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### Tracing the Trajectory of 'Positive Eugenics' in Britain

by

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**What follows is Part 1** of a dissertation submitted to The University of Manchester for the degree of Master of Science in the Faculty of Life Sciences.

**Part 2** will appear in the next Newsletter. The bibliography will appear in the next issue and the General Secretary will be happy to send it to anyone who may need it before then.

#### Abstract

When Francis Galton coined the term 'eugenics' in 1883, he envisioned a voluntary secular religion in which humanity could control its own evolution through selective breeding. As eugenic theories developed, their proponents divided into two factions; those who advocated selective breeding by stripping out the undesirable traits ('negative eugenics') and those for whom the propagation of positive traits was more promising ('positive eugenics').

This article investigates the development of 'positive eugenics' in Britain and the role this style of eugenics played within the framework of the British

eugenics movement from its conception in the late 1800s to the end of World War II. It explores the meanings of 'positive eugenics' in the early conception of eugenics, how and when it originated, who supported this style, to what degree it overlapped with, and diverged from, 'negative eugenics'; what traits its proponents considered when planning for a practical program; what its goals were and how its proponents planned to achieve those goals, and how the wider social, political, cultural, and religious trends in Britain shaped the successes and failures of the 'positive eugenics'. This article sheds light upon the largely hidden effect that 'positive eugenics' has had on the British eugenics movement. In doing so, it reveals that 'positive eugenics' was much broader and more diverse than it has previously been given credit for.

#### Chapter 1: Introduction

Recent advances in genetics and biotechnology have brought eugenics back to the forefront of bioethical debates. Although germ-line gene therapy is not yet legal, the growing sales of DNA-diagnostic kits suggest that biotech companies will find a growing marketplace of eagerly awaiting, well-to-do parents. In a recent paper by the Brazilian nurses/bioethicists Lilian Mai and Emília Angerami, the authors have suggested a eugenic component in many of the most notable genetic and medical advances, including *in-vitro* fertilization, human cloning, genetic engineering, DNA vaccines, genetic therapy, genetic sequencing, and transgenic foods.<sup>1</sup> Much of

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the bioethical debate over these advances, however, relies on comparisons between modern biotechnology advances and classical eugenics from the first half of the twentieth century. This is now perceived almost exclusively as 'negative eugenics', associated with sterilization, incarceration, and the 'Final Solution'. Given the frequent references in the media to 'designer babies' and the desire for new technologies to prevent disease, a comprehensive study of the character and impact of 'positive eugenics' may be valuable in giving perspective to current debates and policy formulation.

When Francis Galton coined the term 'eugenics' in 1883, he envisioned a voluntary secular religion in which humanity could control its own evolution through selective breeding. As eugenic theories developed, their proponents divided into two factions; those who advocated selective breeding by stripping out the undesirable traits ('negative eugenics') and those for whom the propagation of positive traits was more promising ('positive eugenics'). While 'negative eugenics' is the type most familiar to historical studies, 'positive eugenics' which took root in Britain, enjoyed widespread support from influential individual eugenicists, the Eugenic Education Society, and a wide constituency of social reformers. In 1907, when the Eugenic Education Society was formed, its members had hopes for the development of a practical eugenics program. Whereas 'negative eugenics' provided the foundation for controversial yet quite specific programs, 'positive eugenics' was more diffuse, working through numerous direct and indirect, compulsory and voluntary methods to support both eugenic legislation and eugenic education of moral duty. It was largely concerned with incentives to have children, such as family allowances, birth control, and income tax reductions for children.

Since the end of the Second World

War, eugenics conjures up associations with forced sterilization, immigration restriction, marriage laws, and the atrocities of Nazi medicine. Historically, eugenics was more diverse and an important, but a neglected aspect of its ideas is 'positive' eugenics. Previous studies on 'positive eugenics' usually discuss it as a side-note to 'negative eugenics' or as historical background which was touted by the earliest eugenics theoreticians, such as Francis Galton.

## Literature Review

### *Survey of British 'Positive Eugenics'*

The existing literature on eugenics generally has little to say about 'positive eugenics.' Since many of the key early works have focused on the American movement, positive eugenics has been largely left in the margins. Furthermore, those policies which resulted in the extreme, coercive tactics of Nazi medicine and American eugenics sprang from 'negative eugenics'. Works focusing on the British movement tend to pay more heed to 'positive eugenics' since it was an integral part of the overall eugenics movement in Britain, though they still lack a full exploration of the extent and significance of 'positive eugenics'. In the case of American eugenics, for example, the zoologist Samuel J. Holmes published a bibliography of eugenics in the 1924. His work was the result of studies undertaken while preparing the publication of his *The Trend of the Race*. The bibliography is divided into groupings by topic. Among the topics is 'Negative Eugenics' for which he has gathered several hundred citations. There is no section for Positive Eugenics nor is it included as a sub-category of any of the others, yet he admits that he even includes publications of dubious quality and relevance to the topic. "There is a great deal of rubbish written on this as upon most other topics, and I have perhaps included too much of it in the present bibliography."<sup>2</sup> Is this an over-

sight, a lack in the literature, or perhaps an indication of the general interests in the United States where little, if any, positive eugenic interest existed? This work does not constitute an authoritative and exhaustive gathering of all publications on the topic, and it is limited in its scope, having been published in the midst of the popularity of the major international eugenic movements. This work does, however, provide some indication of the perceived interests and progress of the eugenic movements in the United States up to that time. The lack of 'positive eugenics' representation continued in the early studies on American eugenics which were largely the basis for British eugenics studies.

There were few, if any, historical publications on eugenics following the end of World War II during the late 1940s and early 1950s. In 1963, Mark Haller produced a study of American eugenics in his *Eugenics: Hereditarian Attitudes in American Thought*. In his work, Haller cites the fears of a falling birth rate in America and all over Europe as a main cause for popular interest in eugenics.<sup>3</sup> He adds to this that Americans generally agreed that the nation faced a rising tide of crime and mental disease."<sup>4</sup> He then describes how this fear, combined with increased immigration and fears of the negative influence of immigrant genes, led American eugenicists to a largely negative eugenic course of action, although they acknowledged the same differential in birth rates observed in Europe. Haller provides little mention of 'positive eugenics' except to write that a number of eugenicists thought it possible to provide financial incentives for some families to have children, but that these ideas were quickly dismissed as ineffective and slow.<sup>5</sup> The main focus of his work is the predominance of practical 'negative eugenics' programs in the United States.

Haller's work was followed by other studies on American eugenics, such as

that by Kenneth Ludmerer. In 1972, Ludmerer's *Genetics and American Society* investigated the social and scientific interactions of eugenics in the United States. Like Haller, Ludmerer's brief mention of 'positive eugenics' is mainly designed to describe an aspect of eugenics which had little hope of support and no hope for successful implementation. He indicates that "the social and technical difficulties facing positive eugenics were so great, most felt no more could be done than to educate the public on the 'facts' of heredity in the hope that 'superior' couples would voluntarily heed the message to have more children. Some eugenicists were quite pessimistic and felt that the implementation of 'positive' programs was a hopelessly discouraging task to which even 'eugenic education' could make little contribution."<sup>6</sup> Perhaps true in America, though not in Britain, Ludmerer later states that "most eugenicists from the start were interested in negative rather than positive eugenics".<sup>7</sup> In fact, the earliest eugenicists, such as Galton, came to eugenic ideas and philosophy with an interest in 'positive eugenics' and upon reflection developed the approach based on both 'positive' and 'negative' eugenics. What is clear from Ludmerer's work is that eugenics is a regional study, uniquely applicable to different legal systems, social attitudes, and national causes. What could be said for the American eugenics movement was not necessarily true for the British movement.

These early publications which focused on American eugenics did not consider British eugenics much beyond Galton's initial discussion of it. In 1970, however, Lyndsay Farrall completed an influential PhD dissertation at the University of Indiana in which he notably investigated the demographics of the Eugenics Education Society in Britain and described the development of British eugenics. Farrall's was one of the first studies of eugenics to look outside

the United States, and it took a particular look at the financial, administrative, and organizational formation of the Eugenics Education Society and the Galton Laboratory as the two most important organizations in the British eugenics movement. Farrall's dissertation, however, contains no sections on 'positive' or 'negative' eugenics' policies. This is likely because his dissertation focuses on the organizational interests of the Eugenics Education Society and the Galton Laboratory rather than the precise theories they were promoting. While he mentions that the Eugenics Education Society encouraged members deemed worthy to beget more children, Farrall considers the major influence of the society as supporting measures to prevent the propagation of unfit traits.<sup>8</sup>

An example of such a work is *Eugenics and Politics in Britain 1900-1914* by G.R. Searle. In his work, the author's focus followed the rapid political development of British eugenics from a small collection of enthusiasts and "cranks" to a monumental movement by the start of the First World War.<sup>9</sup> He sets out two themes for his monograph: "interaction between scientific investigation and political speculation" and "problems being experienced by the various industrialized societies in which it took root."<sup>10</sup> Searle's work does contain a chapter on 'positive eugenics' although it is mostly concerned with how Galton and his followers picked the traits that they saw as ideal, what their views on 'genius' were, and what connection they saw between genius and genetics. It says very little about 'positive eugenics' policy and proposal or how or why anyone pursued it. For the most part, Searle is critical of 'positive eugenics' for its stock-breeding references. He claims that, "The eugenicists would have been less liable to misconstruction if they themselves had not so frequently drawn analogies between human procreation and stock

breeding. Essentially, however, they were doing no more than pointing out that the human race was a part of the organic world and thus, from the biological point of view, subject to the same laws of selection and variation."<sup>11</sup> From his perspective 'positive eugenics' was just another technique used by animal breeders to achieve a particular phenotypic expression and was seen by early eugenicists apart from the social implications of the wider eugenics movement.

In 1981, also following Farrall's example of interest in interactions between British Eugenics and other social movements, Donald MacKenzie authored his *Statistics in Britain 1865-1930* which investigates the history of statistics and demographics as they related to eugenics in Britain. While he does not provide a specific section on 'positive eugenics', MacKenzie does not shy away from inclusion of 'positive eugenics' when discussing the aims of early eugenicists, such as Galton, Pearson, or R.A. Fisher, though he provides little detail on specific techniques embraced to this end. He writes that from their perspective, "The only secure long-term way to improve society... was to improve the characteristics of the individuals in it, and the best way to do this was to ensure that those in the present generation with good characteristics (the 'fit') had more children than those with bad characteristics (the 'unfit')."<sup>12</sup> MacKenzie's descriptions of eugenic theory are largely written from the perspective of statistics, correcting an equation of imbalanced differential births between the 'fit' and the 'unfit', and are based on Galton's statistical assessment of societal divisions.<sup>13</sup> MacKenzie differentiates eugenic techniques by 'individual' and 'mass' selection, with 'individual' selection relying on social definitions to label individuals as 'unfit' and, therefore favoring 'negative eugenics'.<sup>14</sup> Conversely 'mass' selection would be based

on IQ or earnings to regulate fertility, thus favoring 'positive eugenics'.<sup>15</sup> While MacKenzie provides few details on the 'positive' eugenic methods, he does note family allowances and income tax allowances for families with children as avenues that the Eugenics Education Society explored.<sup>16</sup> Mostly, however, his work is concerned with the development of statistics for eugenic purposes.

Perhaps the most influential work on eugenics since Farrall's dissertation has been Daniel Kevles' *In the Name of Eugenics*, a comparative study of eugenics movements in American and Britain published in 1985. One of the main theories of Kevles' work is that the difference in United States' and Britain's approaches to eugenics came through legislation. Unlike the United States during the same period, Britain did not pass such compulsory legislation.<sup>17</sup> With regard to 'positive eugenics', Kevles integrates discussion of it throughout the work, though he mostly limits interest in 'positive eugenics' to early late-19<sup>th</sup> and early-20<sup>th</sup> century British eugenics. Initially, Kevles writes that there was little separation between the 'positive' style and the 'negative' style, as eugenicists discussed both with the neutral terminology of 'selective breeding'.<sup>18</sup> He also notes that eugenics enthusiasts in both the United States and Britain encouraged a focus on women's health as a way to improve offspring, including avoidance of smoking because of its deleterious effect on a woman's reproductive organs.<sup>19</sup> This was a neo-Lamarckian claim about environmental effects on genetics which had a dubious connection to 'positive eugenics'. According to Kevles, the terminology of 'positive' and 'negative' eugenics was formalized around the prospect of practical eugenic programs rather than theoretical eugenics, and didn't become popularly utilized until after the turn of the century. He also writes that "the courses of action could be divided into two, at times, overlapping approaches:

'positive eugenics,' which aimed to foster more prolific breeding among the socially meritorious, and 'negative eugenics,' which intended to encourage the socially disadvantaged to breed less – or, better yet, not at all."<sup>20</sup> Kevles provides little further elaboration of this overlap, or of the techniques proposed to accomplish 'positive eugenics', in the rest of his work.

Following the publication of Kevles' book, numerous other historians have addressed eugenics, though few have provided further elaboration on the methods, plans, or influence of 'positive eugenics'. In 1988, Benno Müller-Hill published his *Murderous Science* which specifically appraises Nazi eugenics leading up the Holocaust.<sup>21</sup> His work naturally focuses entirely on 'negative eugenics'. Richard Soloway wrote his *Demography and Degeneration* in 1995 as a follow-up to his 1982 publication, *Birth Control and the Population Question in England* and as a response to a gap in the literature proposed by Kevles for a study of eugenics and demography.<sup>22</sup> Both of these works are primarily about birth control and the declining birth rate. Most of Soloway's section on 'positive eugenics' in *Demography and Degeneration* is dedicated to 'negative eugenics' and to explaining why 'positive eugenics' was only useful in the minds of the most zealous 'old-liners'.<sup>23</sup> This sentiment is consistent with his 1982 publication in which he claims that "a minority of Eugenics Education Society members... recognized the need for both negative and positive eugenic policies to achieve a racially beneficial balance in the population."<sup>24</sup>

Diane Paul has also made major contribution to eugenics literature in her 1995 monograph *Controlling Human Heredity* and her 1998 essay collection *The Politics of Heredity*. She provides a survey of the history of eugenics in *Controlling Human Heredity*, and only

discusses 'positive eugenics' as part of Galton's failed initial vision of eugenics which called for "more intellectuals rather than fewer paupers and imbeciles."<sup>25</sup> Paul's essays in *The Politics of Heredity* cover a variety of social and political topics and their relationships with eugenics, such as Leftists, nature/nurture, and bioethics. 'Positive eugenics' only enters the debates as it is related to these topics and mostly as envisioned by the later 'reform' eugenicists, like Muller and Haldane.<sup>26</sup>

Most recently, Elof Carlson notes the lack of exploration into 'positive eugenics' in his *The Unfit: A History of a Bad Idea* in 2001. In it he provides a survey of the history of eugenics including a brief synopsis of eugenics programs around the world. Carlson provides a discussion of 'positive eugenics' in relation to Galton's original vision and notes that it did better in Britain than in America, however he concedes that "No historical work on positive eugenics has been written."<sup>27</sup> In his section on international eugenics programs he describes some interesting instances of 'positive eugenics' programs in the United States, Russia, and Singapore. The next section contains further discussions of these cases.

### ***Survey of 'Positive Eugenics' Outside Britain***

Having seen what the existing literature says about 'positive eugenics' in Britain, it would be worthwhile briefly to review the eugenics programs in other regions of the world, some of which engaged in 'positive eugenics' techniques. Ultimately, when investigating in the international context, the research turns away from theoretical since the eugenics communities of numerous countries contacted each other and the theorists tended to remain in international academic circles. Instead, discussion turns to the practical, legal, and social situations of their specific national

contexts. For example, where eugenic communities formed around class difference in Britain and racial difference in America, the Finnish eugenics program rose out of the Finnish-speaking/Swedish-speaking divide of the early 1900s.<sup>28</sup> This language division indicated a political and social rift in the newly independent country, and led to civil war by the 1920s. From this social divide, the Finnish eugenics program developed an entirely 'negative eugenic' campaign largely centered on degeneracy theory resulting in eugenic sterilization and education legislation.<sup>29</sup> While these actions "did not occur in isolation but were closely connected to the international eugenics movement and developments," they were nonetheless based on the very specific national context of Finland and therefore only nominally resemble the U.S. and German programs upon which the Finnish movement was based.<sup>30</sup> This section will specifically examine the differences in 'positive eugenics' approaches based on national contexts in Australia, the United States, Russia, Germany, France, Italy, Latin America, and Singapore. This research does not include the considerable eugenics programs in the Scandinavian states as no evidence for a 'positive eugenics' component has been found.

In Australia, the United States, and Russia, 'positive eugenics' campaigns all centered on the possibility of artificial insemination, and are sometimes referred to as 'euteleogenesis' or 'germinal choice'. Artificial insemination was first suggested as a eugenic tool in France during the 1880s by the anthropologist and librarian, George Vacher de Lapouge (1854-1934).<sup>31</sup> His theories, however, were quickly dismissed, and use of artificial insemination in eugenics did not re-enter discussions until the 1910s or 1920s. During and after the First World War, the Australian eugenicist Marion Louisa Piddington (1869-1950) suggested that artificial insemina-

tion could be used "to counter the dysgenic effects of the Great War."<sup>32</sup> Under her scheme, widows and single women who were unable to find suitable mates due to the war would be able to receive eugenic artificial insemination. Furthermore, women consenting to this program would be offered financial assistance to cope with raising their child.<sup>33</sup> Not only war, but fear of a declining birth rate spurred eugenic feelings in Australia. In fact, the falling birth rate underscored the eugenics movements across Europe and the United States as well.

In the United States, "Several eugenicists toyed with possible government schemes to reverse the trend of the birth rates by granting financial advantages to couples with children and thus encourage the prudent and farsighted to breed more freely. But most agreed that there was no effective way, in a democratic society, to make the fit reproduce at a faster rate except through the slow process of education."<sup>34</sup> These early 'positive eugenics' sentiments were largely overshadowed by the fact that practical 'negative eugenics' programs were implemented in America. In 1935 the British eugenicist Herbert Brewer corresponded with the American geneticist H.J. Muller (1890-1967) regarding his eugenic artificial insemination theories, which he called 'euteleogenesis'. In his 1935 publication, *Out of the Night*, Muller developed his version of the theory, called 'germinal choice', in which donors of above-average intelligence would father children through artificial insemination.<sup>35</sup> Muller had been a long-time supporter of eugenics though a "critic of negative eugenics" which he "condemned... as bigoted, sexist, and spurious in his public speeches and writings as early as 1932, but this did not alter the hostile reception from many of his colleagues and the public in general for advocating a voluntary positive eugenics program."<sup>36</sup> He initially

attempted to implement his program of voluntary artificial insemination in the USSR, but a letter and Russian translation of his work failed to convince Stalin that the program was worthwhile. In fact, his effort was likely intercepted by Stalin's director of biology, Trofim Lysenko, who objected to any western genetics including eugenics. Muller was forced to leave the USSR shortly thereafter. His 'positive eugenics' program was finally taken up again in the 1960s by Robert Klark Graham, who founded a sperm bank specializing in intellectual genius donors based on Muller's theories in California in 1980. The sperm bank, the Foundation for Germinal Choice, closed in 1999 following Graham's death but conceived over 215 babies during its existence.<sup>37</sup>

In Russia, the 'positive eugenics' proposals closely resembled those of Brewer and Muller largely because the main proponents of 'positive eugenics' in Russia, such as Alexander Serebrovskii, shared Muller's perspective on genetics and closely followed his work.<sup>38</sup> A battle between two systems of genetics dominated all aspects of eugenics discussions in Russia, with the 'Morganists' supporting a Mendelian approach and the 'Lysenkoists' taking a neo-Lamarckian view. Serebrovskii along with Israel I. Agol, Solomon G. Levit and M.L. Levin led the "Morganist" contingent, pitting themselves against the 'Lamarckists' in a bid for support from the Soviet Marxists.<sup>39</sup> While this debate was in its infancy, Serebrovskii began presenting eugenics proposals in the 1920s, and discussions at the Communist Academy were deeply mired in political rhetoric and social philosophy. The Academy had viewed all previous eugenics proposals as bourgeois, reactionary, and trivial.<sup>40</sup> Serebrovskii hoped that his program of 'positive eugenics' through artificial insemination would be palatable to Bolshevik ideals. "Serebrovskii disdained negative eugenic measures such

as the sterilization of defectives... But he had a programme for selective breeding that could be realized in a free socialist society, and indeed only in such."<sup>41</sup> His plan called for educating women to conceive through artificial insemination by eugenically selected sperm. Eventually, with enough education, this would become common-place and accepted in society. Love and sex, defined as pleasure, would be separated from conception, defined as biology.<sup>42</sup> Serebrovskii's eugenic ideas, and indeed 'Morganism', fell out of favor in the political circles of Russia, and eugenics was abandoned suddenly in 1930 when "the Russian Eugenics Society was disbanded and the Eugenics Section of Kol'tsov's Institute of Experimental Biology was abolished."<sup>43</sup>

Eugenics in Germany became infamous through Nazi medicine, but in Wilhelmine Germany, eugenics took on a much more diverse form following Ernst Haeckel's popularization of 'Social Darwinism' and the rise of the hygiene movement. "Many medically trained race hygienists argued that the surest way to improve the general level of national health was to upgrade the bodily constitution of all individuals in society."<sup>44</sup> Alfred Ploetz, who circa 1910 first offered a program for German eugenics, listed among his goals "opposition to the two-child system and fostering 'fit' families with huge number of children".<sup>45</sup> These were in addition to a long list of 'negative eugenics' goals. Ploetz coordinated both types of eugenics without significant separation. With the transition to the Weimar government, however, Germany "witnessed an increased emphasis upon reducing the social cost of the unproductive" as discussion turned from improving the race to "preventing the decline of the German *Volk* and state."<sup>46</sup> Even at the height of 'negative eugenics' under the Nazi government, 'positive eugenics' maintained some support. Himmler, for example, implemented the 'Lebensborn'

project through which unwed German women would receive benefits for themselves and their children, including improved social status, if they would allow their children to be fathered by SS officers.<sup>47</sup>

While French eugenicists may have been the first to suggest artificial insemination for eugenic purposes in the 1880s, it was never a serious part of their 'positive eugenic' effort. According to Elof Carlson, eugenics in France was a much more general term than in the United States or Britain. He claims that French eugenics embraced "classical negative eugenics... with its sterilization programs, racist and anti-Semitic organizations, birth control advocates, anti-birth control natalists who favored a larger family for everyone to avoid race suicide, puericulturists who believed in a Lamarckian favorable environment prior to and during pregnancy to bring about superior babies, and Lamarckian socialists who saw good environments as the answer to bad heredity."<sup>48</sup> Meanwhile, the historically popular view has held that France had a distaste for eugenics and that, while it was invented in Britain and enthusiastically supported in the US and Germany, France opposed it. William Schneider, however presents evidence to the contrary. According to Schneider, two of the major factors instigating French eugenics were the continued influence of Lamarck and the fear of depopulation, both of which led social movements to unite through eugenic thought and initially "made it difficult for French eugenicists to propose negative measures to eliminate undesirable elements in the population."<sup>49</sup> For many years, the eugenicists and the natalists in France shared a common agenda which combined 'positive eugenics' and 'puericulture' to increase both quantity and quality of the population, though they eventually broke ties as the eugenicists began to support 'negative eugenic' methods.<sup>50</sup> In the view of the French eugenicists, whose

neo-Lamarckian beliefs included inheritance of acquired traits, human evolution could be directed through 'puericulture' which attempted to improve environmental and health aspects of infants. According to Schneider, 'positive eugenics' in France lost support among eugenicists because it became too complicated to control with too many groups having different objectives for reform following World War I. The eugenicists had to rework their strategy and that, combined with a change in membership, led the group to 'negative eugenics'.<sup>51</sup>

For the Fascist Italian government, the declining population of Italy was at the heart of Mussolini's pro-natalist agenda. Rather than true 'positive eugenics' which endorses the propagation of 'fit' genes, Mussolini endorsed a general positive population growth, as Italy would find it difficult to maintain an empire with a relatively low population in Europe. Eugenicists in Britain would also take up this argument. As Anna Davin explains it in "Imperialism and Motherhood," "The birth rate then was a matter of national importance: population was power."<sup>52</sup> World War I emphasized the importance of having a population great enough, genetically and quantitatively, to stand up against other nations. Besides the political rhetoric in Italy, the Fascist government created the 'Consiglio Nazionale delle Ricerche' (CNR) in 1923 which was charged with the task of investigating ways to strengthen the population of Italy. They accomplished this through a combination of investigations in hygiene, infectious diseases, and 'positive eugenics'.<sup>53</sup> The CNR's secretary, Dante De Blasi, made clear that the goal of the CRN was not merely investigative but also to incorporate applied science.<sup>54</sup> As in France, Italian 'positive eugenics' closely related 'race hygiene' with 'public hygiene' and sanitation through a belief in acquired traits. The most significant investigations in 'positive eugenics' funded by the

CNR came through Nicolo Pende's studies on the genetic effects of rays on biotypes. Pende believed that a child's 'biotype', a term created by Pende encompassing "tutti gli aspetti dell'umana individualità [all the aspects of human individuality]," could be influenced by ray bombardment, and as such would not only be of medical value but could also be "lo strumento fondamentale dell'eugenetica positiva di cui egli era strenuo sostenitore [the fundamental instrument for positive eugenics of which he was a strenuous supporter]."<sup>55</sup> Interestingly, while Pende maintained a strong influence on medical research in Italy, his eugenic theories were more embraced in Latin America. "Pende fue un importante soporte intelectual y científico del régimen político instaurado en 1922 en Italia y también supo difundir la biotipología en países latinoamericanos [Pende was an important intellectual and scientific supporter of the political system established in 1922 in Italy and also spread his biotypology to Latin countries]."<sup>56</sup>

The Latin American countries were relative late-comers to eugenics, importing its theories from Europe and the United States during the 1920s and 1930s. Through the influence of Pende, eugenics maintained close ties with medicine, though it also incorporated research from other fields of study. For example, eugenics was also closely related to anthropological studies of race as well as psychology and criminology.<sup>57</sup> What little 'positive eugenics' existed in Latin America centered on conforming the individual to a societal ideal and improved public hygiene and sanitation. The concept of Nietzsche's 'supermen' found favor in Latin America where it was re-envisioned in the form of the 'hombre nuevo' or *new man*, an "expression de virilidad y fuerza con la que se identificó plenamente el fascismo [expression of virility and strength with which fascism fully identified]," and the 'nueva mujer' or *new woman* which, by

contrast, "se asoció a un estereotipo que lo eugenistas combatieron por atribuirle el abandono de sus deberes maternos y religiosos [was associated with a stereotype which the eugenicists fought by attributing to it the abandonment of motherly and religious duties]."<sup>58</sup> In this sense, 'positive eugenics' in Latin America was about the image of perfection in individuals with the belief that conforming to an ideal would improve both the genetic stock of the population and the social condition of the population. Apart from this nominally eugenic concept, there were few reported 'positive eugenics' initiatives in Latin America.

One final, very intriguing case of 'positive eugenics' developed in Singapore. In early 1980s, Prime Minister Lee Kuan Yew, fearing for the quality of the future population of Singapore, proposed a series of eugenic incentives to change social behavior which he saw as damaging to the national genetic stock. He suggested that "women in Singapore who attended college became unmarried because of a prevailing male prejudice against educated women, who were seen as troublesome, lacking obedience, and challenging the value men favored of their making all the financial and other decisions about their family's welfare."<sup>59</sup> He feared that "these trends, if left unchecked, could only lead to a dilution of human talent in Singapore, a prelude to the certain demise of the island's hitherto vibrant economy."<sup>60</sup> In an effort to reverse this trend Lee proposed a number of solutions of both a 'positive' and a 'negative' eugenic nature. His 'positive eugenics' solutions included "a computer dating service; fiscal and other incentives for graduate women to bear more children; love-boat cruises (all expenses paid) for eligible graduate singles in the civil service; special admissions criteria to the National University of Singapore (NUS) to even out the male-female student ratio; calls to NUS academicians to

investigate the single graduate problem, and also the introduction of courtship classes in the undergraduate curriculum to hone the would-be suitor's skills, etc."<sup>61</sup> The same fears which drove Singapore to adopt these drastic eugenic measures in the 1980s were present in Britain around the turn of the century. In the early 1900s, anti-feminism eugenicists in Britain found that "women college graduates tended not to marry, and that those who did bore – on the statistical average – fewer than two children, less than half the number necessary to keep up the social stock."<sup>62</sup> In Britain, these studies were largely used to dissuade women from education towards pursuit of their maternal roles.

This review of the existing literature on 'positive eugenics' both within Britain and outside of Britain shows that 'positive eugenics' has largely been overlooked and that it is more intricately related to local social, political, and cultural developments than previously thought. In Britain the literature supports the proposal that eugenicists looked more favorably upon 'positive eugenics' than in other countries and that it probably played a significant role in the development of eugenics, especially in the early days, but it does not provide much detail as to the theories, methods, and techniques employed, nor does it reveal how expansive or influential this style of eugenics was. The literature on eugenics in other countries shows how broadly applicable the theories of eugenics are and just how specific they are to regional political, social, and cultural developments and backgrounds. Eugenicists often engaged in the same arguments in one country as another although each case produced different goals, methods, and outcomes. Moreover, different national eugenics programs and unique styles of 'positive eugenics' resulted from diverse interpretations of eugenics. William Schneider, writing about the diversity found in

French eugenics claimed that his study “demonstrates the advantage of considering eugenics more broadly: that is, as a widespread phenomenon found at the turn of the nineteenth century in most Western industrial societies. Accordingly, its roots lay in the social class differentiation and conflict, economic cycles, and increased growth of government, as well as the scientific view of the universe, that were some of the most obvious features of the new modern society.”<sup>63</sup> If true, then a study specific to the development of ‘positive eugenics’ in Britain is especially justifiable since the theories of eugenics originate from Britain and since ‘positive eugenics’, while known to be an integral part of British eugenics, has not been thoroughly investigated.

## Main Argument

This article will investigate the development of ‘positive eugenics’ in Britain and the role this style of eugenics played within the framework of the British eugenics movement from its conception in the late 1800s to the end of World War II. It will explore the meanings of ‘positive eugenics’ in the early conception of eugenics, how and when it originated, who supported this style, to what degree it overlapped with and diverged from ‘negative eugenics’, what traits its proponents considered when planning for a practical program, what its goals were and how its proponents planned to achieve those goals, and how the wider social, political, cultural, and religious trends in Britain shaped the successes and failures of the ‘positive eugenics’.

Essential to understanding eugenics in Britain is an examination of the underlying social influences that brought together eugenic-minded people from many different viewpoints. These eugenic-minded individuals at times embraced seemingly opposing styles but were brought together by their common

paradigm which placed genetics and biology at the center of human evolution and within the grasp of human control. From its beginnings, eugenics drew interest from members of numerous causes who found it malleable enough to support their own social concerns. When eugenics coalesced around the two main British eugenics organizations, the Galton Laboratory and the Eugenics Education Society, neither one provided much action towards fulfilling eugenic goals. The Galton Laboratory by choice refrained from political and social action, pursuing instead pure research. The Eugenics Education Society provided a voice to anyone interested in eugenics, but supported only those causes upon which the majority would agree. Both ‘positive’ and ‘negative’ eugenics goals suffered because of this hesitancy, though members suggested numerous proposals for action. As this article will show, the earliest approaches by the Eugenics Education Society in Britain, treated ‘positive eugenics’ on equal standing with ‘negative eugenics’. The ‘positive eugenics’ proposals were a fundamental part of the eugenics program in Britain, and achieved at least nominal successes for the movement.

This article will explore the different styles which ‘positive eugenics’ embraced such as direct and indirect action, compulsion and voluntarism, and legislation and personal responsibility. Reliance upon individualism and moral duty in British eugenics was key to the support of ‘positive eugenics’ and may help explain why it was more successful in Britain than elsewhere. Another key concept for ‘positive eugenics’ is its appeal to other social movements and the delicate interactions between the Eugenics Education Society and these other movements. While there was much overlap in membership between these organizations, their direct interactions were tentative at best. Finally, this article will investigate the objections to

‘positive eugenics’ and why it ultimately lost support from the majority in the mainstream eugenics movement by the 1930s and 1940s.

The dates encompassing the research for this article range from the 1880s to the mid-1940s. These dates correspond to the boundaries within which eugenics had its most significant influence in Britain. Francis Galton coined the term ‘eugenics’ including a description of ‘positive eugenics’ in the 1880s but following the Trials of Nuremberg at the end of World War II, eugenics largely lost any serious consideration in Britain. Between these dates, Britain provided a base for the first investigations into eugenics and its related fields, biometry and anthropometry. Furthermore, while eugenics in America and Germany surpassed Britain in the embrace of ‘negative eugenics’ and practical programs, Britain remained the leading country in ‘positive eugenics’ research and investigation. As such, the main sources of information for this article come from the two major British eugenics organizations and individual British eugenicists. The archival papers of the Galton Laboratory and the Eugenics Education Society, including their reports and correspondence provided significant material on the development of ‘positive eugenics’. The *Eugenics Review*, the publication of the Eugenics Education Society provided further evidence of the intellectual development and proposals of the eugenics movement. Finally, the correspondence of important leaders of the eugenics movement provided contemporary accounts of the range of eugenics beliefs within the organizations. Many individuals held very strong personal beliefs on what would be the most effective policies for Britain to adopt. They range from the ultra-coercive to the ultra-utopian. Correspondence contains the individual views of some of the most influential eugenicists, though this article will largely focus on the role of ‘positive

eugenics' and the proposals for 'positive eugenics' which were seriously considered by the two major societies in Britain.

#### References:

- <sup>1</sup>Mai L.D. and Angerami E.L.S. (2006), 252.  
<sup>2</sup>Holmes S.J. (1924), 2.  
<sup>3</sup>Haller M.H. (1963), 79.  
<sup>4</sup>Ibid., 80.  
<sup>5</sup>Ibid., 81.  
<sup>6</sup>Ludmerer K.M. (1972), 8.  
<sup>7</sup>Ibid., 46.  
<sup>8</sup>Farral L. (1970), 203-204.  
<sup>9</sup>Searle G.R. (1976), 1-2.  
<sup>10</sup>Ibid., 2.  
<sup>11</sup>Ibid., 75.  
<sup>12</sup>MacKenzie D.A. (1981), 11.  
<sup>13</sup>Ibid., 16-18.  
<sup>14</sup>Ibid., 19.  
<sup>15</sup>Ibid., 20.  
<sup>16</sup>Ibid., 21.  
<sup>17</sup>Kevles D.J. (1985), 99.  
<sup>18</sup>Ibid., 59.  
<sup>19</sup>Ibid., 64.  
<sup>20</sup>Ibid., 85.  
<sup>21</sup>Müller-Hill, B. (1988).  
<sup>22</sup>Soloway R.A. (1995), xxiii. In response to further research proposed by Kevles. Kevles D.J. (1985), 392.  
<sup>23</sup>Ibid., 63-73.

- <sup>24</sup>Soloway R.A. (1982), 122.  
<sup>25</sup>Paul D.B. (1995), 31.  
<sup>26</sup>Paul D.B. (1998), 25 and 101.  
<sup>27</sup>Carlson E.A. (2001), 14n1.  
<sup>28</sup>Mattila M. (1999), 401.  
<sup>29</sup>Ibid., 406.  
<sup>30</sup>Ibid., 403.  
<sup>31</sup>Richards M. (2008), 212.  
<sup>32</sup>Ibid., 212.  
<sup>33</sup>Ibid., 212.  
<sup>34</sup>Haller M.H. (1963), 81.  
<sup>35</sup>Richards M. (2008), 214.  
<sup>36</sup>Carlson E. (2001), 2.  
<sup>37</sup>Richards M. (2008), 219. Also from Carlson E. (2001), 365.  
<sup>38</sup>Carlson E. (2001), 275.  
<sup>39</sup>Joravsky D. (1961), 300.  
<sup>40</sup>Adams M.B. (1990), 182.  
<sup>41</sup>Joravsky D. (1961), 305-306.  
<sup>42</sup>Ibid., 306.  
<sup>43</sup>Adams M.B. (1990), 182.  
<sup>44</sup>Weiss S.F. (1990), 13.  
<sup>45</sup>Ibid., 23.  
<sup>46</sup>Ibid., 29.  
<sup>47</sup>Carlson E. (2001), 327.  
<sup>48</sup>Ibid., 274.  
<sup>49</sup>Schneider W.H. (1990)b, 8.  
<sup>50</sup>Ibid., 8-9.  
<sup>51</sup>Ibid., 284.  
<sup>52</sup>Davin A. (1978), 10.  
<sup>53</sup>Canali S. (2001), 143.  
<sup>54</sup>Ibid., 150.

- <sup>55</sup>Ibid., 162. All translations of foreign texts into English are my own, unless otherwise specified.  
<sup>56</sup>Vallejo, G. (2007), 30.  
<sup>57</sup>Ferla L. (2007), 86.  
<sup>58</sup>Vallejo, G. (2007), 33.  
<sup>59</sup>Carlson E. (2001), 363.  
<sup>60</sup>Chan C.K. (1987), 165.  
<sup>61</sup>Ibid., 166.  
<sup>62</sup>Kevles D.J. (1985), 89.  
<sup>63</sup>Schneider W.H. (1990)a, 69.

**Anthony J. Dellureficio** is an American who has previously worked at the Cold Spring Harbor Laboratory in the US. His personal interests have long been in the scientific and social work of H.J. Muller, one of the few American 'positive eugenicists'. Anthony believes that Muller developed his theories through meetings with his friend Julian Huxley who was, of course, a Vice-President of The Eugenics Society. Anthony has just taken up the post of Systems Librarian for The New School in lower Manhattan. The School was founded as a specialty school in social sciences by British Fabians in the early 1900's and became well known for bringing over European scholars during World War II to what was called the 'University in Exile'.

### Dr. Peter L.C.Diggory (1924-2009)

Peter Diggory, who died recently, was a highly regarded gynaecologist who made notable contributions to the advancement of women's reproductive health. His initial university education was in mathematics but, after wartime work on radar, he qualified in medicine at UCL. Thereafter he worked in a number of London hospitals including Queen Charlotte's, Westminster, Kingston and the Royal Marsden as well as establishing a busy private practice.

In the course of his work as a hospital

consultant in the 1950s and 1960s he was confronted by many cases of women needing remedial treatment as a result of back street abortions. These experiences, including numerous cases where the unfortunate victims died, influenced him greatly and he felt that it was time that abortion, with safeguards, should be legalised. It was, therefore, not surprising that he assumed a leading position in the Abortion Law Reform Association and this led on to his important role in providing medical advice in the campaign, ultimately successful in 1967 through the Private Member's Bill put forward by the then M.P. David Steel, to provide a legal framework for abortion.

Peter Diggory was also very active in

promoting, both in lectures and in a variety of publications, the need for more and better organised family planning services particularly, but not only, within the NHS and abroad.

Within the Galton Institute he brought a wealth of informed knowledge and wise counsel to meetings of the Council of which he was (always with his elegant bow tie), for many years, an active member. The Institute benefited greatly, not only from his contributions based on professional experience but also from his ability, with acute timing and good humour, to help on occasion to defuse difficult situations during meetings.

**John Beardmore**

# GALTON'S COMPOSITE OF THE TWO SISTERS

by

David Berman  
and  
Brendan Dempsey<sup>1</sup>

## 1 The Dismal Discoveries

As someone whose philosophical research has been much inspired and partly based on Galton's work, I was saddened to make two discoveries which seemed to show how his work could be both slipshod and even dishonest. The discoveries concerned one of the 'Specimens of Composite Portraiture', that of the Two Sisters (Figure 1), seen at the top of the plate facing page 8 in his *Inquiries Concerning Human Faculty* (London, 2<sup>nd</sup> ed. 1907). Galton clearly took some pride in this particular composite. To appreciate why, I should say something about his theory. A composite, according to Galton, is the blending or super-imposing of a number of photographic representations into one representation that is like all of its components but not like any particular one to the exclusion of the others. Another way Galton characterizes a composite is as the visual counterpart of a mathematical average. Still another way is as a generic image. Bearing this in mind, we can now appreciate why Galton believed that he had succeeded so admirably in the case of the two sisters. For, as he tells us, 'That neither of these [sisters] predominated in the present case will be learned from the following letter by the father of the two ladies, who is himself a photographer:-

"I am [writes the father to Galton] exceedingly obliged for the very curious and interesting composite portraits of my two children. Knowing the faces so well, it caused me quite a surprise when I opened your letter. I put one of the full faces on the table for the mother to pick up casually. She said, 'When did you do this portrait of A? how *like* she is to B? Or is she B? I never thought they were so like before.' It has puzzled several people to say whether the profile was intended for A or B. Then I tried one of them on a friend who has not seen

the girls for years. He said, 'Well, it is one of the family for certain, but I don't know which.'" (p. 9)

Although in his *Inquiries* Galton reproduced both a front view and profile composite of the two sisters, he did not reproduce the particular component photos from which they were composited. Hence his readers are not able to see for themselves how the composites compare with its components. However, in his richly illustrated biography of Galton, Karl Pearson filled this gap with his Plate xxxii, which is partly reproduced in this article as Figure 2.<sup>2</sup>

Here, then, was one sad discovery: that Galton had been grossly mistaken in stating that there were two sisters, since it seems plain from Pearson's illustration and caption that there were three, which also brings into question the delightful letter from the father, which seems so tellingly to show Galton's success with the composites as well as justifying his theory of composites.

The second discovery was made in collaboration with Brendan Dempsey, the Trinity College photographer, as part of a project on Galtonian composites. Using the new computer technology, we were trying produce some new composites as well as duplicating some of Galton's own composites. But when we, i.e. Brendan, composited the three sisters Plate xxxii, we got a surprising result, namely, that our frontal composite (Figure 3) was different from Galton's. This is particularly clear in the neckline, our composite showing elements from the portrait on the left which do not appear at all in Galton's, whose composite is also much less messy and hence more aesthetically pleasing than ours. Both Brendan and I therefore suspected that Galton had doctored his evidence.

As a careful photographer, concerned with details, this bothered Brendan probably even more than it did me. I was more disturbed by Galton's bungle over the number of sisters, so that the other bungle was for me pushed somewhat into the background. But my overall impression was that the whole affair showed Galton's work in a very dismal light. At one stage I even considered the *possibility* that the anonymous letter from the father, which so nicely confirmed the theory of composites, might actually have been written by Galton himself; although on balance I thought that was unlikely.

## 2 The Light

However the general dismal impression of bungled work stayed with me- that is, until recently when Brendan and I met once again to discuss using some of our composites for a website we are working on.<sup>3</sup> At this meeting Brendan showed me what he called the 'worst composite', i.e. Galton's composite of the sisters and how it diverged from ours. That was on a Friday. Over the weekend, with the dismal feeling in the background, there suddenly emerged in my mind a totally new possibility: that it was not Galton but Pearson who was (probably inadvertently) responsible for the confusion. My new thought was that Galton's apparent two blunders might actually cancel each other out; in short, that only two of the women in Pearson's illustration were sisters.

On Monday, I came to Brendan with this hypothesis, which he tested by compositing the two sitters on the right, the result was as I hoped and the hypothesis predicted: that it (Figure 4) was the same as Galton's composite, thus vindicating Galton from both ineptitude and dishonesty.

But who is the third sitter, i.e. the lady on the left? And why is she in the plate at all? Probably we shall never know for certain, but our suggestion is that she could well be the mother. She looks physically more developed and also seems dressed more appropriately for an older woman.

## Notes

1. Professor David Berman is responsible for the text; Brendan Dempsey for the composite illustrations. Both work at Trinity College Dublin.
2. See *Life and Letters of Francis Galton* (Cambridge, 1924), vol. 2, after p. 288. As far as I can tell, Pearson makes only one very passing reference to Plate xxxii; see vol. 2, p. 288.
3. See Experimental Network in Psychological Philosophy: [http://www.tcd.ie/iss/avms/photocentre/ENIPP\\_Project/index.php](http://www.tcd.ie/iss/avms/photocentre/ENIPP_Project/index.php)

A version of this article originally appeared last year in Berman's *A Manual of Experimental Philosophy* (Pepay Books, 35 Curzon Street, Dublin 8), pp.56-58.



Figure 1: Galton, *Inquiries*, top row of Plate facing p.8



Figure 2: Plate xxxii: 'Three Sisters' in Pearson, *Life of Galton*: Frontal views, with composite below



Figure 3: Dempsey's Composite of three 'sisters' in Figure 2



Figure 4: Dempsey's composite of the two sisters middle and right of Pearson, Plate xxxii

**Producing a Composite:** Using Adobe Photoshop CS4 as my editing software, firstly I create a blank white base canvas. Next to take the present case- I import the two sister images (fig. 2) into Photoshop, and move them onto the blank canvas, as layered items. A certain amount of 'opacity' must be reduced, so that it allows each image hidden behind the other image to be seen. Now I adjust each image to sit in as near perfect 'register' as possible with one another. Once I am happy with the opacities and register, the image layers can be 'flattened', which blends the layers together onto the canvas. Here one looks for a general or overall effect in which neither of the two component images dominate. If required the brightness and contrast of the composite can be adjusted at this stage to roughly match the tonal range of the component images. The resulting image is the 'composite'.

**Brendan Dempsey**

## **Integrating Genetic and Cultural Evolutionary Approaches to Language**

Symposium held 26 February 2010, Queen Mary, University of London and supported by a grant from The Galton Institute

Language is often thought to be a uniquely human trait, and one that fundamentally shapes the way we think and interact with others. Yet many important questions concerning language remain unanswered. For example, when and why did language evolve in our hominin ancestors? Is it truly a uniquely human trait, or does it have any analogues in other species? Why are there so many different languages spoken in the world, when this gives rise to so many communication problems? What makes languages change so rapidly over time, such that modern-day English-speakers find Shakespearean English so difficult to understand?

The aim of this one-day symposium was to bring together a diverse range of recent research that has studied language from an evolutionary perspective, and is beginning to answer some of the questions outlined above. Ten speakers from various disciplinary backgrounds gave talks to an audience of over 100 attendees. As well as the Galton Institute, the symposium was supported by the Centre for Ecology and Evolution, the Genetics Society, and the School of Biological and Chemical Sciences and the Department of Linguistics at Queen Mary, University of London.

The morning session focused on the genetic evolution of the language

faculty, i.e. how the capacity for language evolved in the first place. The opening speaker, Professor Tecumseh Fitch (University of Vienna), argued that while the study of language origins is often seen as little more than an exercise in imagination, two important sources of evidence regarding language evolution are comparative studies of language-like abilities in non-human species and studies of the genetic basis of language in humans. The following talks exemplified these points. Dr Simon Fisher (University of Oxford) described how a certain gene, FOXP2, appears to underlie in part human language, given that mutations in this gene result in disruptions to speech and language. Dr. Chris Petkov (Newcastle University) took us from genes to brains, and showed how neuroimaging studies of humans, chimpanzees and macaques are revealing unexpected and revealing similarities in how vocalisations are understood and produced in the brains of these species. Dr. Gabriel Beckers (Max Planck Institute for Ornithology) then outlined the lessons that can be learned from birdsong, which shows striking developmental parallels with human language. Finally, Dr. Katie Slocombe (University of York) discussed vocal communication in non-human primates, allowing us to identify those aspects of human language that likely evolved before the hominin lineage split from other primate lineages and those that are unique to human evolution.

The afternoon session turned from the origin of the language faculty to the way in which specific languages change over historical time. As Professor Mark Pagel (University of Reading) explained, there are striking parallels between the way in which languages change and the way in which biological species evolve, such that linguistic change can be said to evolve in its own right. Consequently,

just as biologists use sophisticated quantitative methods to reconstruct the evolutionary history of different species, Pagel described how the same phylogenetic methods can be used to reconstruct the evolutionary history of different languages. Dr. Fiona Jordan (Max Planck Institute for Psycholinguistics) provided an example of this, explaining how the current worldwide distribution of different kinship terminology (e.g. calling all of your cousins “brothers” and “sisters”) can be explained in historical terms. Dr. Dan Dediu (Max Planck Institute for Psycholinguistics) described how there may be a genetic influence on linguistic change: not a “gene for Chinese”, but a weak genetic bias that may make certain languages (e.g. tonal languages) easier to learn than other languages (e.g. non-tonal languages). Dr. Nick Chater (University College London) presented the results of mathematical models of language change which suggest that languages have culturally evolved to fit the brains of language learners, rather than the reverse, that brains have evolved genetically to be good at learning languages. Finally, Dr. Kenny Smith (Northumbria University) described a series of experiments that have evolved languages in the psychology lab, the results of which reinforce the idea that languages evolve to fit the particular cognitive operations of language learners.

The day finished with a round-table discussion with all of the speakers exploring the potential links between the two areas, and an appreciation of evolutionary approaches to the phenomenon of language. The symposium will result in a special issue of the journal *Human Biology* to appear in 2011 featuring contributions from many of the speakers.

**Alex Mesoudi and Alan McElligott  
18 March 2010**

### **GALTON INSTITUTE CONFERENCE 2010 To be held at The Royal Society on Wednesday, 10 November, 2010 EPIGENETICS: Where Life Meets the Genome**

**Professor Adrian Bird, CBE, FRS, FRSE - Epigenetics and Chromatin**

**Professor Azim Surani, CBE, FRS, FMedSci - Germ cells: The eternal link between all generations**

**Professor Bernhard Horsthemke - Role of Genomic Imprinting in human disease**

**Professor Peter A Jones -The Cancer Epigenome and Epigenetic Therapy**

**Dr Vardhman Rakyan - Epigenetics in multifactorial disease**

**Professor Marcus Pembrey - Summary and concluding thoughts**

**Admission is free but strictly by ticket, available from The General Secretary - [betty.nixon@talk21.com](mailto:betty.nixon@talk21.com)**