

OBSERVATIONS

ON

**M A N,**

His Frame, His Duty,  
And His Expectations.

(1749)

BY

DAVID HARTLEY

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## S E C T. II.

*Of Propositions, and the Nature of Affent.*

P R O P. 86.

*To explain the Nature of Affent and Dissent, and to shew from what Causes they arise.*

**I**T appears from the whole Tenor of the last Section, that Affent and Dissent, whatever their precise and particular Nature may be, must come under the Notion of Ideas, being only those very complex internal Feelings, which adhere by Association to such Clusters of Words as are called *Propositions* in general, or Affirmations and Negations in particular. The same thing is remarked in the 10th Corollary to the 12th Proposition.

But in order to penetrate farther into this difficult and important Point, I will distinguish Affent (and by Consequence its Opposite, Dissent) into two Kinds, Rational and Practical; and define each of these.

Rational Affent then to any Proposition may be defined a Readiness to affirm it to be true, proceeding from a close Association of the Ideas suggested by the Proposition, with the Idea, or internal Feeling, belonging to the Word Truth; or of the Terms of the Proposition with the Word Truth. Rational Dissent is the Opposite to this. This Affent might be called verbal; but as every Person supposes himself always to have sufficient Reason for such Readiness to affirm or deny, I rather chouse to call it Rational.

Practical Affent is a Readiness to act in such manner as the frequent vivid Recurrency of the rational Affent

Affent disposes us to act; and practical Dissent the contrary.

Practical Affent is therefore the natural and necessary Consequence of Rational, when sufficiently impressed. There are, however, two Cautions to be subjoined here; *viz.* First, That some Propositions, mathematical ones for instance, admit only of a rational Affent, the Practical not being applied to them in common Cases. Secondly, That the practical Affent is sometimes generated, and arrives at a high Degree of Strength, without any previous rational Affent, and by Methods that have little or no Connection with it. Yet still it is, in general, much influenced by it, and, conversely, exerts a great Influence upon it. All this will appear more clearly when we come to the Instances.

Let us next inquire into the Causes of rational and practical Affent, beginning with that given to mathematical Conclusions.

Now the Cause that a Person affirms the Truth of the Proposition, *twice two is four*, is the intricate Coincidence of the visible or tangible Idea of Twice two with that of Four, as impressed upon the Mind by various Objects. We see every-where, that Twice two and Four are only different Names for the same Impression. And it is mere Association which appropriates the Word Truth, its Definition, or its internal Feeling, to this Coincidence.

Where the Numbers are so large, that we are not able to form any distinct visible Ideas of them; as when we say, that 12 times 12 is equal to 144; a Coincidence of the Words arising from some Method of reckoning up 12 times 12, so as to conclude with 144, and resembling the Coincidence of Words which attends the just-mentioned Coincidence of Ideas in the simpler numerical Propositions, is the Foundation of our rational Affent. For we often do, and might always verify the simplest numerical Propositions by

reckoning up the Numbers. The Operations of Addition, Subtraction, Multiplication, Division, and Extraction of Roots, with all the most complex ones relating to algebraic Quantities, considered as the Exponents of Numbers, are no more than Methods of producing this Coincidence of Words, founded upon and rising above one another. And it is mere Association again, which appropriates the Word Truth to the Coincidence of the Words, or Symbols, that denote the Numbers.

It is to be remarked, however, that this Coincidence of Words is, by those who look deeper into things, supposed to be a certain Argument, that the visible Ideas of the Numbers under Consideration, as of 12 times 12, and 144, would coincide, as much as the visible Ideas of twice two and four, were they as clear and distinct. And thus the real and absolute Truth is said by such Persons to be as great in complex numerical Propositions, as in the simplest. All this agrees with what Mr. Locke has observed concerning Numbers; viz. That their Names are necessary in order to our obtaining distinct Ideas of them; for by distinct Ideas he must be understood to mean proper Methods of distinguishing them from one another, so as to reason justly upon them. He cannot mean distinct visible Ideas.

In Geometry there is a like Coincidence of Lines, Angles, Spaces, and solid Contents, in order to prove them equal in simple Cases. Afterwards, in complex Cases, we substitute the Terms whereby equal Things are denoted for each other, also the Coincidence of the Terms, for that of the visible Ideas, except in the new Step advanced in the Proposition; and thus get a new Equality, denoted by a new Coincidence of Terms. This resembles the Addition of Unity to any Number, in order to make the next, as of 1 to 20, in order to make 21. We have no distinct visible Idea, either of 20 or 21; but we have of the Differ-

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ence between them, by saying to ourselves a confused Heap of Things supposed or called 20 in Number; and then farther saying 1 to be added to it. By a like Process in Geometry we arrive at the Demonstration of the most complex Propositions.

The Properties of Numbers are applied to Geometry in many Cases, as when we demonstrate a Line or Space to be half or double of any other, or in any other rational Proportion to it.

And as in Arithmetic Words stand for indistinct Ideas, in order to help us to reason upon them as accurately as if they were distinct; also Cyphers for Words, and Letters for Cyphers, both for the same Purpose; so Letters are put for geometrical Quantities also, and the Agreements of the first for those of the last. And thus we see the Foundation upon which the whole Doctrine of Quantity is built; for all Quantity is expounded either by Number or Extension, and their common and sole Exponent is Algebra. The Coincidence of Ideas is the Foundation of the rational Assent in simple Cases; and that of Ideas and Terms together, or of Terms alone, in complex ones. This is upon Supposition that the Quantities under Consideration are to be proved equal. But, if they are to be proved unequal, the Want of Coincidence answers the same Purpose. If they are in any numeral Ratio, this is only the Introduction of a new Coincidence. Thus, if, instead of proving  $A$  to be equal to  $B$ , we are to prove it equal to half  $B$ , the two Parts of  $B$  must coincide with each other, either in Idea or Terms, and  $A$  with one.

And thus it appears, that the Use of Words is necessary for geometrical and algebraical Reasonings, as well as for arithmetical.

We may see also, that Association prevails in every Part of the Processes hitherto described.

But these are not the only Causes of giving rational Assent to mathematical Propositions, as this is defined

above. The Memory of having once examined and assented to each Step of a Demonstration, the Authority of an approved Writer, &c. are sufficient to gain our Assent, though we understand no more than the Import of the Proposition; nay, even though we do not proceed so far as this. Now this is mere Association again; this Memory, Authority, &c. being, innumerable Instances, associated with the before-mentioned Coincidence of Ideas and Terms.

But here a new Circumstance arises. For Memory and Authority are sometimes found to mislead; and this opposite Coincidence of Terms puts the Mind into a State of Doubt, so that sometimes Truth may recur, and unite itself with the Proposition under Consideration, sometimes Falshood, according as the Memory, Authority, &c. in all their peculiar Circumstances, have been associated with Truth or Falshood. However, the Foundation of Assent is still the same. I here describe the Fact only. And yet, since this Fact must always follow from the fixed immutable Laws of our Frame, the Obligation to Assent (whatever be meant by this Phrase) must coincide with the Fact.

And thus a mathematical Proposition, with the rational Assent or Dissent arising in the Mind, as soon as it is presented to it, is nothing more than a Group of Ideas, united by Association, *i. e.* than a very complex Idea, as was affirmed above of Propositions in general. And this Idea is not merely the Sum of the Ideas belonging to the Terms of the Proposition, but also includes the Ideas, or internal Feelings, whatever they be, which belong to Equality, Coincidence, Truth, and, in some Cases, those of Utility, Importance, &c.

For mathematical Propositions are, in some Cases, attended with a practical Assent, in the proper Sense of these Words; as when a Person takes this or that Method of executing a projected Design, in Consequence of some mathematical Proposition assented to from

from his own Examination, or on the Authority of others. Now, that which produces the Train of voluntary Actions, here denoting the practical Assent, is the frequent Recurrency of Ideas of Utility and Importance. These operate according to the Method laid down in the 20th Proposition, *i. e.* by Association; and though the rational Assent be a previous Regulatee, yet the Degree of the practical Assent is proportional to the Vividness of these Ideas; and in most Cases they strengthen the rational Assent by a reflex Operation.

Propositions concerning natural Bodies are of two Kinds, Vulgar and Scientific. Of the first Kind are, *That Milk is white, Gold yellow, that a Dog barks, &c.* These are evidently nothing but forming the present complex Idea belonging to material Objects into a Proposition, or adding some of its common Associates, so as to make it more complex. There is scarce room for Dissent in such Propositions, they being all taken from common Appearances. Or if any Doubt should arise, the Matter must be considered scientifically. The Assent given to these Propositions arises from the Associations of the Terms, as well as of the Ideas denoted by them.

In scientific Propositions concerning natural Bodies a Definition is made, as of Gold, from its Properties, suppose its Colour, and specific Gravity, and another Property or Power joined to them, as a constant or common Associate. Thus Gold is said to be ductile, fixed, or soluble in *Aqua regia*. Now to Persons, who have made the proper Experiments a sufficient Number of times, these Words suggest the Ideas which occur in those Experiments, and, conversely, are suggested by them, in the same manner as the vulgar Propositions above-mentioned suggest and are suggested by common Appearances. But then, if they be scientific Persons, their Readiness to affirm, that Gold is soluble in *Aqua regia* universally, arises

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arises also from the Experiments of others, and from their own and others Observations on the Consistency and Tenor of Nature. They know, that the Colour, and specific Gravity, or almost any two or three remarkable Qualities of any natural Body, infer the rest, being never found without them. This is a general Truth; and as these general Terms are observed to coincide, in fact, in a great Variety of Instances, so they coincide at once in the Imagination, when applied to Gold, or any other natural Body, in particular. The Coincidence of general Terms is also observed to infer that of the particular Cases in many Instances, besides those of natural Bodies; and this unites the Subject and Predicate of the Proposition, *Gold is soluble in Aqua regia*, farther in those who penetrate still deeper into abstract Speculations. And hence we may see, as before, First, That Terms or Words are absolutely necessary to the Art of Reasoning: Secondly, That our Assent is here also, in every Step of the Process, deducible from Association.

The Propositions formed concerning natural Bodies are often attended with a high Degree of practical Assent, arising chiefly from some supposed Utility and Importance, and which is no ways proportional to the foregoing, or other such-like allowed Causes of rational Assent. And in some Cases the practical Assent takes place before the rational. But then, after some time, the rational Assent is generated and cemented most firmly by the Prevalence of the Practical. This Process is particularly observable in the Regards paid to Medicines, *i. e.* in the rational and practical Assent to the Propositions concerning their Virtues.

It is to be observed, that Children, Novices, unlearned Persons, &c. give, in many Cases, a practical Assent upon a single Instance; and that this arises from the first and simplest of the Associations here considered. The Influence of the practical Assent over the rational arises plainly from their being joined together

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ther in so many Cases. The Vividness of the Ideas arising from the supposed Utility, Importance, &c. does also unite the Subject and Predicate sooner and closer, agreeably to what has been observed in the general Account of Association.

The Evidences for past Facts are a Man's own Memory, and the Authority of others. These are the usual Associates of true past Facts, under proper Restrictions; and therefore beget the Readiness to affirm a past Fact to be true, *i. e.* the rational Assent. The Integrity and Knowledge of the Witnesses, being the principal Restriction, or Requisite, in the Accounts of past Facts, become principal Associates to the Assent to them; and the contrary Qualities to Dissent.

If it be asked, How a Narration of an Event, supposed to be certainly true, supposed doubtful, or supposed intirely fictitious, differs in its Effect upon the Mind, in the three Circumstances here alleged, the Words being the same in each, I answer, First, In having the Terms *True, Doubtful, and Fictitious*, with a Variety of usual Associates to these, and the corresponding internal Feelings of Respect, Anxiety, Disslike, &c. connected with them respectively; whence the whole Effects, exerted by each upon the Mind, will differ considerably from one another. Secondly, If the Event be of an interesting Nature, as a great Advantage accruing, the Death of a near Friend, the affecting related Ideas will recur oftener, and, by so recurring agitate the Mind more, in proportion to the supposed Truth of the Event. And it confirms this, that the frequent Recurrency of an interesting Event, supposed doubtful, or even fictitious, does, by degrees, make it appear like a real one, as in Reveries, reading Romances, seeing Plays, &c. This Affection of Mind may be called the practical Assent to past Facts; and it frequently draws after it the rational, as in the other Instances above alleged.

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The Evidence for future Facts is of the same Kind with that for the Propositions concerning natural Bodies, being, like it, taken from Induction and Analogy. This is the Cause of the rational Affent. The Practical depends upon the Recurrency of the Ideas, and the Degree of Agitation produced by them in the Mind. Hence Reflection makes the practical Affent grow for a long time after the Rational is arisen to its Height; or if the Practical arises without the Rational, in any considerable Degree, which is often the Case, it will generate the Rational. Thus the Sanguine are apt to believe and assert what they hope, and the Timorous what they fear.

There are many speculative, abstracted Propositions in Logic, Metaphysics, Ethics, controversial Divinity, &c. the Evidence for which is the Coincidence or Analogy of the abstract Terms, in certain particular Applications of them, or as considered in their grammatical Relations. This causes the rational Affent. As to the practical Affent or Dissent, it arises from the Ideas of Importance, Reverence, Pity, Duty, Ambition, Jealousy, Envy, Self interest, &c. which intermix themselves in these Subjects, and, by doing so, in some Cases add great Strength to the rational Affent; in others, destroy it, and convert it into its Opposite.

And thus it appears, that rational Affent has different Causes in Propositions of different Kinds, and Practical likewise; that the Causes of Rational are also different from those of Practical; that there is, however, a great Affinity, and general Resemblance, in all the Causes; that rational and practical Affent exert a perpetual reciprocal Effect upon one another; and consequently, that the Ideas belonging to Affent and Dissent, and their Equivalents and Relatives, are highly complex ones, unless in the Cases of very simple Propositions, such as mathematical ones. For, besides

besides the Coincidence of Ideas and Terms, they include, in other Cases, Ideas of Utility, Importance, Respect, Disrespect, Ridicule, religious Affections, Hope, Fear, &c. and bear some gross general Proportion to the Vividness of these Ideas.

COR. 1. When a Person says, *Vide meliora proboque, deteriora sequor*; it shews that the rational and practical Affent are at Variance, that they have opposite Causes, and that neither of these has yet destroyed the other.

COR. 2. The rational and practical Faith in religious Matters are excellent Means of begetting each other.

COR. 3. Vicious Men, *i. e.* All Persons who want practical Faith, must be prejudiced against the historical and other rational Evidences in favour of Revealed Religion.

COR. 4. It is impossible any Person should be so sceptical, as not to have the complex Ideas denoted by Affent and Dissent associated with a great Variety of Propositions, in the same manner, as in other Persons; just as he must have the same Ideas in general affixed to the Words of his native Language, as other Men have. A pretended Sceptic is therefore no more than a Person who varies from the common Usage in his Application of a certain Set of Words, *viz.* Truth, Certainty, Affent, Dissent, &c.

COR. 5. As there is a Foundation for Unity amongst Mankind in the Use and Application of Words, so there is for a Unity in the Affent, or complex Ideas belonging to Propositions; and a philosophical Language, or any other Method of bringing about the first Unity, would much conduce to this. A careful Examination of Things, of the World natural, the human Mind, the Scriptures, would conduce much also. But Candor, Simplicity, and a humble Sense of our own Ignorance, which may be called a Religious or Christian Scepticism, is the principal Requisite, and that

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that without which this Part of the Confusion at *Babel* can never be remedied. When Religion has equally and fully absorbed different Persons, so that God is, in respect of them, *All in All*, as far as the present Condition of Mortality will permit, their practical Assent must be the same; and therefore their Rational cannot differ long or widely.

The Ideas and internal Feelings which arise in the Mind, from Words and Propositions, may be compared to, and illustrated by, those which the Appearances of different Persons excite. Suppose two Persons, *A* and *B*, to go together into a Crowd, and there each of them to see a Variety of Persons whom he knew in different Degrees, as well as many utter Strangers. *A* would not have the same Ideas and Affections raised in him from viewing the several Faces, Dresses, &c. of the Persons in the Crowd, as *B*, partly from his having a different Knowledge of, and Acquaintance with them; partly from different Predilections to approve and disapprove. But let *A* and *B* become equally acquainted with them, and acquire, by Education and Association, the same Predilections of Mind, and then they will at last make the same Judgment of each of the Persons whom they see.

Cor. 6. Religious Controversies concerning abstract Propositions arise generally from the different Degrees of Respect paid to Terms and Phrases, which conduce little or nothing to the Generation of practical Faith, or of Love to God, and Trust in Him through Christ.

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*To deduce Rules for the Ascertainment of Truth, and Advancement of Knowledge, from the mathematical Methods of considering Quantity.*

THIS is done in the Doctrine of Chances, with respect to the Events there considered. And though we seldom have such precise *Data* in mixed Sciences as are there assumed, yet there are two Remarks of very general Use and Application, deducible from the Doctrine of Chances.

Thus, First, If the Evidences brought for any Proposition, Fact, &c. be dependent on each other, so that the First is required to support the second, the second to support the third, &c. *i. e.* if a Failure of any one of the Evidences renders all the rest of no Value, the separate Probability of each Evidence must be very great, in order to make the Proposition credible; and this holds so much the more, as the dependent Evidences are more numerous. For Instance, If the Value of each Evidence be  $\frac{1}{2}$ , and the

Number of Evidences be  $n$ , then will the resulting Probability be  $\frac{1}{2^n}$ . I here suppose absolute Certainty to be denoted by 1; and consequently, that  $a$  can never be less than 1. Now it is evident, that  $\frac{1}{2^n}$  decreases with every Increase both of  $a$  and  $n$ .

Secondly, If the Evidences brought for any Proposition, Fact, &c. be independent on each other, *i. e.* if they be not necessary to support each other, but concur, and can, each of them, when established upon its own proper Evidences, be applied directly to establish the Proposition, Fact, &c. in Question, the Deficiency in the Probability of each must be very great,