

Galtonia candicans

# The Galton Institute

## NEWSLETTER

Issue Number 71

June 2009

### Grants for Conferences and Workshops

The Institute offers grants of up to £1000 towards the cost of conferences and workshops on topics relevant to the Institute's objectives. So far this year the Institute has made three such grants.

The first grant is for a conference *Why Aren't the Social Sciences Darwinian?*, to be held 14-16 May, 2009 at the Leverhulme Centre for Human Evolutionary Studies at Cambridge.

The second, entitled *Fertility declines in the past, present and future*, is to be held from 15-17 July, 2009 in Downing College, Cambridge.

The other conference which we are supporting with a grant is *The Darwinian Renaissance in the Humanities and Social Sciences* which will be held 13 November, 2009 at Queen Mary, University of London. Members of the Galton Institute who wish to attend this conference are being offered a reduced registration fee of £20; information on how to apply for tickets will be on our website in due course.

We hope to include reports on all these

conferences in future issues of the Newsletter. You will find a report on the 2008 British Society for Population Studies Annual Conference, which was held at the University of Manchester last September, in this issue of the Newsletter. The Galton Institute was also able to sponsor this conference under our small grants scheme.

The Institute is, of course, organizing its own conference too. This will be held on 1st October, 2009 and details of the programme can be seen below.

### The Galton Institute Occasional Papers

Those of you who enjoyed reading the first in this third series of booklets, which was entitled *A Guide to Pre-implantation Genetic Diagnosis*, will be interested to know that The Institute, in collaboration with the Progress Educational Trust, is intending to publish the second in this series later this year. This paper will be *An Introduction to Stem Cells* and will cover the nature, types, sources and properties of stem cells, both potential and achieved clinical applications as well as ethical dimensions of both stem cell research and applications.

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**GALTON INSTITUTE CONFERENCE 2009**  
**William Bateson: his Exceptions and Origin of Species Revisited**  
 to be held at The Royal Society  
 Thursday 1st October, 2009

The programme includes the following speakers:

**Professor Donald Forsdyke** (*Bateson's Contributions to Evolutionary Theory*); **Professor Sir Walter Bodmer** (*Quantitative Genetics and Variation*); **Professor Gabriel Dover** (*Epistasis and the Co-evolution of Genetic Networks*); **Professor David Baulcombe**, The Galton Lecture 2009, (*How Nurture Influences Nature*); **Professor Tim Cox** (*Bateson and Medicine*) and **Professor Peter Holland** (*Homeosis and Evolution*).

Admission is free but strictly by ticket, available from The General Secretary

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# Eugenics then and now

by

**David Galton**

(This is the text of a lecture delivered at The Galton Institute Centenary Symposium *What Makes us Human?* in 2007)

## Definitions

Much of the confusion arising from the term eugenics comes from the differing definitions that people use. The etymology derives from the Greek *eu-* good *genesis-* birth. It is the polar opposite of the word euthanasia (*eu-*good, *thanatos-*death). Despite similar past histories of misuse, euthanasia is still in current use with a Euthanasia Bill passing through the House of Lords in June 2003 to legalise voluntary euthanasia and was granted a second reading. A Eugenics Bill has never passed through Parliament but one was submitted in 1930 but did not make the first stage.

Francis Galton coined the term eugenics in the late nineteenth century to mean the use of science to achieve a 'good' birth<sup>1</sup>. Even the use of obstetric forceps to deliver an undamaged foetus could be considered as a eugenic procedure by his definition. The word acquired its opprobrium in the early twentieth century when governments began to interfere with and take control of the reproductive rights of their citizens. This led to a 'slippery slope' to the extremism of the eugenic activities of the Third Reich. From then the term fell into disrepute and synonyms have been coined to replace it: reproductives, assisted conception, assisted reproductive technology (ART) to name a few<sup>2</sup>.

## Methods:

The early methods of eugenics from the nineteenth and twentieth centuries are still in use today. The only one that Francis Galton advocated was pedigree analysis; and this is the starting point for most patients attending a Genetics Clinic. Later methods moved to the position of trying to avoid a 'bad' birth by the use of abortion or sterilization. From the mid-twentieth century onwards a raft of new techniques have been developed to directly obtain a 'favourable' birth. These include artificial insemination (donor), in vitro fertilization, embryo selection by preimplantation genetic diagnosis, and other derivative techniques of egg/sperm/foetal storage and maternal surrogacy. The problem then arose how to put these techniques into practice in the social setting.

One method common in Switzerland is the use of public referenda. They are a central feature of government used in decide moral and life-style choices that cut across party lines. One was recently held there on the use of genetic engineering for food and medical products; and was endorsed by a majority vote.

Political expediency has been used by China to attempt to arrest their population growth (or even to reduce it) by drafting a set of laws that are overtly eugenic. On June 1<sup>st</sup>, 1995 the People's Republic of China passed a bill on 'Maternal and Infant Health Care'. The Bill included measures to 'terminate pregnancy if the foetus is suffering from a genetic disease or any other defect of a serious nature'. The couple must thereafter undertake long-term contraception or agree to undergo sterilization. Further measures are to avoid new births of inferior quality and to defer marriage when birth defects are likely to occur, or undergo compulsory sterilization. Such measures hark back to the American eugenic movement of the 1920s.

Two other procedures to regulate ART in practice are by legislation or the use of ethical codes of practice. Each will be considered in turn.

## Legislation

### (1) Abortion:

Attempts to draft accurate and widely applicable laws to put ART into practice have been fraught with difficulties and have created as many problems as they have resolved. To take two examples of abortion and sterilization. Before the Abortion Act of 1967 it was a criminal offence to procure an abortion in the UK unless the life of the mother was at risk. After the Act the justification for abortion was widened to anything that might impair the physical, mental or social well-being of the mother. However the Act does not extend to Northern Ireland where it remains a criminal offence unless it be to save the life of the mother. So we are left with the anomalous situation that within the same jurisdiction of the UK it is both a criminal offence and not a criminal offence to procure an abortion if the mother's life is not at risk. There is thus a migration of pregnant Irish women to England to obtain a termination who quite naturally feel discriminated against by the Law. The law at a basic level should be consistent across a country if it is to retain the respect of the people. Another issue that is causing a great deal of contention is the upper time-limit that an abortion can be performed: 24 weeks as the law states now, or less than 20 weeks as many people now are campaigning for. It is difficult to issue a blanket legal statement when the individual circumstances can be so variable for the woman.

In the USA the ruling of the Supreme Court of Justice in the case of *Roe v Wade* in 1973 legitimizing abortion on request has led to innumerable problems. It has split the nation into pro-

choice and pro-life factions leading to violent clashes. Since 1993 seven doctors who performed abortion have been murdered by pro-life groups; and during the last two decades more than 2,300 incidents of violence against abortion clinics have been reported including arson and bombings<sup>2</sup>. It would clearly have been better if the case of the pregnancy of Ms. Roe had been kept out of the Courts.

## (2) Sterilization:

The other major eugenic technique to prevent unfavourable births is by sterilization. The first sterilization Laws were passed in Indiana in 1907, and by 1917 such Laws had been enacted in fifteen more states. They were applied to mental defects, to the feeble-minded and other socially inadequate persons. It came to a head in 1924 when the case of *Buck v Bell* came before the United States Supreme court. This concerned the cases of Emma Buck, her daughter Carrie and granddaughter Vivian who were all pronounced to be mental defects. Justice Holmes pronounced his famous verdict that 'three generations of imbeciles are enough'; and Carrie and sister Doris were duly sterilized. This decision legitimised the USA sterilization laws and by 1935, for example, more than 10,000 women had been sterilized in California. Other countries followed suit including Belgium, France, Germany and Sweden<sup>3</sup>. It also set an example for the Nazis to justify their sterilization (and euthanasia) programmes in the name of eugenics leading to the extensive extermination camps of the Third Reich. The term 'eugenics' has never recovered from its association with these horrendous acts.

## Ethical Codes of Practice

An alternative to legislation is to use ethical codes of practice. They differ from legal codes in having greater flexi-

bility for application to individuals on a case-by-case basis and their ability to change more promptly as new techniques or situations arise. They need not apply uniformly across the whole population, they better fit multi-cultural societies, and are less likely to produce faction. Ethics are more a matter of personal choice of moral rules rather than laws that are rigidly imposed from above.

Ethical codes are often adopted by professional bodies (such as the British Medical Association or General Medical Council in the UK) to act as guide for their practitioners. The codes usually include such terms as beneficence (or no harm to others), autonomy (or due rights for others with no deception or coercion); and equity or fairness. Other ethical principles are derived from the various declarations of Universal Human Rights published since the first one in 1948 after the end of World War II to include rights to privacy, rights to informed consent for any procedures<sup>4, 5</sup>.

When ethics and law clash it is unfortunate that the former has to give way. A good example of this is the dilemma of the 'saviour sibling' in the Hasmi and Whitaker families<sup>6</sup>. Both families wanted to conceive a child by preimplantation genetic diagnosis (PGD)<sup>7</sup> to provide a perfect tissue match for a bone marrow transplant to their son who suffered a life-threatening anaemia. In the case of the Hasmi family it was for a son with  $\beta$ -thalassaemia; with the Whitaker family it was for a son with Diamond-Blackfan anaemia. The Hasmi request was accepted by the statutory body, the Human Fertilization and Embryology Authority (HFEA); the Whitaker request was rejected. The rejection was based on the facts that the genetics of Diamond-Blackfan anaemia are poorly understood (there is no genetic marker for the disease) and it was considered inappropriate to expose a healthy embryo to the risks of PGD (that appear to be minimal) for the sake of a sick sibling. It was using

the embryo as a means-to-an-end for providing tissue. In the case of  $\beta$ -thalassaemia the HFEA considered it legitimate to use PGD to exclude an embryo with the disease mutation and at the same time select an embryo that was a perfect tissue match for the sick brother to effect his cure. In the case of the Whitaker family if the elder son needed a renal transplant and it was within the mother's ethical compass, she could authorize the surgical transplant from a younger child without contravening the law. But because her 'child' is at a foetal stage she appears to have no such autonomy. There are numerous other examples where legislation appears to make no provision for special cases that had not been anticipated when the law was formulated (e.g. the case of *Blood v HFEA*<sup>8</sup> on the issue of posthumous birth, or the case of *Evans v Johnston* for the use of stored foetuses).

## Conclusions

Numerous factors will make it difficult to develop practical and effective legislation for the regulation of the new 'eugenic' techniques<sup>9</sup>. These include:

1. The rapid pace of genetic discoveries and the new technologies evolving from them.
2. A diversity of opinions for the applications of the new technologies in a multicultural society.
3. The paramount importance of preserving basic freedoms of scientific research and communication if too many restrictions are to be imposed by statutory bodies.
4. the evolving social norms of society regarding the use of these techniques.

Although in the past legal codes have been devised to act prospectively under the present circumstances of a fast moving

field a more flexible, responsive and retro-active regulatory model may be more appropriate as provided by the ethical codes of practice of professional bodies.

## References:

1. Kevles D.J. *In the name of eugenics*. Cambridge, Mass: Harvard Press 1995.
2. Galton D.J. *Eugenics: the future of human life in the 21<sup>st</sup>. Century*. Publ. Abacus, London 2001.

3. Armstrong C. Thousands of women sterilized in Sweden without consent. *Brit. Med. J.* 1997; 315: 563.
4. *Convention on Human Rights and Biomedicine*. European Treaty Series 164, Oviedo 1997. Publ. Edition du Conseil de l'Europe.
5. *Convention on the Rights of the Child*. Publ. Editions du Conseil de l'Europe 1989.
6. *Saviour sibling babies get green light*. *New Scientist* 13:28, 2004.
7. *The Ethical Aspects of Prenatal Diagnosis*. European Commission of Advisors on the Ethical Implications

of Biotechnology, Brussels 1996.

8. Editorial: *A role model of rigidity* *Lancet* 348: 1253-1254, 1996.
9. Galton D. J., O'Donovan K. *Legislating for the New Predictive Genetics*. *Human Reproduction and Genetic Ethics* 6: 39-48 2000.

**David Galton** is Emeritus Professor at the Wolfson Institute of Preventive Medicine, St. Bartholomew's Hospital Medical College, EC1M 6 BQ as well as a Trustee of The Galton Institute.

## British Society for Population Studies Annual Conference 2008

The 2008 BPS Conference was held at the University of Manchester from 10-12 September and was again very well attended, with over 190 participants over the two days of the meeting itself. Plenary speakers were Dr. Laurent Toulemon (INED), Professor Massimo Livi Bacci (University of Florence), and Professor Francesco Billari (Istituto di Metodi Quantitativi, Università Bocconi).

Dr Toulemon spoke on *Two-home family situations of children and adults in France and Australia: observation and consequences for describing family patterns*, in a session chaired by Professor Emily Grundy. Multi-residence i.e. usually living in more than one dwelling can lead to problems in censuses and surveys. Children commuting between two parental homes, older adults preparing for retirement, very old or disabled people who move from one child's home to another during the year, couples living apart to-

gether and couples entering or ending a relationship are more likely to be counted more than once. Dr Toulemon's presentation showed results of investigations using French (EU-SILC) and Australian (HILDA) data to:

- estimate the proportion of people living in two or more dwellings
- describe how these situations can be controlled for in order to avoid double-counting and
- describe the consequences of multi-residence on estimates of family situations based on 'routine' surveys or censuses.

Multi-residence was defined based on information on time spent in each dwelling, status of the dwelling (i.e. main household dwelling) and family relationships. Based on the information collected, record level weights were generated to take multiple-counting into account.

The presentation generated great interest and questions included:

- i) Given his findings, did Dr Toulemon think that extra questions should be included in the Census to col-

lect information on potential double counting? Dr Toulemon highlighted the importance of the inclusion of such questions in France but also emphasised that there had to be a balance between providing information needed by Census and survey users and not over burdening respondents. He also mentioned the importance of understanding the reasons parents want to count their children as living with them even if they live in multiple households. It was suggested from the floor that parents claiming benefits for children might be more likely to report them as living with them.

It was also highlighted that the 2011 E&W Census will include a question on second residences.

ii) An additional questioner mentioned that ONS was undertaking research to investigate Census counts in the age group 25-29 by sex and compare them with estimates from other data sources. Could research done to estimate double counting among children help illuminate possible differences seen in counts at older ages such as 25-29? Dr Toulemon emphasised that young men are more likely to be undercounted. Possibly over counting at younger ages might explain part of the undercount at older ages e.g. 25-29.

Professor Livi Bacci, whose session was chaired by Professor Bob Woods discussed *Indian Collapse after European contact: old and new interpretations*. This presentation examined the issue of why the indigenous population of the Latin America declined so rapidly following European contact. Massimo states that this is widely accepted to be due to lack of immunity to diseases spread by European colonists. Contemporary observers though tend to point to a plurality of factors (forced labour, excessive work, economic and social dislocation, wars and conflicts), as well as disease. The presentation reconsidered this historical evidence, taking into account the modes and circumstances of European domination.

Massimo pointed out that estimates of the indigenous population at contact vary widely making it difficult to estimate the size of the 'catastrophe'. The impact of smallpox and other communicable diseases also appears to have varied between countries. The use of the indigenous populations as forced labour, such as in gold mining, was highlighted. This led to displaced populations and the author argued that such uprooting of communities led to reduced fertility and thus impacted upon the ability of local populations to recover from epidemics. Four paradigms were presented, illustrating the various factors that potentially impacted upon the indigenous populations for different parts of Latin America.

The third plenary, from Professor Francesco Billari, chaired by Professor Paul Boyle, discussed *Happiness and fertility*. Francesco explained that current theories behind the low fertility in well-developed countries do not offer a universal explanation. His paper investigated happiness as a key to explain reproductive choices in low

fertility (below replacement rate), high longevity societies.

Francesco described some previous research into happiness. Happiness after marriage or unhappiness after divorce has been extensively studied. Most of the papers found the increase/decrease in happiness was only short term. There has been much less research into the happiness associated with becoming a parent and existing research shows varied conclusions. For example, Kohler et al (2005) studied Danish twins and found a positive effect after the first birth, but no effect after the second birth. Young (2005) looked at age-period cohorts and determinants of happiness by marital status and number of children. Bivariate analysis if this concluded that childless people are less happy, while multivariate analysis showed them to be happier. Earlier research saw having children as a negative effect on happiness. Francesco thought that although this may have been the case in the past, it was important to re-investigate the links between fertility and happiness.

First Francesco argued that in low fertility societies individuals who are happier are more likely to have children. He used data from 26 countries, including the UK on fertility intentions and happiness (European Social Survey). Francesco found that for childless individuals, happiness was correlated with future intent to have a child.

Francesco used harmonised data files from the Generations and Gender survey to confirm his second hypothesis that in relatively higher fertility societies individual perceived happiness influenced future fertility intentions. Francesco used the same survey data to argue that the expected increase in happiness was a significant predictor of fertility

intentions.

Francesco concluded that although he was presenting preliminary findings he hoped that he had shown the importance of looking at happiness as a predictor/explanation for fertility rates in developed countries.

Francesco's talk led to an interesting discussion. One particularly interesting suggestion was for Francesco to look at specific components of happiness (e.g. optimism) and the link with fertility. One of the delegates suggested that it would be difficult to establish child related happiness if the child's birth coincided with a major life event e.g. new job, divorce etc.

As well as the plenary sessions, there was a full programme of submitted papers in simultaneous strand sessions, covering issues of ageing, estimates and projections, families and households, fertility, health and mortality, historical demography, local authorities, census and planning, transnational and subnational migration, posters, religious, cultural and ethnic demography, and reproductive health. A comprehensive report of the entire Conference will be found at the BSPS website at:

<http://www.lse.ac.uk/collections/BSPS/annualConference/2008.htm>

where many of the presentations themselves can also be accessed.

**BSPS** would also like to take this opportunity to again thank **The Galton Institute** for their generous financial support for the Annual Conference. We will be in Brighton in 2009, at the University of Sussex.

## Personality and IQ

By  
Patrick James

Daniel Nettle has produced a very non-aggressive test exposing the current and popular five character facets (extraversion, neurosis, conscientiousness, agreeableness and openness). All of these are sourced by the interactions of neurotransmitters; dopamine, serotonin, nor-adrenalin, oxytocin and related compounds. The author wonders if intelligence, as measured by intelligence tests, might be equally part of this biochemical mix. He used his extended family to this effect.

One hundred and twenty four were tested and, of these, 107 had previously had their Intelligence Quotients measured (S.D.15). They were matched and using the four divisions Nettle uses: high, medium high, medium low and low, a combination of introversion plus openness provided the best “fit”.

Extroversion was measured out of ten in his test so introversion was ten minus the extraversion score. A total combined score would be twenty-five.

Sixty three females and sixty males took part. The results were as follows:-

	<u>Points (Nettle)</u>	<u>Mean IQ</u>	<u>S.D. 15</u>	<u>Numbers tested</u>
<u>High</u>	>17	129.4	6.15	16
<u>Medium High</u>	13-16	125.7	10.9	44
<u>Medium Low</u>	9-11	121.9	12.2	39
<u>Low</u>	<8	112.6	4.2	8
				<u>107</u>

Using the Fisher transformation the correlation coefficient was 0.44 (95% confidence interval 0.103 – 0.507).

As a check C. Robert Cloninger’s test for Novelty Seeking was substituted for Nettle’s extroversion since that too is as good a test for extroversion as any. The results were not as clear cut but the trends were similar:-

<u>NS + Open Score</u>	<u>Mean IQ</u>	<u>S.D. 15</u>	<u>Numbers tested</u>
50+	128.4	8.5	9
40-49	128.1	7.4	23
30-39	121.1	11.3	16
<29	113.3	16.1	9
			<u>57</u>

In each section there is a wide distribution of I.Q. but the impression is that as Nettle’s test scores decrease, it becomes harder to sustain a complex high operation intelligence, just as a reduction in species numbers lowers the survival potential of an environment.

In the past H. J. Eysenk found some association with introversion and if “openness” can be defined as “breadth

of mental association” this is a large part of intelligence.

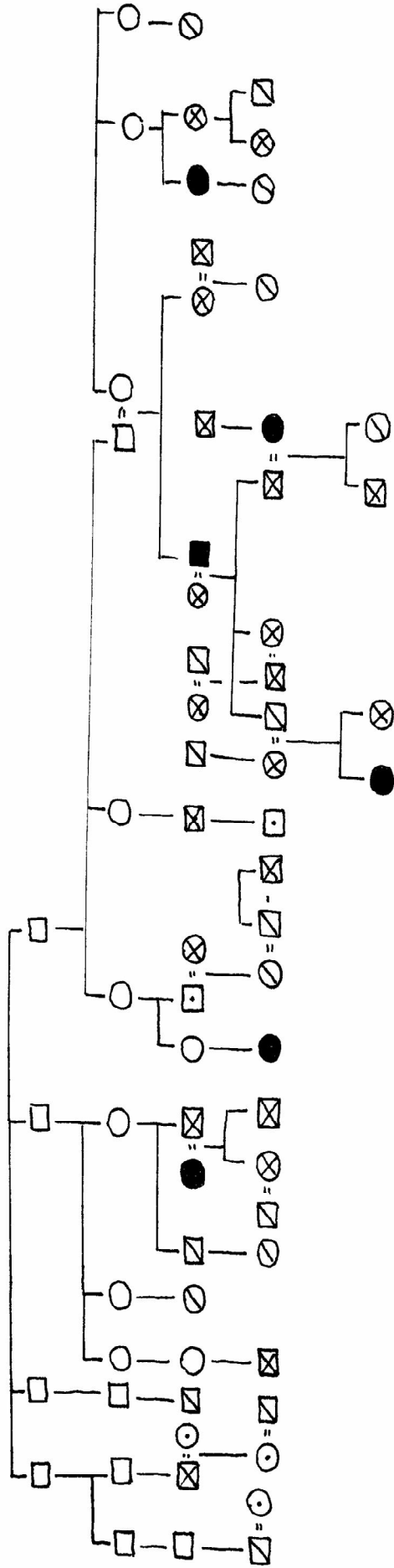
Nettle’s test is a useful rough guide as to ability where measuring that ability might be a sore point.

Patrick James is a Trustee of The Galton Institute.

### References:

- Personality*, Daniel Nettle, Oxford University Press, 2007
- Dimensions of Personality*, H. J. Eysenck, Kegan Paul, 1947
- Group Tests of Intelligence*, P. B. Ballard, University of London, 1957
- A Guide to Intelligence and Personality Testing*, V. Serebriakoff, Parthenon Publishing Group, 1988
- The Essential Difference*, S. Baron-Cohen, Allen Lane, 2003
- Neurogenetics*, R. N. Rosenberg, Raven Press, 1985
- A Guide to Mental Testing*, R. B. Cattell, University of London, 1948
- Human Variation*, R. Travis Osborne et al, Academic Press, 1978
- The Temperament and Character Inventory*, C. Robert Cloninger, Center for Psychobiology of Personality, Washington University, 1994
- Inheritance of Intelligence in a Pembrokeshire Family*, Patrick F. James, The Linnean, Vol.12., No. 2, July 1996.

I + O  
Partial Pedigree



I + O  
 > 17  
 16-13  
 9-12  
 < 8  
 High  
 Medium-high  
 Medium-low  
 Low

## WILLIAM MILO KEYNES

1924 – 2009

**William Milo Keynes** died in Cambridge on 18 February at the age of 84, some months after a serious stroke and fall, from which he had initially been making a remarkable recovery. He had been a member of the Galton Institute (and its predecessor the Eugenics Society) for sixty years, and of its Council for much of the time since 1961. He brought to the affairs of the Institute a persistent determination that it should be sensibly governed and free from controversy. He acted as Librarian for many years, and once as Honorary Secretary, but apart from his Council work his main contribution lay in the numerous publications of the Institute, some of which arose from meetings he had helped to organise.

Milo was born in London on 9 August 1924 and educated at Oundle School and Trinity College, Cambridge, continuing to St Bartholomew's Hospital, London, for his clinical training. He qualified in 1948 and then held a number of surgical appointments at St. Bartholomew's, The London Hospital and at Addenbrooke's in Cambridge, before moving to Oxford's Department of Surgery in 1962 with an Honorary Consultant appointment at the Radcliffe Infirmary. He was a Visiting Fellow in Surgery at Harvard Medical School on three separate occasions. He took his Cambridge M.D. in 1954 and became a Fellow of the Royal College of Surgeons the following year. In 1973 he retired and returned to Cambridge, working part-time as a Clinical Anatomist in the Anatomy School until 1990. He was elected an Honorary Fellow of Darwin College, Cambridge in 2002.

Although Milo published a number of medical papers and chapters in books he will be particularly remembered for writings in his retirement, ranging from numerous papers on the medical history of famous people, including Henry VIII, Napoleon, Mozart, and Beethoven, to his magisterial *The Iconography of Sir Isaac Newton to 1800*, published shortly after his eightieth birthday.

Nor did he lack for famous relatives in whom to take a biographical interest, for he was a scion of two of Cambridge's great families, the Darwins and the Keyneses. Milo was the third of four brothers, the children of Sir Geoffrey Keynes, surgeon and bibliographer, and Margaret Darwin, grand-daughter of

Charles via Sir George Darwin. He was thus the nephew of John Maynard Keynes and, through his great, great, great-grandfather Erasmus Darwin, related to Sir Francis Galton. He edited a series of essays on Maynard Keynes (Cambridge University Press, 1975, reissued 2005) and on Maynard's wife Lydia Lopokova (Weidenfeld and Nicolson, 1983) and contributed substantially to the rehabilitation of Galton as a great scientist through the Institute meeting he organised in 1991 and the subsequent book he edited (*Sir Francis Galton, FRS, The Legacy of his Ideas* 1993). Interestingly, he never published on his great-grandfather Charles's illness.

In 1999 the annual symposium of the Galton Institute was interrupted by some protesters and it began to look as though the future of the annual symposia was in jeopardy. Milo undertook a rescue operation by getting the agreement of the Royal Society of Medicine to host the Institute's 2001 symposium 'A Century of Mendelism in Human Genetics' which he then browbeat me into helping him organize. He bore the brunt of the work as well as the editing of the subsequent volume (CRC Press 2004; ed. by M.Keynes, A.W.F.Edwards and R.Peel). He saw to it that an Appendix reprinted the 1901 translation of Mendel's paper, and himself contributed a fine scholarly introduction to the book. As well as the 1991 and 2001 symposia, Milo had a hand in organising several of the others. As recently as 2007 he collaborated with Steve Jones, then President, to publish *Twelve Galton Lectures* to celebrate the centenary of the Institute.

Milo, unmarried and living alone, was always eager for company, and was not beyond reminding my wife and me that it was our turn to entertain him. We did so on many pleasant occasions, and he would respond with an invitation to sample his home cooking. Sometimes he would march us off to the Cambridge Arts Theatre (founded by his Uncle Maynard) of which he was a fervent supporter.

Milo never boasted of his distinguished ancestry, but of course he was full of family anecdotes of great interest, which he would tell in a way which made the listener feel that he was talking about a family member of no great distinction. He must surely have been the last member of the Institute to remember the long-serving President Leonard Darwin (1911-1928), his great-uncle, who died in 1943 (and for whom Milo's

mother wrote a long memoir which he lent me to help with Leonard Darwin's *DNB* entry).

With Milo's death the Galton Institute lost a good friend and the history of science a good scholar.

*A.W.F.Edwards*

### Milo Keynes: a personal tribute

**Milo Keynes** was a formidable character and kept fighting his disabilities to the end. Despite increasing illness in the latter years, mainly due to arthritis and impaired mobility, he never failed to come to the Galton Institute meetings when he was the Secretary. The journey from Cambridge involved a considerable amount of discomfort and pain for him, especially when the meeting was held at the Linnean Society where he had to climb four flights of stairs to get to the committee rooms.

Milo contributed enormously to the running of the Galton Institute. He was most welcoming to all new council members; he was the final arbiter on all controversial matters, whether it be questions of invited speakers for the next conference, who should give the annual Galton Lecture, or what should we publish in book form. He was most valuable as an *eminence grise* when disruptions arose around the committee table, and Milo with diplomacy and tact would be the one to see the best solution with the minimum of fuss and aggravation for the other members.

He was very proud of his family background and illustrious relatives. He never failed to pay his respects to the most eminent of them in the form of the portrait of Charles Darwin hanging in the Linnean Society whenever we met there. I think this was one of the major motivations for his continued hard work on behalf of the Galton Institute; to keep up his family traditions.

One of his major recent successes was his organisation of an exceptional Galton Conference entitled *A Century of Mendelism in Human Genetics*. He assembled a first class group of speakers, got them all to write up manuscripts, as everyone knows a difficult task, and published them in book form. Many people have told me this was one of the best conferences that the Galton Institute had ever held.

Milo was a true scholar and gentleman, and he will be greatly missed by us all.

*D.J. Galton*