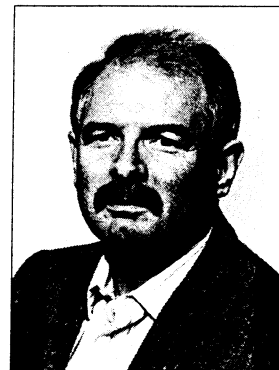


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## *The principal inventor of statistical graphs sought to blackmail. . .*

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**Ian Spence**

# William Playfair: A Daring Worthless Fellow

## Ian Spence and Howard Wainer

In 1816, William Playfair (1759–1823), the principal inventor of statistical graphs, sought to blackmail Lord Archibald Douglas. The latter had been at the focus of the longest legal proceeding in Scottish history, known familiarly as the Douglas Cause. The events precipitating the Cause occurred around the time of Douglas's birth, several years before Playfair's own, and are at the heart of the attempted extortion. The episode illuminates an aspect of Playfair's personality that arguably played a fundamental role in the invention as well as the belated adoption of statistical graphs.

Between 1786 and 1801, Playfair invented the pie chart and bar graph and was also first to apply the line to economic data. Hence, he invented or improved three of the four fundamental types of statistical graphs, the lone exception being the scatterplot, which did not appear until the end of the 19th century. Although an enthusiastic

advocate of his graphical inventions, Playfair found acceptance lacking, and it was not until almost a century later that the value of his work was fully realized. By the early 20th century his graphs had been accepted so completely that the name and contribution of the original inventor was largely forgotten. Today, proponents of statistical graphs generally think them to be so simple and obvious that almost anyone could have invented them, given sufficient need and interest. Indeed, their apparent simplicity accounts for much of their appeal. Thus we give scarce thought to these inventions or their inventor. Familiarity has blunted our sense of the significance of graphs and in consequence diminished the importance of their creator.

Nowadays, with illustration at the core of almost all forms of communication, it is difficult to comprehend that an 18th century academic would have shown no enthusiasm for the use

of pictures to communicate economic data. Readers were accustomed to persuasion by rhetorical means, and illustration in serious writing was viewed with suspicion. It would have been unthinkable to introduce pictorial material to bolster an argument where tabular presentation would have been seen as sufficient and certainly more accurate. Statistical graphs could have been invented and published in the late 18th century only by an individual who possessed a complex of technical skills as well as a disdain for convention—the latter was as necessary as the former. The promulgation of displays for statistical data was expedited by the improvidence and brashness of their inventor even though such unattractive traits probably contributed materially to the widespread and long-lasting indifference to Playfair's innovations.

It may seem curious that the inventor of statistical graphs should have

been involved in an activity so sordid as attempted blackmail, but such behavior may not have been uncharacteristic. William Playfair is rumored to have been involved in many questionable enterprises contrived to enrich, but almost invariably without success. During his early employment it was alleged that he attempted to register patents claimed as his own invention when the ideas belonged to James Keir or others at Boulton & Watt. Neither James Watt nor Matthew Boulton supported him against Keir even though Playfair wrote self-serving letters of justification to both his employers. A few years later in Paris he was suspected of embezzlement from the Franco-American Scioto land company. Subsequently, he claimed to have invented semaphore signaling when he had merely introduced a copy of a German device to England. There were irregularities in the failed partnership with Hartsinck in the Cornhill Security Bank in London in 1797, including an entanglement with the Bank of England that almost led to prosecution. He was, however, subsequently convicted at the King's Bench in 1805 on charges of financial misconduct. In later life he was found guilty of libel in Paris, causing him to flee France.

These few glimpses of the free-wheeling entrepreneur and confident man suggest, but do not positively confirm, that Playfair's ethical standards were altogether different from those of his highly respected brother John, clergyman and professor of mathematics and geology. We lack sufficient particulars to be sure that Playfair's intentions were less than honorable. Simple naiveté, miscalculation, or poor business sense could have been the cause of his misfortunes. We do not want for documentation, however, in the matter of the attempted extortion we shall describe, the details of which have come down to us in Playfair's own words—in an unpublished and relatively inaccessible correspondence still held by the family of the intended victim.

William Playfair tried to broker the sale of some papers—potentially damaging to Lord Douglas—alleged to pro-

vide new information relating to the disputed inheritance of the Douglas estates on the death of the childless Duke of Douglas. The rival Duke of Hamilton contended that the then-young Archibald Douglas, nephew of the old Duke of Douglas, was no blood relative but had been purchased as an infant in Paris. Notwithstanding, the lengthy legal proceedings were finally resolved in favor of Archibald Douglas. As is ultimately clear in the blackmailing correspondence of half a century later, Playfair had no new damaging information but had devised the scheme to extort money. These letters are perhaps the only direct evidence that Playfair was prepared to follow an unscrupulous and felonious course for material gain. We do not, of course, claim that a criminal predisposition was necessary for the invention of statistical graphs, but we do contend that brashness and an unconcern for the reproof of others would have been highly advantageous. The correspondence gives convincing evidence that such traits were part of Playfair's makeup.

### **The Playfair–Douglas Correspondence**

It would be hard to invent a story more strange or romantic than that of the great Douglas Cause, which occupied Scottish and French courts for several years in the mid-1700s before final settlement in the House of Lords. The Cause involved the two most powerful families in Scotland, the Douglasses and the Hamiltons, a consequently huge inheritance, and a mystery concerning an alleged imposture that has not been satisfactorily resolved to this day. The tale concerns two powerful Dukes—the one Archibald Douglas, aging, without heir, and said to be half mad, and the other the Duke of Hamilton, in line to inherit the Douglas titles and estates. But the leading players in the drama were Douglas's sister, Lady Jean, and her husband, Colonel John Stewart, partners in a late-life marriage, contracted in secret. The groom, a swash-

buckling, spendthrift, sixtyish Jacobite adventurer of dubious reputation, was as different from the Presbyterian Lady Jean and as unsuitable a candidate for marriage as could be imagined. Small wonder that the existing rift between brother and sister deepened.

Once married, the couple left for an extended period on the Continent—in 1746 the wounds opened by the second Jacobite rebellion were still raw and the newlyweds would have expected to find Aix-la-Chapelle a more sympathetic milieu. After almost two years and several moves, Lady Jean, then fifty, was delivered of male twins in Paris under mysterious circumstances. After her return a few years later, and after much effort, Lady Jean finally succeeded in persuading her brother to name the elder twin as heir, thus retaining the succession in the Douglas family. Despite much gossip regarding the peculiar circumstances of the accouchement, it was not until the death of Douglas that the issue was forced into the open—the Hamilton faction contended that the children had been purchased in Paris by John Stewart, and therefore the estates should fall to the Duke of Hamilton. Thus began a seven-year legal battle that not only uncovered but also provoked all manner of deceit, fabrication, forgery, and bribery. Though initially successful in the Scottish Court of Session, the Hamiltons lost on appeal to the House of Lords, where the judgment favored Lady Jean Douglas as the natural mother of young Archie, who inherited the Douglas estates. After these tremendous exertions to protect the Douglas line, fate dealt a curious hand. Though young Archie had 12 children, of the eight males none had children and of the four girls only one had a child, a female. Through the marriage of this girl, the estates passed to the Duke of Buccleuch, and in the next generation to the Home family, there being no male heir from the Buccleuch union, and there the line rests with the Douglas-Home family. Our summary is insufficient to do justice to this extraordinary affair and the reader is referred to Fitzgerald (1904) or De La Torre (1952) for extended accounts.

**The Correspondence—  
Scottish Record Office:  
NRA(S) 859 Box 217  
Bundle 2**

The opening note from Playfair (London, September 23, 1816) attempts to kindle Archibald Douglas's interest—

Having had occasion to send to Paris to recover some papers that have been under a sort of sequestration ever since December 1792, some curious papers fell into the hands of the friend who went over for me "relative to the succession of the noble Family of Douglas". It appears they were sought for but kept back when the great cause was pleaded. They can now be obtained on easy terms.

Douglas refused to be drawn, but clearly considered the matter to be of importance; the quick reply (Douglas Castle, September 28) is one evidence of that—

... before I can give any answer to the purport you have in view in writing must beg leave to know from you the subject of the papers alluded to and the compensation expected for them. . . . NB Are the papers still in Paris or have they been brought to England?

Thus encouraged, Playfair sets the bait (October 2). The tone is diffident and ingratiating but urges dispatch lest unscrupulous individuals acquire the papers first—

... the papers concerning which I wrote relate to the time and manner in which a child was obtained from its parents in 1748 by English people in Paris, and some curious enquiries that were made some years afterwards. The details are curious and when coupled with the proceedings then going on are certainly important.

To the second question about compensation, I cannot say exactly but a few hundred pounds certainly not more than Five.

To the third question the answer is, "the Papers are in Paris".

The possessor is aware that they are of value . . . what is to be done must be done without loss of time . . . If your Lordship wishes to do anything . . . I will point out the way to do it.

The five hundred pounds mentioned would be around £35,000 or \$60,000 in late 20th century terms.

Douglas's reply (October 12) called Playfair's bluff—

... From the contents of [your letter] I am satisfied the papers you allude to can be of no consequence to any person and therefore must request you will give yourself no further trouble about them.

Playfair had not received the preceding letter when he wrote (October 14) the following:

The length of time that has elapsed since I wrote the answer desired in your Lordship's letter of the 28th of last month makes me suppose I was wrong in not sending the inclosed paper at first. . . .

With the letter, Playfair enclosed a handwritten paper that contained information regarding the papers said to be in Paris—

The brother in law of Michelle . . . finding Michelle all at once get rich . . . with a view to get money too, he collected information to the following effect.

That the English strangers at his brother in laws house (Lady Jean and her husband) came there without a child. That Mignon the Glass Cutter . . . said he had sold his son to them and that he would be a rich gentleman in England. . . .

All this information led to some good end for the brother in law who got 18,000 livres to say nothing, but he kept memorandums which are very prolix, and are still in the hands of a person at Paris.

On the whole it appears from those papers that Lady Jean did not lye in either in July or August in Paris, but that the child called hers was really young Mignon the son of the Glass Cutter and he was but poorly paid at first but got well paid at last. He got little for selling his son, but a great deal for holding his tongue. These were his own words.

This contains nothing new of substance. Assuming the papers included nothing more, Douglas must have been relieved, although he would not have been eager to see the affair come before the public again.

The preceding letter was followed by another from Playfair (October 16), written after the receipt of Douglas's note disclaiming interest. Playfair takes umbrage. This seems a curious tactic since Douglas had made no direct allegation of impropriety but rather sought to deflect further com-

munication by claiming lack of interest. Perhaps Playfair felt that his initial approach was coming unstuck and that a direct tack was needed, all the while protesting noble motives—

Your Lordship's last letter is in a style so different from the first; and one that so plainly indicates suspicion that I have a plan upon your Lordship that I must show what the business was in which I offered my services and I certainly shall do so.

As to your Lordship's opinion "that the papers are of no value" that cannot weigh much, your Lordship not knowing what they contain; but this I can say that on ordinary understandings such as mine *they leave no doubt of Lady Jean Douglas's never having been delivered as stated—nor of the purchase of the glass grinder's son—nor of the bribery and perjury that afterwards took place [emphasis added]. . . .*

As for the advice to me to let the business alone you put that out of my power by your evident suspicions from which I must and will clear myself—I offered to assist your Lordship if you wished it. The papers are not mine. I did not even ask remuneration yet your Lordship writes in a style, as if I was intending to injure you. You have taken the alarm, when there was not even a colour for it, and probably advice of some one when you did not want it, but I am on the whole not sorry for it as I had made a promise that might have cost some trouble to perform, from which I am now released.

It is a pity that innocent persons with whom your Lordship has formed alliance will be hurt by your very unmerited treatment of me.

At this stage, Lord Douglas wrote (October 22) to his solicitor, David Wemyss,

... as [Playfair] seems exceedingly angry with my reply . . . and holds out a kind of threatening language, I think some legal notice if possible should be taken of it . . . Possibly on inquiry you may be able to find out in Edinburgh what this man's real character and conduct in life is, or has been, and be able to form an opinion. . . . I do not conceive it possible after what has passed that any question can be brought before a court of law upon the subject to which these French papers are stated to relate, or that the old law suit can be renewed, but I certainly do not wish to see advertisements or paragraphs in the newspapers relating to it. I do not mean by this to propose paying for his silence, but to be prepared, in case he should proceed, to repel the attack in the most serious way the law will permit. I need not men-

tion that all this should be kept as secret as possible and that the correspondence should be carefully preserved.

Wemyss replied immediately (Edinburgh, October 24)—

It now appears from Playfair's letters, that his object has been to extort money . . . I have heard of four brothers of the name of Playfair. . . . I have heard of [a] brother in London . . . a person held in no respect. His letters upon this occasion I think show, that like many others in London he wishes to live upon his shifts.

My own humble opinion is that any pretended discoveries upon the part of Playfair can be attended with no legal consequences whatever; and that the threat which his last letter holds out is merely a part of his plan to procure money; but that he will not venture to publish anything upon the subject. . . . You might sue Playfair for the threatening letters he has already written, yet I think it will be most prudent to take no further notice of him . . . as I conceive these letters to tell very much against Playfair, I beg that your Lordship may carefully preserve them. . . . I have learnt . . . that Wm. Playfair is the author of several books . . . that he has abilities but is a daring worthless fellow.

A few weeks later Playfair sent the typeset proof of a two-page prospectus of his commentary on the Douglas Cause, intended for publication by subscription. The manner of the accompanying letter (December 7) is aggrieved but the overall design is threatening—

Your Lordship's last letter left me no other alternative but that of bringing the papers . . . before the Public in vindication of myself . . . I lose no time in sending your Lordship a proof sheet before the Prospectus is finally circulated. I think this is due in candour though your Lordship suspected me without a cause.

The lengthy prospectus was basically a summary of the court cases. The most important sentences therein are the following:

In recapitulating the whole of the evidence and comparing all the circumstances there can remain little doubt on the mind of any reasonable person that the *present Lord Douglas is not the son of Sir John Stewart and Lady Jean Douglas but of Mignon the glass grinder [emphasis added]*. All the evidence to prove the contrary is contaminated; all the evidence and circumstances to establish the fact quite natural.

The prospectus does not indicate that Playfair knew anything damaging. Douglas became convinced that Playfair had no new information but nonetheless was still anxious that the matter not become public. He wrote to Wemyss (December 11)—

You will see by the inclosed that Playfair is still pursuing his object . . . It appears that only two plans can be now adopted by me, the one is to let him publish what he pleases, and take no sort of notice of his malevolence; the other to prosecute him with all the vigour of the law . . . I am inclined to adopt that mode of giving him a reply to his correspondence, for besides feeling it a duty to defend the characters of those who gave me birth, I really feel a decided antipathy to hold any sort of communication with a person of his character.

There being no further surviving correspondence and no record of Playfair publishing anything on the matter, we must assume that the extortionist abandoned his scheme. Playfair doubtless realized that publication would expose him to prosecution, and Wemyss probably counseled Douglas to let the matter die a natural death—why reopen old wounds by going to court?

## Character and the Invention and Promulgation of Graphs

Thanks to his mathematician-scientist brother John—and to his masters, the great Scots engineers Andrew Meikle and James Watt—Playfair had the intellectual and technical skills to invent, produce, and publish statistical graphs. His exposure to commerce in the world's first manufactory under the entrepreneurial Matthew Boulton, James Watt's partner, inspired him to write on economic issues. All of these were essential to the invention, but they were not enough. In serious writing among 18th century academics, there is ample evidence of strong opposition to illustration and although they may not have been averse to the use of charts and diagrams in their laboratories, they were not keen to see these "trifles" in print. Accuracy was one worry, but

there were also philosophical objections—Playfair was cavalier in his attitude to such concerns, his brashness and disregard for the opinions of others overriding all. There was a money-grubbing, opportunistic, and reckless aspect to Playfair's character—the attempted extortion was the work of a brazen and guileful, but also imprudent, individual. These disagreeable attributes, ironically, played midwife to the invention of statistical charts.

Sadly, the dark side of Playfair's character may have hindered acceptance of his graphs for nearly a century. It is not easy to dissociate the inventor from the invention—reputation and acceptance are closely bound, as much today as they were in the 18th century. Although unaware of the extent of Playfair's roguery, Funkhouser (1937) also suggested that Playfair's work may have been slow in taking hold because of the inventor's unconventional opinions or behavior: "In damning the man, they may have damned his work as well. There is no evidence that the English scientists of his day recognized him as the creator of a method of representation and analysis that would become a universal language a century and a half later."

[We are grateful to Sir Edward Playfair, Hugh Playfair, Sheriff Roger Craik, and Fergus Craik and Elsa Marziali for useful comments on previous drafts.

We would also like to thank the staff of the Scottish Record office for their assistance and Caroline Douglass-Home for making available copies of the correspondence of which we provide short extracts—for a full transcription see <http://www.psych.utoronto.ca/~spence/playfair.html>

## References and Further Reading

- De La Torre, L. (1952), *The Heir of Douglas; Being a New Solution to the Old Mystery of the Douglas Cause*, New York: Knopf.
- Fitzgerald, P.H. (1904), *Lady Jean; the Romance of the Great Douglas Cause*, London: Unwin.
- Funkhouser, L. H.G. (1937), "Historical Development of the Graphical Representation of Statistical Data," *Osiris*, 3, 269–404.