

THE RELATIONSHIP BETWEEN KNOWLEDGE AND EXPERIENCE IN THE NINETEENTH CENTURY

An Essay by
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At the end of the seventeenth century John Locke developed a theory of epistemology that influenced and determined the concept of knowledge of the coming century. In this theory he states that “all our knowledge is founded” in “*experience*”, “from this it ultimately derives itself.”¹ Locke perceives the mind of a new born child as a “white paper, void of all characters, without any ideas”, thereby rejecting the concept of innate principles in the human mind that govern and order experience. In his opinion there are no such “primary notions . . . stamped upon the mind of man, which the soul receives in its very first being; and brings into the world with it.” (*Essay*, 59) Ideas or general principles are only “mistaken for innate principles” while in reality they are “discoveries made and varieties introduced, and brought into the mind” (*Essay*, 64) not before but with experience. This experience consists of two aspects: “Our observation employed either about *external sensible objects*; or about the *internal operations of our minds, perceived and reflected on by ourselves*”. (*Essay*, 109) According to the first aspect of experience the content of the mind comes through the senses which “*convey into the mind, several distinct perceptions of things, according to those various ways, wherein those objects do affect them*”. These sensations lead to “those ideas, we have of *yellow, white, heat, cold, soft, hard . . . and all those which we call sensible qualities*”. (*Essay*, 109) According to the second aspect experience is made by the “*perception of the operations of our own minds within us*” which then “furnish[es] the understanding with another set of ideas, which could not be had from things without; and such are . . . all the different actings of our own minds”. Locke calls this side of experience “*reflection*”. (*Essay*, 110) Locke stresses that “the understanding seems to me, not to have the least glimmering of any ideas, which it doth not receive from one of these two.” There is “nothing in our minds” which has not been brought into it by either sensation or reflection. (*Essay*, 110) Knowledge is solely derived from experience, from the principles that organise and categorise it to the ‘facts’ that are contained in these categories.

Although this account of empiricism is rather simplistic and not unproblematic, it does indeed reflect the common concept of empiricism in the eighteenth century which derived itself mainly from Locke’s point of view, later being modified by Berkeley and Hume. What this form of empiricism emphasises is that

¹John Locke, *An Essay Concerning Human Understanding*, edited by Roger Woolhouse, (Penguin: London, 1997), p. 109, in the following text the book is referred to as *Essay* with pagenumbers in parenthesis.

knowledge is based upon experience and not determined by innate principles of the mind.

In the nineteenth century, however, the problematic side of empiricism seems to have grown strong enough to suggest a different relationship between knowledge and experience. Hume, for example, had already asked the question how the human mind can establish causal connections merely from experience when all it perceives is one event following another², thereby addressing the problem whether and how concepts of thought can be derived from an experience which does not provide them explicitly. Hume answers this question in the tradition of empiricism. The experience of a “constant conjunction” of events in a multiplicity of similar cases produces a feeling of connection in the mind which turns into the idea of causation. In the nineteenth century the answer to this problem changes. Causation is not a concept that follows experience but a concept that is brought to and determines experience. Consequently, the relationship between knowledge and experience has become a different one. Knowledge is no longer founded solely on experience, but regarded as a mixture of a-priori concepts in the mind and experience. I want to demonstrate this view by starting with an exposition of the philosophy of science by William Whewell and later connecting it with literary texts of the period.

Whewell’s *Philosophy of the Inductive Sciences*³ does not only hope to “discover something of this common element and common process in all discoveries [of science]” (PhIS, I, vi), but also aims at “understand[ing] the nature and condition of real knowledge, by studying the nature and conditions of the most certain and stable portions of knowledge which we really possess” (PhIS, I, 1), i.e. science. Whewell is confident “that a just Philosophy of the Sciences may throw light upon the nature and extent of our knowledge in every department of human speculation.” (PhIS, I, 3) His philosophy of science is also an examination of human understanding.

In his opinion the nature and condition of human knowledge is characterised by what he calls the “fundamental antithesis of philosophy” (PhIS, I, 16). One expression of this antithesis is the opposition between things and thoughts. While things are external objects which are “independent of us”, “without us” and not made “by seeing or touching them”, thoughts “belong to ourselves” and “take place within us”. (PhIS, I, 17) And although “Philosophy requires the separation of them, in order that the nature and structure of knowledge may be seen” (PhIS, I, 18), although, that is, in the analysis of knowledge things and thoughts appear to be opposed to each other, both “are so intimately combined in our Knowledge, that we do not look upon them as distinct.” (PhIS, I, 18) In knowledge itself the

²*The Oxford Companion To Philosophy*, edited by Ted Honderich, (Oxford University Press: Oxford and New York, 1995), entry ‘David Hume’, pp. 377-381

³William Whewell, *Philosophy of the Inductive Sciences*, The Sources of Science No. 41, Vols. I-II, (Johnson Reprint Cooperation: New York and London, 1967, Facsimile of the Second Edition, London, 1847), in the following text the work will be referred to as PhIS with volume number and pagenumbers in parenthesis

antithesis of philosophy is combined to a synthesis.

So far Whewell's antithesis could be seen as a parallel to Locke's two aspects of experience, sensation and reflection. Whewell, however, stresses that this is not the case. Although he carefully assures his reader that "I do not say that my view is contrary to his [Locke's]: but it is altogether different from his" (PhIS, I, 29) because Locke is dealing with the "origin of our knowledge" while he is concerned with "its nature and composition", Whewell ultimately contradicts even Locke's theory of origin. For according to Whewell's analysis of the composition of human knowledge Locke's theory of its origin must collapse. In a further examination of the fundamental antithesis in its expression as the opposition of theories and facts, ideas and sensations, reflection and sensation, matter and form, Whewell continues to combine all these opposition in the synthesis which is human knowledge. In this synthesis "a Fact is a combination of our Thoughts with Things in so complete an agreement that we do not regard them as separate." (PhIS, I, 24) There are no such things as facts in themselves, because as soon as we regard them as facts, they are mixed with our way of thinking. The same is true concerning ideas and sensations because "we see and hear and touch external things, and thus perceive them by our senses; but in perceiving them, we connect the impressions of sense according to relations of space, time, number, . . . etc." (PhIS, I, 25) There is no perception without the use of ideas, in every instance "*Ideas* enter into our perceptions of external things." (PhIS, I, 26) Therefore, "an activity of the mind . . . is requisite in all our knowledge." (PhIS, I, 27) This synthesis of reflection and sensations contradicts Locke's description of the early development of the mind, the origin of knowledge. Locke proposes that

the senses at first let in particular ideas, and furnish the yet empty cabinet: and the mind by degrees growing familiar with some of them, they are lodged in the memory, and names got to them. Afterwards the mind . . . abstracts them, and . . . learns the use of general names. In this manner the mind comes to be furnished with ideas and language, the materials about which to exercise its discursive faculty".
(*Essay*, 65)

First of all, it is obvious that in Locke's opinion sensation is able to work independent of reflection since he regards the new born mind as empty and still capable of receiving sensations. These sensations provide the mind with its first material which only later on becomes the basis for its reflection. According to Whewell's theory this division between sensation and reflection is not possible because "we hold that there is no Sensation without an act of the mind, and that the mind's activity is not only reflexly exerted upon itself, but directly upon objects". (PhIS, I, 28) In Locke's opinion the mind receives in a passive state and its passivity is compared to the inability of a mirror to "refuse, alter, or obliterate the images or ideas, which, the objects set before it, do therein produce". "The mind", Locke stresses, "is forced to receive the impressions; and cannot avoid the perception of those ideas that are annexed to them." (*Essay*, 121) Whewell

does not share this view. “We cannot say”, he states, “that Objects create Ideas”. (PhIS, I, 44) He is convinced that the mind is “actively applying Ideas to the objects which it perceives” and does not “perceive them passively by means of Sensation.” (PhIS, I, 26-27) He even goes so far to say that although objects are not produced by thoughts, mental acts do “*half create*” by moulding and interpreting objects. (PhIS, I, 26) Therefore, according to Whewell an empty mind could not perceive anything since it could not apply any mental activity to sensations. An empty mind, in this view, cannot receive ideas without possessing at least some of them in advance. It is impossible that the whole knowledge of this mind can be derived from experience. Some of it has to exist beforehand in order to make experience possible. Whewell does not call them innate, a notion he rejects, but “inherent types of mental development” or “results of connate intellectual tendencies”⁴ which stresses the aspect process and unfolding. It does mean that there is knowledge which does not belong to the realm of experience.

Another aspect of this notion that knowledge is not solely founded in experience is Whewell’s distinction between necessary and experiential truths. (PhIS, I, 19) The former “are derived from our own Thoughts”, contrary to the latter which “are derived from our observation of Things about us.” (PhIS, 21) This important distinction is already expressed by their names: necessary truths are not founded in experience. The reason for this is that “universality and necessity which distinguishes them can by no means be derived from experience.” (PhIS, I, 55) Since experience is always limited it cannot provide the quality of universality. Whewell observes that “there is nothing to assure us that the next case shall not be an exception to the rule.” (PhIS, I, 62) Experience is also incapable of providing the quality of necessity. Experience can only “observe and record what has happened; but she cannot find, in any case . . . any reason for what *must* happen.” (PhIS, I, 63-64) This element of necessity which includes the inability to conceive the negation of the necessary truth stems only from the ideas which the mind applies to experience and which are “the real sources of necessary truth.” (PhIS, I, 64) Accordingly, Whewell states that any “generality, certainty and evidence” of our knowledge is derived from acts of the mind and could “in no degree” have been supplied by the senses. (PhIS, I, 54) These acts of the mind are governed by fundamental ideas “according to rules which are . . . fixed and permanent.” (PhIS, I, 66) These ideas “entirely shape and circumscribe our knowledge” (PhIS, I, 66) and knowledge would not be possible without them. Therefore, the knowledge we have always implies an element which is outside of experience. As Whewell puts it: “our knowledge contains an ideal element, and . . . this element is not derived from experience.” (PhIS, I, 74) Because our knowledge possesses this element it is possible for Whewell to contradict Hume’s doubt that we can have certain knowledge of, for example, causality, since this concept is not explicitly supplied by experience. According to Whewell Hume is of course right. Experience will never lead us to the knowledge of causality, but

⁴William Whewell, *Theory of Scientific Method*, edited by Robert E. Butts, (Hackett Publishing Company: Indianapolis, 1989), p. 7

“we have some other source of knowledge than experience, since we have such an idea [of causation]” and these ideas “are not copies of our impressions.” (PhIS, I, 75) They have “some separate and independent origin” (PhIS, I, 75) which is not connected to experience of any kind. Again Whewell stresses that every kind of experience would not be possible without these ideas since even “the exercise of our senses discloses to us, *at the same time*, the external world, *and* our own ideas of space, time, and other conditions, *without which the external world can neither be observed nor conceived.*” (PhIS, I, 76, emphasis mine)

This concept that knowledge always “consists in applying the ideas and conceptions furnished by our minds to the facts which observation and experiment offer to us” (PhIS, II, 3) characterises Whewell’s whole notion of science and its epistemology. Scientific theories are not derived from experience but are a synthesis of observations and conceptions of the mind which are brought to these observations. This becomes obvious in Whewell’s definition of induction. According to common opinion, Whewell observes, induction is defined as “the process by which we collect a *General Proposition* from a number of *Particular Cases.*” (PhIS, II, 48) Seen from his point of view this is “an inadequate account of the matter” because

the particular facts are not merely brought together, but there is a New Element added to the combination by the very act of thought . . . There is a Conception of the mind introduced in the general proposition, which did not exist in any of the observed facts. (PhIS, II, 48)

A general proposition, Whewell claims, can never be found in the however extensively made observation of particular cases. In other words, it cannot be supplied by experience, it cannot simply be “collected” from it. Instead, it is an element that has to be added to experience like, in Whewell’s image, a string has to be added to a collection of pearls in order to obtain a connection between them. “In every inference by Induction”, Whewell states, “there is some Conception *superinduced* upon the Facts”. (PhIS, II, 50) The common notion of induction misses this point because

this Conception, once introduced and applied, is looked upon as inseparably connected with the facts, and necessarily implied in them . . . men can no longer easily restore them back to the detached and incoherent condition in which they were . . . The pearls once strung, they seem to form a chain by their Nature. (PhIS, II, 51-52)

What Whewell here implies is that our usual definition of induction is an illusion which is produced because Locke’s relationship between knowledge and experience is, in reality, inversed. While according to Locke the content of our mind is completely derived from experience Whewell proposes that our experience is determined by the conception our mind adds to it. These conceptions even seem

to have the power to change experience. We cannot go back to the state of the world in which we perceived facts in an unconnected way. When a concept is brought to them our perception changes accordingly. This goes so far that conceptions are no longer recognised as such and become “the simplest modes of conceiving the facts: they are really Facts.” (PhIS, II, 52) They take “a fixed and permanent place in the understanding of every one” (PhIS, II, 52) and once this step is done “all the phenomena change their aspect.” (PhIS, II, 53)

No scientist, however, discovers an appropriate conception without a process of trial and error in which hypotheses have to be imagined and then compared with the observations. This, Whewell emphasises, is a necessary condition of all human knowledge. Thus “the order and connexion which exist” is detected by

conceiving imaginary relations of order and connexion which have no existence . . . To try wrong guesses is . . . the only way to hit upon right ones. The character of the true philosopher is, not that he never conjectures hazardously, but that his conjectures are clearly conceived, and brought into rigid contact with facts. (PhIS, II, 55)

Conceptions, Whewell insists, have to be developed with the facts in mind in order to prevent them from being “empty speculations”. (PhIS, II, 47) This “rigid contact with facts” means that the concepts have to be able to explain all the observed phenomena and, in order to test their truth, “ought to *foretell* phenomena which have not yet been observed” but belong to the same kind of phenomena which the hypothesis is supposed to explain. (PhIS, II, 62) An even better possibility to verify a hypothesis is a prediction of cases that are different from those which the hypothesis includes. (PhIS, II, 65) It is obvious that Whewell is concerned to show that his theory of knowledge does not lead to illusion but to reality and certainty. As Robert Butt points out: “Whewell insisted that the laws of nature we discover . . . are *truths* about nature.”⁵ He attributes the possibility to find truth, as we have already seen, not to experience but to the activity of the mind which is governed by ideas and concepts. These “fundamental ideas are . . . universal forms of intuition”⁶ and this guarantees that they are necessarily true⁷. On the other hand, ideas and concepts are in the danger of leading to delusion when they are not brought into contact with experience. Knowledge, therefore, is always a synthesis of both elements.

So far I have concentrated on a detailed discussion of William Whewell’s *Philosophy of the Inductive Sciences* because it provides a theoretical framework for a general attitude towards knowledge which can be found in many literary texts of his period. In these texts ideas, theories and concepts all complement and influence experience, and knowledge always consists of these two elements: experience and ideas. In the following I want discuss selected literary texts under this

⁵Whewell, 1989, introduction, p. 25

⁶as quoted in Whewell, 1989, introduction, p. 7

⁷Whewell, 1989, introduction, p. 24

aspect and I want to start my discussion with a novel which seems to argue with a different emphasis than Whewell does. While Whewell takes it for granted that knowledge always contains the element of experience and stresses the significance of ideas which complement it, Dickens depicts the shortcomings of a worldview that is solely determined by theory and abstraction and perceives itself as factual and realistic. At first glance, the world of Thomas Gradgrind in the first book of Charles Dickens's *Hard Times*⁸ consists solely of facts. Gradgrind is described as a "man of realities. A man of fact and calculations" who is always ready to "weigh and measure any parcel of human nature, and tell you exactly what it comes to." For him "everything is a mere question of figures, a case of simple arithmetic" and in his head there is no space for any "nonsensical belief". (HT, p. 10) Accordingly, in his school children are supposed to learn "nothing but Facts" because "Facts alone are wanted in life." (HT, p. 9) They are not allowed to "see anywhere, what you don't see in fact" and "are not to have what you don't have in fact" (HT, p. 13) which means that they are not allowed to put pictures of horses on walls because horses never walk on walls in reality or to use carpets with a representation of flowers on them because people "don't walk upon flowers in fact". (HT, p. 13-14) Gradgrind calls this "exact knowledge" (HT, p. 94). Exact knowledge involves reason, "mathematical figures which are susceptible to proof and demonstration" (HT, p. 14), figures, calculations, tabular statements, statistics, definitions, and all other elements are excluded from it. Gradgrind is convinced that this kind of knowledge leads to facts and a realistic worldview. The narrator, however, undermines this view by comparing Gradgrind's method of dealing with the world with an astronomical observatory which is "made without any windows" so that "the astronomer within should arrange the starry universe solely by pen, ink and paper" (HT, p. 99). This attempt to attain knowledge which concentrates on abstraction and theory and excludes observation and with it experience does neither lead to facts nor to reality. Gradgrind's books, the narrator tells us, prove "anything you like" (HT, p. 98), not just what is true. His claims that something is an absurdity and has no existence, e.g. feelings (HT, p. 101), are not based on experience but on definition. His daughter reminds him that they can be regarded as reality when she asks "What are my heart's *experiences*? ... What do *I know* ... of tastes and fancies; of aspirations and affections" (HT, p. 104, emphasis mine). Even Gradgrind's aversion to carpets with flowers on them could be cured by experience because it could teach him what Sissy Jupe knew all the time: People do not walk on flowers when they walk on carpets with flowers. These flowers are just pictures. (HT, p. 14) Representations, concepts, ideas on their own cannot be taken for reality, for facts. They have to be combined with experience to become facts which is exactly what Whewell insists on. The neglect of observation "gives rise to empty speculation, idle subtleties ... false opinions concerning the laws of phenomena, disregard of the true aspect of nature" (PhIS, II, 47) All knowledge,

⁸Charles Dickens, *Hard Times*, edited by Kate Flint, (Penguin Classics: London, 1995), in the following the text is referred to as HT with pagenumbers in parenthesis

every fact is a combination of idea and experience.

Another examination of this synthesis of ideas and experience in knowledge can be found in Robert Browning's 'Epistle Containing the Strange Medical Experience of Karshish, the Arab Physician'⁹. The poem describes the encounter between the Arab physician Karshish and the biblical Lazarus after being raised from the dead by Jesus. In it Karshish is characterised as a person who practices a scientific worldview in general and particularly the worldview of a non-christian physician. This means that he is "the picker-up of learning's crumbs" and "not-incurious in God's handiwork" (Epistle, 1-2), "inquisitive how pricks and cracks/ Befall the flesh" (Epistle, 9-10), a "vagrant Scholar" (Epistle, 15) who does not only include the wish for health and fame in the greetings to his teacher but also the wish for knowledge (Epistle, 16). With his epistle he sends his teacher Abib raw material for drugs, news of cures he has encountered on his journey and, above all, an account of a case that "has struck me far more than 'tis worth" (Epistle, 70). This is the case of Lazarus who, according to his own conviction, "was dead and then restored to life" (Epistle, 99), thereby claiming something which defies scientific experience and conceptions. At first Karshish seems to be unable to consider Lazarus' account of his case because it completely contradicts his concepts of the world. He looks at Lazarus with the eyes of a physician and diagnoses "a case of mania – subinduced/ By epilepsy, at the turning-point/ Of trance prolonged unduly some three days" (Epistle, 79-81). Seen from his point of view death becomes trance and what for Lazarus has been a supernatural experience is turned into something which has to be explained within the realm of the natural. In Karshish's opinion he only believes that he was dead because this was "The first conceit that entered" his mind when his trance came to an end. (Epistle, 85-99) Accordingly, Karshish regards Jesus as "a Nazarene physician" (Epistle, 100) who successfully stopped the trance "by the exhibition of some drug/ Or spell, exorcization, stroke of art" (Epistle, 82-83) while Lazarus sees his curer "As . . . God himself,/ Creator and sustainer of the world,/ That came and dwelt in flesh on it awhile!" (Epistle, 268-270) But although Karshish's observation is influenced by the conceptions and theories in his mind he also respects the value of experience. He cannot dismiss Lazarus simply as a madman. This does not account for the "peculiar interest/ And awe indeed this man has touched me with." (Epistle, 287-288) He therefore forms an alternative theory in order to account for this experience according to which in Lazarus

the treasure knowledge, say,
Increased beyond the fleshy faculty-
Heaven opened to a soul while yet on earth,
Earth forced on a soul's use while seeing heaven:
The man is witless of the size, the sum,
The value in proportion of all things (Epistle, 139-144)

⁹Robert Browning, *The Poems, Volume I*, edited by John Pettigrew, (Penguin: London, 1996), pp. 565-573, in the following text the poem is referred to as Epistle with verse numbers in parenthesis

Something supernatural has taken place. Heaven is already visible for Lazarus although he is still in his earthly existence, his eyes are opened to something which others cannot see (Epistle, 156), while at the same time he seems to have lost the conceptions and ideas that govern earthly life, e.g. size, sum, value. Here, Karshish himself recognises the importance of ideas for the organisation of experience. Since Lazarus' behaviour is no longer directed by those ideas which are common for our existence his experience and consequently his reaction is a different one. He seems to have already completed the transition into new ways of perception according to new concepts Paracelsus is speaking about on his deathbed when he says "New being awaits me; new perception must/ Be born in me before I plunge therein;/ ... I turn new knowledge upon old events"¹⁰. This explains why Lazarus remains unimpressed, even apathetic, when Karshish expects him to be affected and why he, on the other hand, demonstrates great concern for things by which others are moved to a much smaller degree (Epistle, 221-231). By noticing this Karshish implies a theory of knowledge which describes it as a synthesis between ideas and experience, with an emphasis on the determining influence of ideas. That in turn experience can have an impact on concepts, that concepts have to be brought into contact with experience is demonstrated by Karshish's willingness to change, at least temporarily, his original diagnosis of a case of mania which is, in effect, a state of delusion to an acknowledgement that Lazarus possesses a "treasure" of knowledge. Karshish comes even close to change some of his own concepts after coming into contact with those of Lazarus when he considers Lazarus' view of God: "The very God! think, Abib; dost thou think? / So, the All-Great, were the All-Loving too" (Epistle, 304-305). Ultimately, however Karshish cannot decide to adopt the foreign view. It is equally hard for him to decide which of his theories of Lazarus is the right one. "After all" he says towards the end of his epistle, "our patient Lazarus/ is stark mad; should we count on what he says?" (Epistle, 263-264) His answer is a careful "perhaps not" (Epistle, 265) which shows Karshish's openness. But although he is not completely determined by his concepts and open to imagine alternative ones, his old concepts seem to remain the most influential ones and only a "brainwash" as Lazarus seems to have experienced and Paracelsus waits for might be able to change this.

The last text I want to discuss under the aspects of its implied theory of knowledge is Robert Louis Stevenson's *Dr Jekyll and Mr Hyde*¹¹. This novel tells the story of a scientist who is able to transform himself physically as well as psychologically into his other self, his more aggressive, reckless, sensual and evil side (JH, 62-63) and it tells this story in a particular way, that is, in form of a mystery. A man appears in London who calls himself Mr Hyde. He tramples over children, commits murder and, above all, seems to stand in some kind of relationship to the respected Dr Jekyll. Nobody knows where he comes from

¹⁰Robert Browning, *Poems*, p. 131, verse 500-507

¹¹Robert Louis Stevenson, *The Strange Case of Dr Jekyll and Mr Hyde and Weir of Hermiton*, edited by Emma Letley, (Oxford University Press: Oxford, 1987, 1998), in the following the text will be referred to as JH with pagenumbers in parenthesis

and why Dr Jekyll entertains a relationship with him. These are the mysteries which occupy Dr Jekyll's lawyer and friend Mr Utterson, his friend Mr Enfield, and Doctor Lanyon. They collect evidence about and experience with Mr Hyde but are unable to solve the mystery and find out that Jekyll and Hyde are parts of the same person. Enfield, for example, is the first who encounters Hyde personally while he tramples over a child and the first to witness the existence of a relationship between Jekyll and Hyde when Hyde enters Jekyll's house and pays for the injuries he has caused with a cheque signed by Jekyll. Utterson knows that Jekyll's will does not only leave all his possessions to Hyde in the case of his death but also "in the case of Dr Jekyll's 'disappearance or unexplained absence for any period exceeding three calendar months' " (JH, 14). Later he learns that Hyde has murdered a man with a stick which belongs to Jekyll (JH, 26), possesses uncharacteristically tasteful pictures in his lodgings (JH, 28), and even writes a hand which is almost identical to that of Jekyll (JH, 34). Utterson and Enfield interpret this evidence from the start in a certain way. In their opinion Jekyll is forced to be on friendly terms with and support Hyde because he knows about "some old sin", "some concealed disgrace" (JH, 20). This also causes Jekyll to give his stick to Hyde, to buy him tasteful pictures, even to forge a letter supposedly written by Hyde in order to mislead the police (JH, 34). Utterson modifies details of his theory but he never gives its main concept up. Right to the end when he finds the dead Hyde in Jekyll's house, but no trace of Jekyll's body, even when he finds "a copy of a pious work, for which Jekyll had . . . expressed a great esteem, annotated, in his own hand, with startling blasphemies" (JH, 50) Utterson is "amazed" but he remains unable to see the truth. This is because he lacks the conception that would enable him to interpret the evidence in a different way. According to Utterson's concept two physical appearances that are as different from each other as Mr Hyde is different from Dr Jekyll can never be manifestation of the same person. For him it is in principle impossible to conceive the concept that one person can manifest different sides of itself in different bodies. And the evidence he sees, the experience he makes is unable to shake this conception, let alone provide an alternative theory. This has to be done by Dr Jekyll's letter of confession. This account corresponds to Whewell's opinion that a conception cannot be derived from but is always brought and added to experience and organises it. Once this is successfully done experience and conception seem to become inseparable and the resulting perception of experience is treated as self-evident. It could, of course, be argued that one experience would be able to provide the alternative conception Jekyll's letter offers and that is the direct observation of a transformation of Dr Jekyll into Mr Hyde or vice versa. However, the one person in the story who makes this observation does show that even this is not really the case. One evening Dr Lanyon who has broken off any contact with Dr Jekyll because he advocates theories of "transcendental medicine" is visited by Mr Hyde who finally demonstrates to him that his "material views" are wrong by transforming himself into Dr Jekyll (JH, 58-59). And although Lanyon knows that "I saw what I saw, I heard what I heard . . . yet now when that sight has faded from my eyes, I ask myself if I believe in it, and I cannot answer." (JH, 59)

What Lanyon cannot accept is the concept and its implications and he refuses to incorporate it into his knowledge, no matter what he experienced. He rather, so it seems, dies than adopts it. The reader who rereads the story of Jekyll and Hyde makes the contrary experience. He is already in possession of the concept which offers the solution to the case and almost cannot believe that the evidence they have does not bring Utterson and his friends to see it since for him it seems to be the only sensible interpretation of their experience. What the text then illustrates is the close connection between ideas or concepts and experience in knowledge. This is exactly the epistemological theory Whewell develops. The “difficulty . . . of distinguishing Facts from inferences and from interpretation”, he says, “amounts to an impossibility.” (PhIS, II, p. 30)

With these few examples I wanted to demonstrate that the question of knowledge was not only a theoretical issue in the nineteenth century, but does indeed pervade the literature of the period, forcing the authors and their characters, consciously or not, to deal with all the problems encountered in the philosophy of science, as they are pointed out by Whewell. Obviously, both – the philosopher and the artist – come to a very similar conclusion, namely that knowledge is always a close synthesis of ideas and experience. In this respect they break ground for and even anticipate the twentieth century. The insights of modern science, in particular physics at the beginning of the twentieth century, which finally brought to a fall eighteenth-century theories of knowledge, might not have been possible without this attitude of the nineteenth century which successfully questioned, shook, and overcame the older views. The difference between William Whewell and Thomas Kuhn, a philosopher of science of the twentieth century, then is ultimately only one of degree and not of principle. Like Whewell, Kuhn claims that “observation and conceptualisation, fact and assimilation to theory, are inseparably linked”¹². What Kuhn emphasises in a stronger way than Whewell is that by a change in conceptualisation, by a new paradigm “the scientist’s world is qualitatively transformed”¹³, that a “transformation in vision”¹⁴ takes place. After a paradigm change the world appears to be a different one. Although this is already implied in Whewell, it is, as I hope to have shown, equally important for him to establish the certainty of scientific truth which seems to exclude the possibility of a radically transforming world. It is this element, already wavering in Whewell, which becomes increasingly questionable on its way into the twentieth century.

¹²Thomas Kuhn, *The Structure of Scientific Revolutions*, second enlarged edition, (University of Chicago Press: Chicago and London, 1970), p. 55

¹³Kuhn, 1970, p. 7

¹⁴Kuhn, 1970, p. 118

BIBLIOGRAPHY

- Browning, Robert. *The Poem, Volume I*, edited by John Pettigrew. Penguin. London, 1996.
- Dickens, Charles. *Hard Times*, edited by Kate Flint. Penguin Classics. London, 1995.
- Kuhn, Thomas S. *The Structure of Scientific Revolution*, second enlarged edition. University of Chicago Press. Chicago and London, 1970.
- Locke, John. *An Essay Concerning Human Understanding*, edited by Roger Woolhouse. Penguin. London, 1997.
- Stevenson, Robert Louis. *The Strange Case of Dr Jekyll and Mr Hyde* and *Weir of Hermiston*, edited by Emma Letley. Oxford University Press. Oxford and New York, 1987, 1988.
- Strong, E.W. 'William Whewell and John Stuart Mill: Their Controversy about Scientific Knowledge'. *Journal of the History of Ideas* 16 (1955) 209-231.
- Whewell, William. *Philosophy of the Inductive Sciences* in *The Sources of Science* No. 41, Vols. I-II. Johnson Reprint Corporation. New York and London, 1967, facsimile of the second edition, London, 1847.
- . *History of the Inductive Sciences*, edited by G. Buchdahl and L.L. Laudan, in *The Historical and Philosophical Works of William Whewell* Vol. II-IV. Frank Cass & Co. LTD. London, 1967, facsimile reproducti of the third edition, 1857.
- . *Theory of Scientific Method*, edited by E. Butts. Hacket Publishing Company. Indianapolis, 1989.