested.

7) According to Matti Sintonen (1998), p. 304, "understanding materialises in different ways, depending on the aim and audience." Sintonen is here studying the question how science is and can be understood (or misunderstood). Those who understand it may be themselves scientists, or they may be philosophers (and psychologists, sociologists etc.) of science, or laymen. One may think that understanding materializes in explications, interpretations and explanations (and concretely in drawings, writings, equipments etc.). How these are given, is, as Sintonen thinks, aim-related and audience-related. For instance, a textbook of science is addressed to a different audience than a popularizing work on science. Sintonen distinguishes two aspects of understanding. The first one manifests when specialists of a field "set up concepts and conceptual networks such that the various items of interest find a place in a coherent whole (a totality)" (p. 304). This results in abstract theories and structures which can be studied in their own right through a "logical approach" (p. 304). The second one has often been neglected, according to Sintonen. It is the pragmatic dimension of understanding. The main questions in respect to it are, which concepts and networks are used, and how they are employed (cf. p. 304). One can study these by "historical method" (p. 304), but also by a systematic albeit "non-technical approach" (p. 305).

8) It is against this arbitrariness of identification that Steven Weinberg is arguing in his book *The Dreams of a Final Theory*. One can understand the title as slightly self-ironical; however, Weinberg is earnest in his search and in his postulation of the existence of such a theory. Cf. (1992) p. 230 f: "Popper and the many others who believe in an infinite chain of more and more fundamental principles might turn out to be right. But I do not think that this position can be argued on the grounds that no one has yet found a final theory." Here Weinberg is right; but he is also shooting pass the goal. It is not relevant that no one has not yet found the theory. Only presenting and proving such a theory would count. The *onus probandi* lies on the shoulders of the proponents of the presumed theory.

9) On these topics, cf. G. H. von Wright (1971).

10) Hans Reichenbach (1991), p. 24; cf. p. 177.

11) Actually, one should say rather: "more precise meanings", because preciseness is gradual, not absolute.

12) This means that under a given explication of a term in conversational sentence, the truth value of the sentence is preserved, while another explication will change it. When and how this exactly happens, depends on contexts. 'Truth value' is an extensional concept, and the way of referring to the term is intensional.

13) Cf. S. Weinberg (1992), p. 7: "...our modern idea of what a successful scientific explanation would have to accomplish: the *quantitative* understanding of phenomena."

## ***Literature***

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