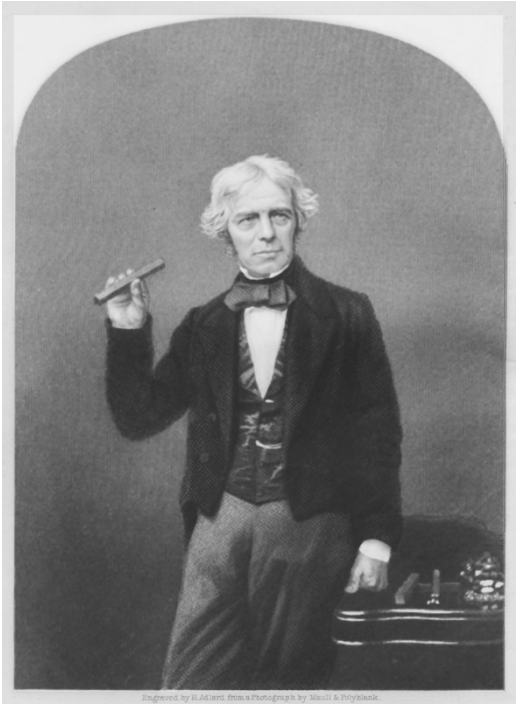
Faraday's 'Advice to a Lecturer'

Books have been written about the art of lecturing, most of them unread by lecturers. It takes years to acquire specialist knowledge and weeks to prepare a good illustrated lecture, so who has the time to practice the skills of presentation? Obviously not a good number I've had the mixed pleasure of listening to. Do I hear heckles of the pot calling the kettle black? To make some amends I've transcribed Michael Faraday's 'Advice to a Lecturer' which, although approaching two centuries old, is still remarkably fresh.



Faraday is most often cited as the consummate researcher, enquiring how nature worked without any ulterior motive of profit or glory. He was outstandingly successful so the glory did come but he left commercialisation to others. In his day he was even better known to a wider public as a consummate lecturer, for 38 years the star turn of the Royal Institution. Faraday himself realised that he was not a natural speaker in the same league as skilled lawyers or politicians. He had to work at it. In his early twenties he went to elocution classes, partly no doubt because in the class-conscious early 19th century his humble background accent would not inspire the confidence of an educated audience expecting to be informed authoritatively on new knowledge and discoveries. He observed the practices of his predecessors and drew up advice, really as much for himself as for lecturers he later invited to the RI. Today we might not use quite the same language or make all of the same points but his advice is well worth reading. Of his famous Friday evening discourses it was said by a contemporary that 'his manner was so natural, that the thought of any art in his lecturing never occurred to anyone'. That, surely, is the impression to aim for. The engraving of Faraday in confident pose comes from the frontispiece of my copy of Bence Jones "The Life and Letters of Faraday" published in 1870. It shows Faraday holding not a cigar but the length of extra dense glass that he used to discover 'the Faraday effect' of a magnetic field on light.

Advice to a Lecturer

The lecturer

A lecturer should appear easy and collected, undaunted and unconcerned, his thoughts about him and his mind clear for the contemplation and description of his subject. His action should be slow, easy and natural, consisting principally in changes of the posture of the body, in order to avoid the air of stiffness or sameness that would be otherwise unavoidable.

His whole behaviour should evince a respect for his audience, and he should in no case forget that he is their presence. No accident that does not interfere with their convenience should disturb his serenity or cause variation in his behaviour; he should never, if possible, turn his

back to them, but should give them full reason to believe that all his powers have been exerted for their pleasure and instruction.

His delivery

The most prominent requisite to a lecturer, though perhaps not really the most important, is a good delivery; for though to all true philosophers science and nature will have charms innumerable in every dress, yet I am sorry to say that the generality of mankind cannot accompany us one short hour unless the path is strewed with flowers.

In order, therefore, to gain the attention of an audience (and what can be more disagreeable than the want of it?), it is necessary to pay some attention to the manner of expression. The utterance should not be rapid and hurried, and consequently unintelligible, but slow and deliberate, conveying ideas with ease from the lecturer and infusing them with clearness and readiness into the minds of the audience.

His diction

A lecturer should endeavour by all means to obtain a facility of utterance and the power of clothing his thoughts and ideas in language smooth and harmonious and at the same time simple and easy. His periods should be round, not too long or unequal; they should be complete and expressive, conveying clearly the whole of the ideas intended to be conveyed. If they are long, or obscure, or incomplete, they give rise to a degree of labour in the minds of the audience which quickly causes lassitude, indifference or even disgust.

On lecture notes

Some lecturers choose to express their thoughts extemporaneously immediately as they occur to the mind, whilst others previously arrange them and draw them forth on paper. Those of the first description are certainly more unengaged and more at liberty to attend to other points of delivery than their pages, but as every person on whom the duty falls is not equally competent for the prompt clothing and utterance of his matter, it becomes necessary that the second method should be resorted to.

This mode, too, has its advantages, inasmuch as more time is allowed for the arrangement of the subject and more attention can be paid to the neatness of expression.

But, although I allow a lecturer to write out his matter, I do not approve of his reading it - at least, not as he would a quotation or extract. He should deliver it in a ready and free manner, referring to his book merely as he would to copious notes, and not confining his tongue to the path there delineated but digress as the circumstances may demand or localities allow.

Duration of the lecture

A lecturer should exert his utmost effort to gain completely the mind and attention of his audience, and irresistibly make them join in his ideas to the end of the subject. He should endeavour to raise their interest at the commencement of the lecture and by a series of imperceptible gradations, unnoticed by the company, keep it alive as long as the subject demands it. No breaks or digressions foreign to the purpose should have a place in the

circumstances of the lecture, and no opportunity should be allowed to the audience in which their minds could wander from the subject.

A flame should be lighted at the commencement and kept alive with unremitting splendour to the end.

For this reason I very much disapprove of breaks in the lecture, and where they can be by any means avoided they on no account should find place. If it is unavoidably necessary to complete the arrangement of some experiment, or for other reasons, leave some experiment in a state of progression, employ as much as possible the minds of the audience during the unoccupied space - but if possible, avoid it. Digressions and wanderings produce more or less the effects of a complete break or delay in the lecture, and should therefore never be allowed except in very peculiar circumstances; they take the audience from the main subject and you then have the labour of bringing them back again (if possible).

For the same reason (namely, that the audience should not grow tired) I disapprove of long lectures. One hour is enough for anyone, and they should not be allowed to exceed that time.

A long lecture justified

The only instance in which I have seen a lecturer succeed in occupying the attention of his audience for a time measurably longer than an hour was at Mr Walker's Orrery in which the subject occupied time to the amount of two or three hours. But here we have peculiar attendant circumstances. From the nature of the place itself (a theatre) we expect to remain there a considerable time and, tho' the subject differs from such as usually draw us there, yet we in part associate the ideas together. Again Mr. Walker very judiciously leaves the audience at intervals to themselves during which time they are entertained by harmony well suited to accompany such a subject. By these interruptions he allows the minds of his company to return to their wonted level and they are in a short time again ready to accompany him into the celestial regions.

Nor fancy, dear Abbott, that I here utter sentiments contrary to those I have just expressed and that I now approve of what I so strongly condemned. I have not spoken without thought nor uttered undigested opinions. 'Tis true I may be wrong. I am but an inexperienced and unfit director but still those ideas I have expressed still appear to me correct.

The lecturer's behaviour

With respect to the action of the lecturer, it is requisite that he have some, though it does not here bear the importance that it does in other branches of oratory; for though I know of no other species of delivery that requires less motion, yet I would by no means have a lecturer glued to the table or screwed to the floor. He must by all means appear as a body distinct and separate from the things around him, and must have some motion apart from that which they possess.

A lecturer falls deeply beneath the dignity of his character when he descends so low as to angle for claps and ask for commendation. Yet I have seen a lecturer even at this point.

I have heard him causelessly condemn his own powers. I have heard him dwell for a length of time on the extreme care and niceness that the experiment he will make requires.

I have heard him hope for indulgence when no indulgence was wanted, and I have heard him declare that the experiment now made cannot fail from its beauty, its correctness, and its application, to gain the approbation of all.

Before, however, I quite leave this part of the subject I would wish to notice a point in some manner connected with it. In lectures, and more particularly experimental ones, it will at times happen that accidents or other incommoding circumstances will take place. On these occasions an apology is sometimes necessary, but not always.

I would wish apologies to be made as seldom as possible, and generally only when the inconvenience extends to the company.

I have several times seen the attention of by far the greater part of an audience called to an error by the apology which followed it.

On experimental demonstrations

An experimental lecturer should attend very carefully to the choice he may make of experiments for the illustration of his subject. They should be important, as they respect the science they are applied to, yet clear and such a may easily be understood.

They should rather approach to simplicity and explain the established principles of the subject than be elaborate and apply to minute phenomena only. I speak here (be it understood) of those lectures delivered to a mixed audience, the nature of which will not admit of their being applied to the explanation of any but the principal parts of the science.

If to a particular audience you dwell on a particular subject, still adhere to the same principle, though perhaps not exactly to the same rule. Let your experiments apply to the subject you elucidate, and do not introduce those that are not to the point.

Neither should too much stress be laid on what I would call small experiments, or rather illustrations. It pleases me well to observe a neat idea enter the head of a lecturer which he will immediately and aptly illustrate or explain by a few motions of his hand - a card, a lamp, a glass of water, or any other things that may be near him; but when he calls your attention in a particular way to a decisive experiment that has entered his mind, clear and important in its application to the subject, and then lets fall a card, I turn with disgust from the lecturer and his experiments.

'Tis well, too, when the lecturer has the ready wit and presence of mind to turn any casual circumstances to an illustration of his subject. Any particular circumstances that has become tabletalk for the town, any local advantages or disadvantages, any trivial circumstance that may arise in company, give great force to the illustrations drawn from them, and please the audience highly as they conceive they perfectly understand them.

On apparatus

Apparatus, therefore, is an essential part of every lecture in which it can be introduced; but to apparatus should be added at every convenient opportunity illustrations that may not perhaps deserve the name of apparatus and experiments and yet may be introduced with considerable

force and effect in proper places. Diagrams and tables too are necessary, or at least add in an eminent degree to the illustration and perfection of a lecture. When an experimental lecture is to be delivered and apparatus is to be exhibited, some kind of order should be preserved in the arrangement of them on the lecture table. Every particular part illustrative of the lecture should be in view; no one thing should hide another from the audience, nor should anything stand in the way of the lecturer.

They should be placed, too, as to produce a kind of uniformity in appearance. No one part should appear naked and the other crowded, unless some particular reason exists and makes it necessary to be so. At the same time, the whole should be arranged as to keep one operation from interfering with another. If the lecture table appears crowded, if the lecturer (hid by his apparatus) is invisible, if things appear crooked, or aside, or unequal, or if some are out of sight without particular reason, the lecturer is considered (and with reason) as an awkward contriver and a bungler.

On diagrams

Diagrams, tho' ever so rough, are often times of important use in a lecture. The facility with which they illustrate ideas and the diversity they produce in circumstances occurant render them highly agreeable to an audience. By diagrams I do not mean drawings (nor do I exclude drawings) but a plain and simple statement in a few lines of what requires many words. A sheet of cartridge paper and a pen or a black board and chalk are often times of great importance. I in general allude to temporary diagrams and would resort to temporary means to obtain them.

A diagram or a table (by which I mean constituent parts or proportions wrote out in a rough enlarged way) should be left in the view of the audience for a short time after the lecturer himself has explained that they may arrange the ideas contained in them in their minds and also refer to them in any other parts of the theory connected with the same subject and (if they choose, as is often the case) also to copy them.

With respect to illustrations simply so called no regular rules can be given on them. They must be in part ex tempore and suggested to the mind of the lecturer by particular circumstances. They may be at one time proper, at another improper, but they should always be striking and to the point.

On the orderly arrangement of material

I must confess that I have always found myself unable to arrange a subject as I go on, as I perceive many others do. Thus, I could not begin a letter to you on the best methods of renovating our correspondence and, proceeding regularly with my subject, consider each part in order and finish, by a proper conclusion, my paper and matter together.

I always find myself obliged, if my argument is of the least importance, to draw up a plan of it on paper and fill in the parts by recalling them to mind, either by association or otherwise. This done, I have a series of major and minor heads in order, and from these I work out my subject matter.

Now this method, unfortunately, though it will do very well for the mere purpose of arrangement and so forth, yet introduces a dryness and stiffness into the style of the piece

composed by it; for the parts come together like bricks, one flat on the other, and though they may fit, yet they have the appearance of too much regularity. It is my wish, if possible, to become acquainted with a method by which I may write my exercise in a more natural and easy progression. I would, if possible, imitate a tree in its progression from roots to a trunk, to branches, twigs, and leaves, where every alteration is made with so much care and effect that though the manner is constantly varied, the effect is precise and determined.

JSR