

for one term in the middle of an infinite progression as an unparalleled *miracle of arithmetic*, far more real and deeper seated than the one alluded to by Mr Babbage in connection with the discontinuous action of a supposed machine in his ninth Bridgwater Treatise.

p. 660, l. 22. So I found, as a pure matter of observation, that allineation (*alignement*) in ornamental gardening—i.e. the method of putting trees in positions to form a very great number or the greatest number possible of straight rows, of which a few special cases only had been previously considered as detached porismatic problems, forms part of a great connected theory of the pluperfect points on a cubic curve, those points, of which the nine points of inflection and Plücker's twenty-seven points may serve as the lowest instances.

ON THE INCORRECT DESCRIPTION OF KANT'S DOCTRINE OF SPACE
AND TIME COMMON IN ENGLISH WRITERS*.

In the very remarkable contribution by Professor Sylvester (*Nature*, No. 9) this sentence occurs: "It is very common, not to say universal, with English writers, even such authorised ones as Whewell, Lewes, or Herbert Spencer, to refer to Kant's doctrine as affirming space to be a 'form of thought' 'or of the understanding.' This is putting into Kant's mouth (as pointed out to me by Dr C. M. Ingleby) words which he would have been the first to disclaim."

It is not on personal grounds that I wish to rectify the misconception into which Dr Ingleby has betrayed Professor Sylvester. When objections are made to what I have written, it is my habit either silently to correct my error, or silently to disregard the criticism. In the present case I might be perfectly contented to disregard a criticism which any one who even glanced at my exposition of Kant would see to be altogether inexact; but as misapprehensions of Kant are painfully abundant, readers of Kant being few, and those who take his name in vain being many, it may be worth while to stop *this* error from getting into circulation through the channel of *Nature*. Kant assuredly did teach, as Professor Sylvester says, and as I have repeatedly stated, that space is a form of intuition. But there is no discrepancy at all in also saying that he taught space to be a "form of thought," since every student of Kant knows that intuition without thought is mere sensuous *impression*. Kant considered the mind under three aspects, Sensibility, Understanding, and Reason. The *à priori* forms of Sensibility, which rendered Experience possible, were Space and Time: these were forms of thought, conditions of cognition. It was by such forms of thought that he reoccupied the position taken by Leibnitz in defending and amending the doctrine of innate ideas, namely, that knowledge has another source besides sensible experience—the *intellectus ipse*.

While, therefore, any one who spoke of space as a "form of the understanding" would certainly use language which Kant would have disclaimed, Kant himself would have been surprised to hear that space was not held by him as a "form of thought."

GEORGE HENRY LEWES.

January 3.

The following paragraphs, I believe, faithfully render sundry passages of Kant's writings:

"Objects are given to us by means of sense (Sinnlichkeit), which is the sole source of intuitions (Anschauungen); but they are thought by the understanding, from which arise conceptions (Begriffe)." (*Kritik*, p. 55, Hartenstein's edition.)

* From *Nature*, Vol. I. (1869—70). See [p. 655, l. 9].

"The understanding is the faculty of thought. Thought is knowledge by means of conception." (*Ibid.* p. 93.)

"The original consciousness of space is an intuition *à priori*, and not a conception (Begriff)." (*Ibid.* p. 60.)

"Space is nothing else than the form of all the phenomena of the external senses; that is, it is the subjective condition of sense, under which alone external intuition is possible for us." (*Ibid.* p. 61.)

"Our nature is such, that intuition can never be otherwise than sensual (sinnlich); that is, it only contains the modes in which we are affected by objects. On the other hand, the power of thinking the object of sensual intuition, is the understanding. Neither of these faculties is superior to the other. Without sense, no object would be given us, and without understanding none would be thought. Thoughts without contents are empty, intuitions without conceptions (Begriffe) are blind." (*Ibid.* p. 82.)

"Time and space are 'mere forms of sense'" (Formen unserer Sinnlichkeit, *Prolegomena*, p. 33) and "mere forms of intuition." (*Kritik*, p. 76.)

With these passages before one, there can be no doubt that that thorough and acute student of Kant, Dr Ingleby, was perfectly right when he said that Kant would have repudiated the affirmation that "space is a form of thought." For in these sentences, and in many others which might be cited, Kant expressly lays down the doctrine that thought is the work of the understanding, intuition of the sense; and that space, like time, is an intuition. The only "forms of thought" in Kant's sense, are the categories.

T. H. HUXLEY.

January 14.

I do not believe Professor Sylvester has been betrayed, as Mr G. H. Lewes asserts, into any misconception of this matter by me.

When Kant, at the outset, says, "Alles Denken aber muss sich, es sei geradezu oder im Umschweife, mittelst gewisser Merkmale, zuletzt auf Anschauungen...beziehen," it would take the veriest dunderhead not to see that all forms of intuition must be, indirectly at least, forms of thought. I never dreamed of disputing so obvious a position. But I object to the phrase, "forms of thought," as designating Space and Time, on the ground of precision. They are *peculiarly* forms of general Sense, and not forms of Thought *as Thought*. Kant, I believe, eschewed the phrase in that sense, and, for all I see, might for the same reason have disclaimed it.

C. M. INGLEBY.

ILFORD, January 14.

It is not *my* habit "when objections are made to what I have written, silently to correct my error or silently disregard the criticism." If the objections are well founded, I think it due to the cause of truth to make a frank confession of error, and in the opposite case to reply to the objections.

With reference, then, to Mr Lewes's strictures in *Nature's* last number, I beg to say that Dr Ingleby has "betrayed" me into no error. If I have fallen into error, it is with my eyes open, and after satisfying myself by study of Kant, that to speak of Space and Time, whether as forms of understanding, or as forms of thought, is an unauthorised and misleading mode of expression. Space and Time are forms of sensitivity or intuition. The categories of Kant (so essentially in this point differing from those of Aristotle) do not contain Space and Time among them, and are properly called forms of understanding or thought.

To the existence of thought the operation of the understanding is a necessary preliminary.

Sensibility and intuition are antecedent to any such operation.

Can Mr Lewes point to any passage in Kant where Space and Time are designated *forms of thought*? I shall indeed be surprised if he can do so—as much surprised as if Mr Todhunter or Mr Routh, in their Mechanical Treatises, were to treat *energy* and *force* as convertible terms. To such a misuse of the word energy it would be little to the point to urge that *force without energy is a mere potential tendency*. It is just as little to the point in the matter at issue, for Mr Lewes to inform the readers of *Nature* that *intuition without thought is mere sensuous impression*.

Dr Ingleby has rendered, in my opinion, a very great service to the English reading public, by drawing attention to so serious and prevalent an error as that of confounding the categories (the proper forms of thought *as thought*) with Space and Time, the forms of intuition, the sentinels, so to say, who keep watch and ward outside the gates of the Understanding.

J. J. SYLVESTER.

ATHENÆUM CLUB, *January 15*.

Although I do not feel myself called upon to modify in the least what was said in my former letter on this subject, the three letters which appear to-day in answer to it are too important to be left unnoticed.

The case is briefly this: In the *History of Philosophy* I had to expound Kant's doctrine, and to criticise it, not only in itself, but in reference to the great question of the origin of knowledge. In the pages of exposition I *uniformly* speak of Space and Time as forms of Intuition; no language can be plainer. I also mark the distinction between Sensibility and Understanding, as that of Intuition and Thought. After enumerating the Categories, I add, "In those Categories Kant finds the pure forms of the Understanding. They render Thought possible."

But when, ceasing to expound the system, I had to criticise it, and especially to consider it in reference to the great question; there was no longer any need to adhere to a mode of expression which would have been obscure and misleading. I therefore *uniformly* class Space and Time *among the forms of Thought*, connecting them with the doctrine of Necessary Truths and Fundamental Ideas, which, according to the *à priori* school, are furnished ready-made—brought by the Mind as its native dowry, not evolved in it through Experience.

Now the question is, Have I put language into Kant's mouth which he would disclaim, or is such language misleading? That Kant would have said the language was not what he had employed, I freely admit; but that he would have disclaimed it as misrepresenting his meaning, I deny. I was not bound to follow his language when the task of exposition was at an end; but only bound not to translate his opinions into language which would distort them.

In classing Space and Time *among the Forms of Thought*, I classed them *beside the Categories of the Understanding and the Ideas of Reason*, that is, the purely intellectual conditions existing *à priori* in the Mind. The Mind is said by Kant to be endowed with three faculties—Sensibility, Understanding, and Reason. The activity of the Mind is threefold—Intuitive Thought, Conceptive or Discursive Thought, and Regulative Thought. There could not be an equivocal in my using the word Thought in its ordinary philosophical acceptation as expressive of all mental activity whatever, exclusive of mere

sensation ; although Kant assigns a more restricted meaning in his technical use of the word, that is, what we call Logic. And that Kant *meant* nothing opposed to the ordinary interpretation is obvious. It is obvious because, as I said in my former letter, Intuition without Thought is mere sensuous impression. Mr Sylvester demurs to this, so I will show it in a single citation :—"In the transcendental Aesthetic," says Kant, "we will first isolate Sensibility by separating from it all that the Understanding through its concepts thinks therewith, so that nothing but empirical Intuition remains. Secondly, we will lop off from this empirical Intuition everything relating to sensation (*Empfindung*) ; so that thereby nothing will remain but pure Intuition and the mere form of phenomena, which is the one thing that Sensibility can furnish *à priori*. By this investigation it will appear that there are two pure forms of sensuous Intuition which are *à priori* principles of Cognition." (*Kritik*, § 1, ed. Hartenstein, p. 61.)

Mr Sylvester correctly says, that Intuition and Thought are not convertible terms. But he is incorrect in assuming that they differ as potential and actual ; they differ as species and genus ; therefore, whatever is a form of Intuition, though not a form of Logic, must be a form of Thought ; unless intuitive Thought be denied altogether. How little Kant denied it is evident in every section of his work. In asserting that Space and Time as Intuitions belong to the subjective constitution of the Mind—*subjectiven Beschaffenheit unseres Gemüths* (p. 62)—he expresses this ; but it is unequivocally expressed in the following definition :—"A perception, when it refers solely to the subject, as a modification of its states, is *sensation*, an objective perception is *cognition* : *this is either Intuition or Concept*, 'intuitus vel conceptus.'" (*Kritik*, p. 294.) Is not thought implied in cognition ? Again :—"The proposition 'I think' is an undetermined empirical Intuition, that is, Perception ; consequently, it proves that Sensation, which belongs to Sensibility, must lie at the basis of this proposition....I do not mean thereby that the 'I' in the 'I think' is an empirical representation (*Vorstellung*), on the contrary, it is *purely intellectual*, because it belongs to thought in general. But without some empirical representation which would give Thought its material there could be no such act of Thought as the 'I think'" (p. 324, note).

"Man is always thinking," says Hegel, "even when he has nothing but intuitions"—*denkend ist der Mensch immer auch wenn er nur anschaut.* (*Encyclop.* § 24.)

If, because Kant has a restricted use of the term Thought, all who venture on the more ordinary use are said to misrepresent his philosophical meaning, I must call upon those who criticise this laxity to refrain henceforth from speaking of Reason as Thought, since Kant no less excluded Reason from the province of the Understanding. If "the only forms of thought, in Kant's sense, are the Categories," this sweeps away Reason on the one side, as it sweeps away Sensibility on the other ; and Ideas are not more correctly named Thoughts than Intuitions are. Kant, it is true, speaks of the concepts of Reason, and defines an Idea to be a "*Vernunftbegriff*" (page 294) ; but Kant, equally and in a hundred places, speaks of the "concept of Space" (*Begriff des Raumes*). The truth is, as already intimated, that in spite of his technical restriction of Thought to the formation of concepts, he recognised intuitive and regulative Thought no less than discursive Thought ; nor would his system have had any coherence without such a recognition. Why does he call his work the *Critik of Pure Reason*, unless he intended to display the common intellectual ground of Sensibility, Understanding, and Reason ? and does not the word Thought, in ordinary philosophical language mean this activity of the Intellect ? When, by Sir W. Hamilton, Dr Whewell, Mr Spencer, and myself, the phrase Forms of Thought is used, does not every reader understand it as meaning Forms of intellectual activity ?

In conclusion, I affirm that in the ordinary acceptation of the term Thought—the activity of the Mind—Space and Time as forms of Intuition are forms of Thought, conditions of mental action ; and to suppose that because Kant's language is different, his meaning is misrepresented by classing forms of Intuition among the forms of Thought is to misunderstand Kant's doctrine and its purpose.

GEORGE HENRY LEWES.

January 22.

Dr Ingleby, I should think, is quite entitled to say not only that Kant might, but that he would, have disclaimed the phrase Form of Thought as applied to Space or Time taken simply. The remark of Mr Lewes, that "intuition without thought is mere sensuous impression,"—or, as it might have been put, that phenomena of sense (constituted such in the forms of Space and Time) must further be thought under Categories of Understanding, before they can be said to be known or to become intellectual experience—cannot be a sufficient reason for making a Form of Thought proper out of a Form of Intuition.

There is, nevertheless (and Mr Lewes does not fail to suggest it), a sense in which, when taken along with the Categories of the Understanding, and with or without the Ideas of the Reason, the Forms of Intuition may be spoken of as Forms of Thought : Thought being understood, with the same extension that Kant himself gives to Reason in the title (not the body) of his work, as equivalent to faculty of Knowledge in general. It is in this sense that Kant calls all the forms alike, *à priori* principles of Knowledge ; and the ambiguity of the word Thought is so well recognised that the English writers arraigned by Prof. Sylvester take no great liberty, when for their purpose, which commonly is the discussion of the general question as to the origin of Knowledge, they talk generally of Kant's "Forms of Thought." If, indeed, any of them ever speaks of Space as a "form of the Understanding," which was part of the original charge, the case is very different ; Kant being so careful with his *Verstand*. But Mr Lewes, at least, would never be caught speaking thus, even though his main reason for merging Intuition in Thought might seem to justify this also.

G. CROOM ROBERTSON.

UNIVERSITY COLLEGE, January 22.

You will perhaps permit me to make a remark on a controversy at present going on in your columns. There has seldom, I believe, been a grosser or more misleading perversion of the Critical Philosophy than ascribing to Kant the view that Space and Time are in any meaning of the terms "forms of thought." One of his chief grounds of complaint against Leibnitz is, that the latter "intellectualised these forms of the sensibility" (Meiklejohn's translation of the *Critick*, p. 198) : and lest the import of this assertion should be mistaken, he explicitly tells us that "Space and Time are not merely forms of sensuous intuition, but intuitions themselves" (Meiklejohn's trans., p. 98) : that is, *sensuous* intuitions, as he has been just before asserting that all human intuitions must be. It is precisely on this distinction of pure sensibility and pure thought that Kant founds the possibility of Mathematics—a science which could never be derived from a mere analysis of the concepts employed, but only from the construction of them in intuition. He ridicules, for example, the idea of attempting to deduce the proposition, "Two right lines cannot enclose a space," from the mere concepts or notions of a straight line and the number two. "All your endeavours," says he, "are in vain, and you find yourself compelled to have recourse to intuition, as in fact Geometry always does."

(Meiklejohn, p. 39 : see also his long contrast of Mathematical and dogmatical methods in the beginning of the *Methodology*.) And not only is Kant's Mathematical theory founded on this distinction, but his Physical theory also, since it is only by means of pure intuition that he connects pure thought with sensations (see the *Schematism*, and still more the *General Remark on the System of Principles*, Meiklejohn, pp. 174—7) ; and when he fails to make out this connection he regards the Ideas of Pure Reason as possessed of no objective validity (Transcendental Dialectic). In the first edition of the *Critick* he went still further, and in his remarks on the Second Paralogism of Rational Psychology he speaks of "that something which lies at the basis of external phenomena, which so affects our sense as to give it the representations of space, matter, form, &c." And while he abbreviated his discussion in the second edition, he tells us in his preface that he found nothing to alter in the views put forward in the previous one.

I might quote whole pages of the *Critick* in proof of these views, but I ought rather to apologise for writing so much after the letters which you have already published. I believe the mistakes as to Kant's doctrine of Space and Time, his refutation of Idealism, and his discussion of the Antinomies of the Pure Reason, are almost without a parallel in the History of Philosophy.

W. H. STANLEY MONCK.

TRINITY COLLEGE, *January 22.*

In answer to my invitation, Mr Lewes now "freely admits that Kant nowhere speaks of Space and Time as 'Forms of Thought,' but still contends that "Kant would not have disclaimed such language, as misrepresenting his meaning." As well might he argue that although Euclid never uses the word *epipedon* (our English word *plane* or *plain*), to signify a curved surface (*ἐπιφάνεια*), he would not have remonstrated against the use of the term *cylindrical epipedon* or conical *epipedon*, to denote the surface of a cylinder or cone, in a professed exposition or criticism of his Elements of Geometry, because in common life we speak of rough or undulating plains, or because a plane admits of being bent into the shape of a cylindrical or conical surface. I think the ladies who are getting up their Planes and Solids at St George's Hall would be of a different opinion from Mr Lewes in this matter, and with good reason on their side.

Mr Lewes, reiterating a statement contained in his previous letter, goes out of his way to affirm that he "uniformly speaks of Space and Time as forms of Intuition in his pages of exposition" of Kant's doctrine in his *History of Philosophy*. Were the fact so, it would not in any material degree excuse the inaccuracy of subsequently styling them "Forms of Thought"; and, moreover, the real point at issue is not Mr Lewes's general accuracy or inaccuracy, but whether a mode of speech which he, along with others, employs, is right in itself and ought to be persisted in.

However, as Mr Lewes has thought fit to put in a sort of plea in mitigation of former wrong-doing, I have taken the trouble of looking through his *exposition* and *criticism* of Kant in his *History* (ed. 1867) and in no single instance have I come upon the phrase *forms of intuition* applied to Space and Time, either in the one or the other ; although he states he has *uniformly spoken of them* as such in the former. I have marked the word *intuitions* as occurring once, and *forms of sensibility* several times, but *forms of intuition* never. If *form of sensibility* is as good to use as *form of intuition*, *form of understanding* ought to be as good as *form of thought* ; but Mr Lewes owns that the former is indefensible, whilst he avers that the latter is correct. If Mr Lewes has ever called Space and Time *forms of intuition* in the *History*, it will be easy for him to set me right by quoting the passage where the phrase occurs, although that circumstance would not in any

degree better his own position, and still less excuse the assertion of his *uniform* use of the term.

If Mr Lewes cannot quote correctly from his own writings, it will surprise nobody that he misquotes the language of an opponent. He repeats, "Intuition without thought is mere sensuous impression," and adds, "Mr Sylvester demurs to this." My words are (*Nature*, Jan. 13, 1870): "To such a misuse of the word energy it would be little to the point to urge that *force without energy is mere potential tendency*. It is just as little to the point in the matter at issue for Mr Lewes to inform the readers of *Nature* that *intuition without thought is mere sensuous impression*." So that, according to Mr Lewes, to say that a proposition is *little to the point* is *demurring to its truth*.

I should not hesitate to say if some amiable youth wished to entertain his partner in a quadrille with agreeable conversation, that it would be *little to the point*, according to the German proverb, to regale her with such information as how

"Long are the days of summer-tide,
And tall the towers of Strasburg's fane,"

but should be surprised to have it imputed to me on that account that I demurred to the proposition of the length of the days in summer, or the height of Strasburg's towers.

In another passage, Mr Lewes gives me credit for "saying correctly that Intuition and Thought are not convertible terms"—a platitude I never dreamed of giving utterance to; but that I am "incorrect in assuming that they differ as potential and actual"—words which, or the like of which, in any sort or sense, never flowed from my pen. Surely this is not fair controversy, to misquote the words and allegations of an opponent. It seems to me too much like fighting with poisoned weapons. I decline to continue the contest on such terms; and, passing over Mr Lewes's very odd statement about *species* and *genus* with reference to Intuition and Thought, shall conclude with expressing my surprise at his and Mr G. C. Robertson's confident assumption that Kant uses in the title of his book *pure reason* in a far wider sense than in the body of his work, simply because to arrive at the Pure Reason he has to *go through* the Critick of the Sensibility and of the Understanding. If in a history of the Reign of Queen Victoria the author should find it expedient to go back to the times of the Norman and Saxon conquests, would it be right to infer therefrom that he used in his title-page the name Victoria in a generalised sense, to include not only her most Gracious Majesty, but also the Tanner's daughter and Princess Rowena?

Perhaps by this time many of the Naturalistic readers of the journal who regard the human intelligence as forming no part of the scheme of Nature, wish Space at the bottom of the sea; but the more the subject is canvassed, and the greater the number of English authorities brought forward to back up Mr Lewes in wresting the words of Kant from their proper scientific signification, the higher meed of praise seems to me to accrue to Dr Ingleby for stemming the tide of depravation, and banishing, as I feel confident this discussion will have the effect of doing, from the realm of English would-be philosophy, such a loose and incautious way of talking as that of giving to Space and Time the designation which the Master has appropriated to the categories of his system, and to them alone.

J. J. SYLVESTER.

P.S.—I should be doing injustice to the very sincere sentiments of respect I entertain for Mr Lewes's varied and brilliant attainments (which constitute him a kind of link between the material and spiritual sides of Nature), and of gratitude for the pleasure the perusal of his *History of Philosophy* has afforded me, were I to part company with

him without disclaiming all acrimony of feeling, if perchance any too strident tones should have seemed to mingle with my enforced reply. In naming him in the original offending footnote (the fountain of these tears), my purpose was simply to emphasise the necessity of protesting against what seemed to me an unsound form of words, *apropos* of Kant, which went on receiving countenance from such and so eminent writers as himself and the others named; and I should be false to my own instincts did I not at heart admire the courageous spirit with which, almost unaided and alone (like a good, I meant to say valiant knight of old), he has done his best to defend his position and maintain his ground against all oppugners.

J. J. S.

I am quite willing to leave the readers of *Nature* and the students of Kant to decide on the propriety, in English philosophical discourse, of calling Space and Time "forms of Thought," the more so as Sir W. Hamilton—a great stickler for philosophic precision—uses the term in that sense and would have been surprised to hear that he had misrepresented Kant in so doing. My opponents persist in limiting the term Thought to the restricted meaning given to it in Kant's terminology, which, in English, is restricting it to Conception or Judgment: on this ground they might deny that Imagination or Recollection could be properly spoken of as Thought. Throughout I have accepted Thought as equivalent to mental activity in general and the "forms of Thought" as the conditions of such activity. The "forms of Thought" are the forms which the thinking principle (Kant's *pure* Reason) brings with it, antecedent to all experience. The thinking principle acts through three distinct faculties: Sensibility (Intuition), Understanding (Conception), and Reason (Ratiocination): to suppose Thought absent from Intuition, is to reduce Intuition to mere sensuous impression. Therefore, whatever is a form of Intuition must be a form of Thought.

The following passage from Mr Mahaffy's valuable translation of Kuno Fischer's work on Kant, may here be useful: "Sensibility and understanding are cognitive faculties differing not in degree but in kind, and form the *two original faculties of the human mind*"... The general problem of a Critick of the Reason "is subdivided into two particular objects, as human Reason is into two particular faculties of knowledge. The first object is the investigation of the sensibility; the second, that of the understanding. The first question is, How is rational knowledge possible through sensibility? The second question, How is the same knowledge possible through the understanding?" (pp. 4, 5.)

Those who maintain that it is improper to speak of Space and Time as forms of Thought, must either maintain that Kant held Sensibility *not* to be a faculty of the Mind (thinking principle); or that the term Thought is *not*, in English discourse, a correct expression for the activity of the thinking principle. I believe that the student will agree with me in saying that, although Kant restricted the term Thought to what we call Conception or Judgment, he understood by the activity of the mental faculties (Pure Reason) what we understand by Thought.

It is not, however, to continue this discussion that I again trespass on your space; but to reply to the personal part of Mr Sylvester's letter. He charges me with misquoting myself and with misquoting him. I said that, in my exposition, Space and Time were uniformly spoken of as forms of Intuition and I say so still. Mr Sylvester has taken the trouble of reading that exposition without taking the trouble of understanding it; he declares that he "has marked the word intuition as occurring once and forms of sensibility several times; but forms of intuition never." His *carefulness* may be estimated by the fact that the word intuition occurs *four* times on the two pages: his *comprehension*

by the fact that it is perfectly indifferent whether Sensibility or Intuition be the term employed, since sensibility is the faculty and Intuition the action of that faculty. Mr Sylvester, not understanding this, says, "If form of sensibility is as good to use as form of intuition, form of understanding ought to be as good as form of thought; but Mr Lewes owns that the former is indefensible, whilst he avers that the latter is correct." Considering that this passage occurs in a letter which charges me with unfair misquotation, it is curious. So far from owning that the former is "indefensible," it is what I declare to be true; and, with regard to the latter, though I do think a form of Understanding is a form of Thought, my statement was altogether *away* from it, namely, that Space and Time as forms of Sensibility, would be incorrectly spoken of as forms of the Understanding.

With regard to the alleged misquotation of his own words, which he characterises as unfair and as "too much like fighting with poisoned weapons," it was a charge which both astonished and pained me. There are few things for which I have a bitterer contempt than taking such unfair advantages of an adversary. I beg to apologise to Professor Sylvester for any misrepresentation which, unintentionally, I may have been guilty of. But, in accepting his denial of the construction I placed upon his language, I must still say that, after re-reading his letter I am at a loss to see what other construction it admits of, that has any bearing on the dispute, and that he has not expressed his meaning with sufficient clearness. Intuition and Thought are there compared with Force and Energy as terms "not convertible"; Force is detached from Energy as potential from actual, and Intuition without Thought is made to hold an analogous position. Here is the passage; let the reader judge:

"Can Mr Lewes point to any passage in Kant where Space and Time are designated *forms of thought*? I shall indeed be surprised if he can do so—as much surprised as if Mr Todhunter or Mr Routh in their Mechanical Treatises were to treat *energy* and *force* as convertible terms. To such a misuse of the word energy it would be little to the point to urge that *force without energy is a mere potential tendency*. It is just as little to the point, in the matter at issue, for Mr Lewes to inform the readers of *Nature* that *intuition without thought is mere sensuous impression*."

Is it to use "poisoned weapons" to interpret this as assuming that Intuition and Thought differ as potential and actual? I repeat that, since Mr Sylvester disclaims the interpretation, my only course is to apologise for it; but, after his own misinterpretations of me, he will not, I hope, persist in attributing mine to a desire to take an unfair advantage. If I make no reply to the other points raised in the various letters it is in order not to prolong the discussion.

GEORGE HENRY LEWES.

I do not know whether Mr Sylvester and Dr Ingleby will be satisfied with Mr Lewes' letter in yours of the 27th. I am not, and I think, in defending his former mistake, Mr Lewes has fallen into additional errors.

It is undoubtedly fair to translate an author into your own language before criticising him, provided you found no criticism on the language that you have put into his mouth. But this I think Mr Lewes has done. He accuses Kant of inconsistency in speaking of pure *à priori* cognitions, when, on his own system, pure thought only supplies one element to these cognitions, the other being derived from sense or intuition. Now (not to insist here that Kant constantly uses the term cognition in a wider sense than that which Mr Lewes insists on fastening upon him), this criticism is evidently invalidated by the simple remark that Kant admits pure intuitions as well as pure concepts, and explains the

nature of mathematics, as a system of *à priori* cognitions, by the fact that its object-matter consists of nothing but pure intuitions.

Mr Lewes now informs us that Kant's Intuition and Thought "differ as species and genus." According to Kant they differ in kind; and Leibnitz was as wrong in making sensibility a species of thought as Locke was in making Thought a species of sensibility. Space and Time, Mr Lewes adds, are forms of "mental activity" and, therefore, are properly termed "forms of Thought," in the meaning of the latter term which is usually current in this country. If they were forms of mental activity they would be forms of Thought, according to Kant, likewise; for the criterion by which Kant distinguishes between Intuition and Thought (under which term he includes both the understanding proper and the reason proper) is that, in the former, the mind is passive (receptive) while, in the latter, it is spontaneously active; and it is precisely on this ground—the passive reception of them by the mind—that he refers Space and Time to Sensibility rather than Thought. This is repeatedly brought out in the Transcendental Deduction of the Categories. See in particular Sections 11 (Meiklejohn, p. 80) and 18 (Meiklejohn, p. 90).

I think if Mr Lewes will turn to the preface to the first edition of the *Critick*, he will see that the transcendental logic only (and perhaps I might limit it to the transcendental dialectic) grapples *directly* with the problem indicated by the title of the book. The Aesthetic is a preliminary inquiry, which proves afterwards of great use; but is not to be considered as a Critick of Pure Reason in this particular department. His using the term "concept" of space, is certainly confusing; but its explanation, I think, is to be found in a passage in the "Transcendental Exposition" of this "concept" (Meiklejohn, p. 25), where he says, "It must be *originally* intuition, for from a *mere* conception no propositions can be deducted which go out beyond the conception, and this happens in geometry." In the preceding page he similarly qualifies his statement that Space is an intuition. "No conception *as such*," he says, "can be so conceived as if it contained, within itself, an infinite multitude of representations." We may *now* have a concept as well as an intuition of Space and Time; but the intuition was the original form of the idea, and it is to the intuition that we must always have recourse in mathematics when we wish to discover a new truth.

I think, if Mr Lewes will again read over the Transcendental Aesthetic and the parts of the Transcendental Analytic which are closely related to it, he will see that Kant never designates the *original* representations of space and time "concepts," or refers their origin to "pure reason."

W. H. STANLEY MONCK.

TRINITY COLLEGE, DUBLIN, *January 29.*

[To the foregoing correspondence from *Nature*, Prof. Sylvester adds, in *The Laws of Verse*, the following remarks.]

In order that the reader may judge of the correctness of the assertions made by Mr Lewes in his concluding letter, and his general fairness in controversy, I request attention to the annexed *catena* of passages drawn from the above correspondence*.

NO. I. THE AUTHOR.

"It is very common, not to say universal, with English writers, even such authorised" (I meant to say authoritative) "ones as Whewell, Lewes or Herbert Spencer, to refer to Kant's doctrine as affirming space to be 'a form of thought,' or 'of the understanding.' This is putting into Kant's mouth words which he would have been the first to disclaim."

* The words in SMALL CAPITALS are in ordinary print in the original passages.

No. 2. MR G. H. LEWES.

(a) "Kant assuredly did teach as Professor Sylvester says, and as I HAVE REPEATEDLY STATED, THAT SPACE IS A FORM OF INTUITION."

(β) "Every student of Kant knows that intuition without thought is mere sensuous impression."

(γ) "While therefore anyone who spoke of space as 'A FORM OF THE UNDERSTANDING' WOULD CERTAINLY USE LANGUAGE WHICH KANT WOULD HAVE DISCLAIMED, Kant himself would have been surprised to hear that space was not held by him as a form of thought."

[(a) In no one single instance in his fifty pages of exposition and criticism has Mr Lewes ever once stated that *Space is a Form of Intuition.*]

No. 3. THE AUTHOR.

"Can Mr Lewes point to any passage in Kant where Space and Time are designated *forms of thought*? I shall indeed be much surprised if he can do so—as much surprised as if Mr Todhunter or Mr Routh in their mechanical treatises were to treat *energy* and *force* as convertible terms. To such a misuse of the word energy it would be as little to the point to urge that *force without energy is mere potential tendency.* It is just AS LITTLE TO THE POINT in the matter at issue for Mr Lewes to inform the readers of *Nature* that *intuition without thought is mere potential tendency.*"

No. 4. MR G. H. LEWES.

"In the pages of exposition *I uniformly speak of Space and Time as forms of intuition*; no language can be plainer." [In no one single instance does Mr Lewes so speak of Space or Time.]

(a) "Mr Sylvester correctly says that intuition and thought are not convertible terms. (β) But he is incorrect in affirming that they differ as potential and actual."

[These are words put into my mouth by Mr Lewes, which I disclaim as Kant would have disclaimed the words put into his. I nowhere have stated the truism (a). I nowhere have affirmed the absurdity (β).]

No. 5. MR G. CROOM ROBERTSON.

"If indeed any of them ever speaks of space as a 'form of the understanding,' which was part of the original charge, the case is very different, Kant being so careful with his *Verstand.* But Mr Lewes at least would never be caught speaking thus."

No. 6. THE AUTHOR.

(a) "If form of sensibility is as good to use as form of intuition, form of understanding ought to be as good to use as form of thought (β), but Mr Lewes owns that the former is indefensible whilst he avers that the latter is correct."

[In proof of (β) above see (γ) of No. 2. (a) above evidently implies the proportion :

sensibility : intuition :: understanding : thought.

The first and third terms representing faculties, the second and fourth the actions of those faculties respectively.]

"His [the author's] *carefulness* may be estimated by the (*a*) fact that the word intuition occurs four times on THE TWO PAGES; his *comprehension* by the fact that it is perfectly indifferent whether Sensibility or Intuition be the term employed, since Sensibility is the faculty and Intuition the action of that faculty. (*β*) Mr Sylvester not understanding this, says, 'if form of sensibility is as good to use as form of intuition, form of understanding ought to be as good as form of thought; but Mr Lewes owns that the former is indefensible whilst he avers that the latter is correct.' (*γ*) So far from averring that the former" (form of understanding) "is 'indefensible,' it is what I declare to be true."

(*δ*) "I said that in my exposition Space and Time were uniformly spoken of as forms of intuition, and I say so still."

As regards (*a*) what does Mr Lewes mean by the use of the definite article THE? The whole question was about the use of the phrase *forms of intuition*; it was a mere work of surplusage in me to count the number of times that the word *intuition* unsupported occurs; but I did wade through the whole of the criticism and exposition, covering between them 50 pages, namely, 35 of exposition (439—474), 15 of criticism (474—489). I can only account for my inadvertence in this quite immaterial point by supposing that a clerical or typographical error (no one who knows my handwriting would wonder at this) has crept in, and that I probably meant to say, as I ought to have said, not "once" but "more than once" or "often."

(*β*) How, in the face of the proportion so plainly indicated in No. 6, Mr Lewes could have the hardihood to make such an assertion is to me incomprehensible.

(*γ*) This statement is in direct contradiction to what Mr Lewes has stated in his first letter, see No. 2 (*γ*).

(*δ*) This assertion is simply untrue. Mr Lewes has in no one single instance in his *exposition*, or his criticism, 3rd edition, 1867, spoken of "Space and Time as forms of Intuition." As Mr Lewes and myself are here at direct variance on a matter of fact, I undertake to pay £50 to anyone who will discover a single instance where the phrase "form of Intuition" occurs in Mr Lewes's article on Kant, chaps. i., ii., iii., pp. 436—489, 3rd edition, 1867.

So much, and more than I could have wished, in the way of settling the personal issue raised by Mr Lewes. The original and only worthy part of the controversy is one of much greater consequence than the proof or disproof of Mr Lewes's trustworthiness and self-consistency.

The question to be decided was whether a form of language conveying a completely erroneous view of the fundamental principles of Kant's philosophy was to be adhered to by English writers on the ground of prescription and authority. I think that that question, thanks to Dr Ingleby's intrepidity and Mr Lewes's persistency, has now been settled once and for ever.

In looking over Mr Lewes's article on Kant for the third or fourth time, to satisfy myself (in the face of his positive and reiterated asseverations to the contrary) that he had not in any one single instance used the phrase "form of intuition," I came upon the following passage in a footnote:

"Mr Spencer seems to me less happy in his objection that 'if space and time are forms of thought, they can never be thought of; since it is impossible for anything to be at once the *form* of thought and the *matter* of thought.'—*First Principles*, p. 49.

Such an observation proceeding from so able a writer as Mr Herbert Spencer, is a very instructive instance of the serious practical mischief arising from the habit (so obstinately defended by Mr Lewes) of ascribing to Kant the statement of Space and Time being forms of Thought. It is clear that if Mr Spencer had been made aware of the broad line of demarcation in Kant's system between Intuition, the action or product of Sensibility, and Thought the action or product of the Understanding (the two belonging, according to Kant, to entirely different provinces of the mind), he would have seen that his supposed refutation proceeded on a mere misapprehension of Kant's actual utterance and doctrine on the subject. If Mr Spencer will restore to Kant the words really used by him, the sentence will run thus: "if space and time are forms of intuition, they can never be thought of; since it is impossible for anything to be at once the *form* of thought and the *matter* of thought"; and his epigram (for Mr Spencer must have meant it rather as an epigram than as a serious argument) loses all its point. Was it likely *à priori* that Kant (*the* Kant) should have laid himself open to such a *scholar's-mate* at the very outset of his system?

ATHENAEUM CLUB, *July*, 1870.

