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QUEEN'S UNIVERSITY INTERNATIONAL STUDIES CENTRE

HERSTMONCEUX CASTLE, ENGLAND

CONFERENCE ON STATISTICS, SCIENCE AND PUBLIC
POLICY

21ST CONFERENCE: ENVIRONMENT, EDUCATION AND THE
GLOBAL ECONOMY

SUMMING UP, 2016

The Hon. Michael Kirby AC CMG

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OPENING, DINNER AND RECITAL

Once again participants gathered at Herstmonceux Castle to review global developments in the year past. Once again, the conference opened with an address by Professor Agnes Herzberg. She remains the moving force for the conference and for its cause of interdisciplinary studies. Sir David Cox declared that she was the “mysterious hand” that designs the programme. She enlivens it, he declared, by occasionally selecting participants to lead discussion who know ‘the least possible about the topic to which they are assigned’. Although this is not a universal rule, it is harmonious with the object of the sessions at the Castle. That object is to stimulate participants to explore issues beyond their own comfort zones.

* Retired Justice of the High Court of Australia (1996-2009); former Chair of the United Nations Commission of Inquiry on North Korea (2013-14); Member of the United Nations Secretary-General’s High Level Panel on Access to Essential Healthcare (2015-16).

Professor Herzberg began by remarking that only six of the original participants were attending the twenty first session in 2016. This left it to us to guess who those six were. Perhaps they were the *Surviving Six* after the Enid Blyton tradition. Not content with guesswork, I felt it my duty to discover the names of the six. Obviously, I undertook empirical research. I opened the record of the first conference lying on the entrance table. The six were: Agnes Herzberg, Loveday Conquest, David Cox, David Hand, Peter Milliken and Gordon Thrussel (our faithful recorder of the debates). To each of them, and to them collectively, we express thanks and offer a heartfelt tribute.

In accordance with the Castle tradition, an opening address was given, this year by Baroness [Alison] Wolf of King's College London. It was a joyous, sparkling lecture given by a dedicated educator.

Baroness Wolf admitted how she enjoyed sessions at the Castle because they encouraged her to tilt at windmills and to suggest important suggestions for reform. She acknowledged that emotionalism can sometimes "tilt the data" and distract statisticians and scientists from their task. On the other hand, any work of human beings is likely to be affected by emotions. The secret was to be aware of the effect and alert to the dangers.

Baroness Wolf emphasised, once again, the importance of the teaching of mathematics in schools and universities. She stressed the role of universities in English speaking countries to welcome, and to add value, to education for foreign students. She confessed to a number of paradoxes that she had observed in her lifetime. One of them concerned the regular complaints of scientists that they were

inadequately funded for their research. Empirical study, at least in the United Kingdom, tend to show that scientists have done comparatively well in recent decades, so far as research grants were concerned. Parliamentarians know the importance of the economy. They appreciate the contribution to the economy of the scientist and mathematician.

A special challenge, in the view of Baroness Wolf, was to get public decision-makers to embrace the statistical method. And to be willing to think in paradoxical ways, moving beyond empiricism to evaluation and judgment.

At the end of this brilliant and enthusiastic lecture, participants repaired to the first of many feasts. They then adjourned to a splendid musical evening provided by the distinguished Canadian pianist, Angela Hewitt. She admitted that her program was based on the one she would be presenting on the following Saturday evening at the Wigmore Hall in London. We were her 'guinea pigs', she declared. It is an office that we will be happy forever to repeat.

The concert saw the sonatas of Haydn predominate. A personal favourite of mine was the lyrical *Moments Musicaux* Opus 94 of Schubert. The familiar melodies take on a richer quality in watching the abrupt interruptions demonstrated by the physical presence of the pianist. Music helps to remind the participants of the larger world of art and culture within which mathematics, economics, education and the environment operate together.

Poetry too was offered by Professor Herzberg in the words of T.S. Elliot: reminding us that the human conditions commonly brings a wanderer

back to the place where he or she started. Many of the themes at the Castle in 2016 bore resonances of earlier meetings. In addition to acknowledging the *Surviving Six*, participants acknowledged the 'kitchen cabinet' who support Professor Herzberg: Sir David Cox, Professor David Hand and the Hon. Peter Milliken. Also honoured were the precious helpers who support Professor Herzberg: Gordon, Joyce and Anne. The efficient publications of the proceedings of the conference will now be supplemented by the thoughts of those present at the Castle in April 2016.

THE GLOBAL ECONOMY

The opening session on 21 April 2016 concerned the global economy. It began with a grand exposition by Professor O. Güvenen. He reminded us of an earlier lecture in which he had traced changes in the ranking of the world's largest economies. In 2010, the United States of America was most powerful. In 2015, United States of America; in 2020, China; in 2030, China; in 2040, China again is projected. But by 2050, India is projected to be the strongest economy in the world. France falls below the top ten in 2030. United Kingdom falls outside that inner circle by 2040. In 2050, the largest economies in the world will be India, China, the United States of America, Indonesia, Brazil, Nigeria, Russia, Mexico, Japan and Egypt.

The other changes mentioned by Dr Güvenen were to population. In 2010 the global population was 7 billion. By 2030 it will be 8 billion. By 2040 it will be 9 billion. Fortunately for the planet, the growth appears to be slowing.

Other changes noted included the shift in the centre of global economic gravity in the mid-Atlantic to a point between India and China. The advent of Egypt itself is a remarkable prediction, certainly in current circumstances. The growth of inequality was a major theme of this address. Inequality in income levels in OECD countries has risen. The contrast between the incomes of chief executives and average workers has become more marked. In the concurrent United States election, proceeding whilst we assembled at the Castle, this development has already taken on a political complexion.

The Hon. Peter Milliken explained the significance of the changes in the price of petroleum for the global economy. He described the growth in the number of free trade agreements. He pointed to the concurrent debate in Britain about the possibility of “Brexit” – the departure of the UK from the European Union. The world is constantly in a state of change. Nowhere more so than in the economy, so closely related to advances in technology and global values.

Professor David Hand gave a brilliant explanation on the improbability principle and applied it to the internet that has come to dominate the majority of human lives. He acknowledged the benefits of the new information technology, particularly in the instant access it provides to information. However, he pointed to the fact that airline bookings today travel through machines without a single human being having a remunerative task to perform. ‘We must think beyond the financial’, Dr Hand enjoined us.

Sir David Cox acknowledged that the value of the Castle conferences was that it took specialists outside their individual silos. He explained

the scientific work of von Neumann with his theory of games. He described the way that this theory was turned to expert economic analysis of the role of the corporation. He suggested that great lesson of the Castle for him was the special need for specialists to avoid “single dimensionalsim”.

These remarks led to an explanation given by me about the work of the High Level Panel created by the United Nations Secretary-General (Ban Ki-moon) to examine the challenge of access to all to essential healthcare. The adoption of the *Sustainable Development Goals* (SDGs) that include Goal 3 (promising the attainment of “healthy lives and well-being for all” by 2030) combined universal human rights goals with the operation of the global economy. The challenges of the world’s intellectual property (patent and copyright) regimes was explained. As was the “policy incoherence” that exists between new reward to inventors of new health technologies alongside the human right of access to essential healthcare, implied by the SDGs and human rights principles.

ENVIRONMENT AND EDUCATION

The balance of our debates on Thursday 21 April 2016 concerned aspects of the global environment alongside implications for education in the world of today. Dr Jim Beall recounted the problems that had arisen following the introduction of genetically modified organisms. He contrasted the responses to these developments in North America and in Europe. He emphasised the important point taught by Charles Darwin in *Origin of Species*. The ‘Rule of Variation’ is the way species have

evolved. All living organisms and institutions need to embrace this rule in order to survive.

Dr Mark Lachmann, in his unique style, introduced three powerful stories to illustrate the importance of the human element as part of our environment. One of these stories concerned a 71 year old female patient who had recently taken her own life. The introduction of new legal rules in Canada for assisted suicide had presented serious challenges for the medical profession. Dr Lachmann described the differences of values on this and other topics in mid-city Toronto when compared with Baffin Island. He expressed concern about the risk of disrespect for the growing numbers in the population presenting with dementia and Alzheimer's disease. As usual, this talk was most affecting.

Mr John Gerrard of the Manitoba Legislature, was unable to be present. But his paper was read. It addressed the controversies of the greenhouse effect in the world. And the challenge and problems facing legislators when called upon to address an issue that attracts hostile opinions and that is difficult to resolve on a purely local basis. When the news of Mr Gerrard's re-election to the Manitoba Legislature was announced, it attracted applause out of respect for his thoughtful engagement with public issues at this and earlier conferences at the Castle. Political leaders with these inclinations and abilities are important to every country.

John Burris of the Burroughs Wellcome Fund addressed to the issue of genetic modification. He described the operation of modified crops and the big investment of large corporations in promoting their use.

Specifically, he tackled and analysed the strongly divergent feelings that had emerged in some societies, hostile to the alteration of the germline of natural products. For some, the hostility derives from religious respect for natural products. For others, it arises from concerns about unexpected outcomes and for the implications of such modifications for diversity in human and other life forms.

When this session turned to the importance of education for environmental issues, Lord [Julian] Hunt began by invoking the spirit of *Magna Carta* 1215 and the capacity of great writers, like Charles Dickens, to enhance popular knowledge about scientific change. Lord Hunt examined the puzzle of where truly original ideas come from. How are thoughts that go beyond the physical world stimulated in the human mind, with its capacity for speculation about the unknown. He urged the value of education to prepare the human mind to 'think big thoughts'. These will tend to promote originality and stimulate progress.

Dr J.M.R. Stone provided participants with an update on global developments responding to climate change. He explained the origins and work of the Paris Summit in December 2015, addressing this topic. He described the available evidence suggesting that the rate of climate change on earth had accelerated and that heat had been increasingly transferred from land based elements into the global oceans. This had led to a rise in ocean temperatures in turn affecting climate change as well as marine life, including the world's coral reefs.

John Stone suggested that the world had turned a corner and had come to realise that climate change is real and scientifically based and now

sufficiently measured. He stressed the important duty of informed scientists to teach the truth and to speak truth to power.

Professor Ian Burton described a number of extreme events that had impacted the world in recent decades. He identified the tools that had been provided to humanity by technical advances that allowed analysis and measurement of important changes. These tools included the internet itself. Global changes meant that humanity was in a race between a catastrophic potential and an effective human response. He contrasted the political language of 1992 in Rio with that being used today. In 1992, the world had acknowledged a 'common but differentiated responsibility' to protect the global environment. In 2015, the notion of common responses had been accepted. The emphasis was now on these and not on differentiated obligations.

Mr Steve Szuroni turned to a consideration of the importance of data and evidence as a foundation for human progress. Fraudulent data and misinformation can result in impeding effective policy decisions. He drew a distinction between innocent misanalysis and true fraud in science. He viewed his task as being a kind of policeman for assuring the accuracy of data. This talk led to a healthy debate on the incidence of fraud in science and statistics. Sir David Cox could remember only one case in his career where he felt a colleague had deliberately used falsified data. However, the consensus of discussion suggested that the incidence of fraud was on the increase; that new technology facilitated it; but also facilitated detection of instances of fraud and plagiarism. This was a new debate for the Castle. It attracted healthy differences amongst the contributions.

A special session on the afternoon of 21 April 2016 turned to examine considerations of privacy, confidentiality and fraud.

Dean William Flanagan of the Law School at Queen's University in Ontario courageously introduced slides to illustrate the recently revealed *Panama Papers*. These documents, purportedly secured from a lawyer's office in Panama by investigative journalists, revealed deposits of huge funds and personal bank accounts allegedly made by high level political figures in a number of countries (including Iceland, Pakistan and elsewhere) raising suspicions of corruption and resulting in at least some resignations and many investigations.

The *Panama Papers* revived memories of issues discussed in earlier sessions at the Castle, including the *Pentagon Papers*; the Assange papers and revelations of Edward Snowden. Snowden had disclosed facts allegedly based on his previous work for the United States CIA, and its global surveillance programmes involving the scrutiny of citizens without prior judicial or other authorisation. Defenders of the revelations have invoked the duty of whistle-blowers to disclose high level illegality and wrongdoing. Critics question the "heroic deeds" of journalists and the need for an effective response to the enhanced dangers of terrorism and anti-constitutionalism. Dean Flanagan went on to explore the likely future of investigative journalism to produce more outcomes of this kind.

Dr David Hand examined attitudes of the lay public to data sharing. Whereas there was acceptance of sharing about the anonymised data, the public was often anxious about sharing information about individuals without their knowledge or consent. Dr Hand defended some unconsensual data sharing. He urged that public scepticism required

the antidote of education. Other participants suggested that a provision for the scrutiny and the independent authorisation (including judicial) would sometimes be necessary.

In this session, this present rapporteur presented a paper on the protection, or lack of protection, of individual privacy, especially in English speaking countries. He described the Australian experience whereby the law of defamation had been varied originally to require the proof of public interests of benefit to justify disclosure. Truth alone was not enough. This added element protected privacy. However, in changes to the law, the added component had been deleted in Australia, leading for calls for enhanced, separate and specific protection for the publication of private information.

There was some discussion about the issue, current in the UK at the time, of a restraining injunction to prevent disclosure of the fact that a 'celebrity' had engaged in a 'threesome' sexual encounter with two other adults. Some participants felt that restraining injunctions were undesirable in themselves. Others asked, so long as the participants in a sexual activity were adults of full capacity, what value was achieved in publishing such private facts? Generally speaking, some such issues are affected by destructive constitutional provisions or legal traditions in different countries. The invasions of media interests for the purpose of corporate profits was resented. But the need to preserve high levels of free expression was recognised. The advent of the internet had increased the damage done by traditional publication. Social media had also increased the premature disclosure of personal information in ways that were likely to haunt the lives of young people, unless enhanced rights to "take down" some published data were provided for in the law.

EDUCATION AND MISCELLANEOUS TOPICS

On Friday, 22 April 2016, the participants reverted to consideration of issues in the field of education. Mr Ian Gibson discussed so-called formulae produced by and for Ministers in Britain, allegedly to assist in their making public policy decisions. Often, such formulae were the handiwork of officials, aimed at protecting their powers. Sir David Cox described one such formula related by Mr Gibson as the work of an econometrician. He declared it could 'surely not be the work of a mathematician'.

Mr Gibson examined the changing university scene in Britain; the increased commercialisation of universities; and tuition fees and burdens especially on overseas students. He advocated review of these developments. He also said that students should be encouraged to have fun at university. He deplored the growth of private school education at the expense of universal free education.

Dr Keith James introduced a subject long neglected in the Castle, namely the role of religion in society and education. He remembered a teacher telling his class in an all boys' high school about the beauty of a mathematical formula. The kind of beauty that was then on the minds of the male pupils was of a rather more basic character. Dr James acknowledged that teaching science in schools was often a great challenge. However, so was instruction on ethical and moral issues and on spiritualism as a persistent feature in human existence. He recounted a lovely story of a question directed by the later English composer Ralph Vaughan Williams of his mother concerning the work of

his uncle, Charles Darwin on evolution. Did this disprove the existence of God asked the young Ralph? The mother told him: 'the Bible tells us that God created all living things in six days. Your uncle Charles thinks it took a bit longer. But it does not matter. Either way, God's creation is wonderful'.

One of the dangers about the decline of spiritualism in western society is the vacuum it presents to the advent of those with an obsessive and fanatical religious conviction. This was a challenge now being faced in Europe with the flood of refugees coming from non-Christian countries. How would western irreligiosity catch up with religious extremes?

Professor Lewis Wolpert reverted once again to the issue of mental health and the need to speak openly about it. He described the high levels of mental illness in the UK and like countries. He disclosed the expense and difficulty of treatment. He urged candour and leadership on the topic. His own personal revelations have been an important contribution to understanding.

Dr Frank Berkshire reverted to free speech as it affected education, especially on the question of values. He criticised 'political correctness', instancing the proposal to remove references to Cecil Rhodes at the colleges in Oxford, since rejected. He said that the logic of such attitudes was that Imperial College would have to be 'decolonised'; that King's College would have to be republicanised; and that any time that a bracing, novel original idea was raised, educators had to give a warning that they were about to shock their audience. Shocking the audience and provoking new and different thinking was the precise purpose of education at every level, but particularly at universities.

Sir David Cox declared that he had now reached such a great age that he could talk about whatever he liked. Therefore he turned his sights on the growing bureaucratic character of universities today. He appealed for a recognition of the importance of quality of life and of teaching students to ask the 'big picture' questions. Upon many such subjects there was no mathematically accurate or inaccurate answer.

Paul Dufour opened his remarks, from his own cultural background, with words of the French language. This reminded the participants at the Castle that, beyond its perimeter were vast lands that spoke no English and lived, dreamed and thought in completely different linguistic traditions. Mr Dufour spoke of his hope of a renaissance in statistics in Canada following the election of the new Trudeau Government. He urged the participation of global youth in discussions about the purposes and content of education. He said that youth leaders should be visible and vocal. On the preceding day discussion of climate change at the United Nations coincidentally had been addressed by such a youth leader. Introducing young science students and researchers to politicians and officials was an important objective, reinforced by Ian Gibson from his background in political life.

Dr Vince Gallucci described his work in the circumpolar region of the northern hemisphere. He explained the role of the Arctic Council; the participation therein of Inuit; the study of whales; and the common objective of participating countries such as Russia and the United States to ensure that the Arctic remains arms free.

Dean William Flanagan again took his life in his hands by using slides to illustrate a talk on the global system of intellectual property. This exposition, recounted a number of courageous initiatives taken by Brazil to safeguard the health of its population. This presentation supplemented well the description by this rapporteur concerning the current work of the High Level Panel on which he serves.

Andrew Hill explained the work in which he was engaged in the field of health and disability in New Zealand. He recounted a number of tragedies that have arisen through mistakes and inadequate procedures in healthcare in hospitals. He described consultations taken in New Zealand with sources various for moral principles, including bishops. In an era of empty church pews, some participants thought that new and additional sources for moral guidance would now be necessary.

Dr Keith James took the participants through some of the aspects that lay behind the Brexit movement in Britain. He suggested the importance of Parliamentary sovereignty, which was seriously compromised by membership of a body such as the European Union. On the other hand, the integrated global economy and modern technology already imposed limitations on complete isolation of lawmakers in any country of the world. Finding the correct balance between local power and global and regional power was a type of 'federal' issue that could not be escaped in an age of increasingly close integration.

A panel of participants then re-examined the many suggestions that have arisen during this 21st session at the Castle. The panel was deftly chaired by Professor Gerald van Belle. He opened that dialogue with a family story concerning a young man who had embraced Islam and gone

to Europe in search of adventure and love. The story of a family crisis like this ensured that the ensuing panel kept its feet on the ground. Great issues of the global environment, global economy and global trends in university education are played out on a canvas upon which the chronicle of individual lives is drawn. The challenges faced by individuals and families remain the recurring ones, familiar to every generation of humanity. Sometimes those challenges involve emergencies and complexities that divert attention to the great themes of humanity that usually engage dialogue at the Castle conferences.

QUEEN'S BIRTHDAY AND DINNER ADDRESS

In accordance with tradition, the annual dinner was held in the Castle dining room on 22 April 2016. The participants were regaled by this reporter with a toast to Her Majesty, Queen Elizabeth II on the occasion of her 90th birthday. All of the participants present honoured this toast by drinking to the health of the Queen, whose service has extended throughout the life of the Castle conferences, and long before.

The annual address at the dinner was provided in 2016 by Professor A.F. Merry, Head of Medical Sciences at the University of Auckland in New Zealand. He recounted the way in which empirical study could sometimes produce paradoxical, puzzling and even shocking conclusions. Great attention was paid to that part of Professor Merry's speech which recounted the measurable value to human health of the consumption of modest amounts of alcohol.

Given the widespread assertion that the fruit of the grape was a devilish concoction with no moral value, the participants at the dinner were

shocked and some were mildly surprised by outcome of clinical studies on this topic in New Zealand. These showed, repeating research done earlier and elsewhere, that consumption of one, or at a pinch two, glasses of red wine with meals each day left the recipient in a better state of health than that enjoyed by a strict teetotaler. Because, to some participants of a Calvinist persuasion, this data appeared yet another challenge to moral orthodoxy, it reinforced in a most pleasant way a recurring theme in Castle conferences. This was that scientific outcomes demand a neutral approach, open mindedness and reliance on empirical data. Prejudice, presupposition and intuition often need to be challenged and overturned. Dr Merry made this point entirely clear. He then raised a glass in a toast to Dr Herzberg in which all participants of the dinner joined, with greater enthusiasm than might earlier have been the case before they heard of the health benefit of what they were doing.

SECURITY AND THE GLOBAL ECONOMY

On Saturday 23 April 2016, the participants acknowledged St George's day. Specifically, they remembered, and many alluded to, the day that was both commemoration of the birth of William Shakespeare and of the 400th anniversary of his death.

Professor Jim Beall examined global banking and internet security. He urged the need for a universal protocol for access to the internet. He described the way in which, to some extent, the United States Constitution had provided protections for privacy. However, he recounted serious security breaches that were occurring in bank records and the way in which, when an intrusion passed the threshold of bank

security, it gave the intruder access to huge amounts of personal information that would normally be regarded as private or even secret.

David Strangway described his 20 years' service in the cause of a comprehensive test ban treaty for the international community. He recounted his pursuit of this objective and way it now permits scientists to 'listen to the earth' and to report instantaneously about explosive tests (including by rogue states) of nuclear weapons that can threaten the safety of people everywhere. He described the strong concern in the global scientific community about nuclear weapons. He advocated the development of networks amongst scientists to emphasise the essential unity of the human species and its common interest in the adoption of national scientific policies that would defend and preserve essential human values.

Dr Strangway paid tribute to colleagues who had worked on the test ban treaty. He described how they had been brought together again, 20 years after the treaty was negotiated. Speaking with the diplomats who had the responsibility of securing agreement to the terms of the treaty, he realised how progress can sometimes be made in international law, step by step. David Strangway's speech was arresting. It lent credence to a suggestion made by this rapporteur earlier that a future session at the Castle should be devoted to consideration of the associated topic of nuclear non-proliferation. People who lived through the Second World War and its termination by nuclear weapons remain fearful of those weapons because of the destruction they caused in 1945 in Japan. Putting them under effective control and out of risk was still a major challenge for humanity. David Strangway agreed on that challenge.

Professor Alan Merry examined the perplexing question of what the tiny individual can do to respond to the danger of the global economy and the perils to global security. He took the participants back to the environment of the hospital in which he works and the way in which their administrators can make small but noticeable changes that contribute to containment of global climate change. He acknowledged that some developments, such as interconnected volcanic explosions, are beyond human control. But others can be addressed by efficient individual decision-making. For example, reducing the consumption of meat in the world would be a significant contribution to reducing methane in the atmosphere caused by livestock, bred for consumption. Meat, he pointed out, was a very inefficient way of providing protein for human life. Each individual, he urged, should adopt an ‘eco-budget’ and consider the ways in which the individual’s actions increase or reduce the sources of climate change.

This rapporteur then gave the participants an update about the follow-up to the report of the United Nations Commission of Inquiry on DPRK (North Korea). The content and immediate consequences of that report¹ had been given at earlier conferences at the Castle. Indeed, his original appointment to chair the inquiry had first been raised when the rapporteur was at the Castle in April 2013. The United Nations system had responded with effectiveness to the report. It had been endorsed successively by large votes of the Human Rights Council in Geneva, the General Assembly in New York and (unusually for a human rights report) by the Security Council in December 2014 and December 2015. More recently, on 29 February 2016, following events in North Korea, the Security Council had reverted to the issue for a third time. It adopted a

¹ <http://www.ohchr.org/EN/HRBodies/HRC/CoIDPRK/Pages/CommissionInquiryonHRinDPRK.aspx>

resolution imposing increased sanctions on North Korea. It had done this by the unanimous vote of the Security Council. That strong decision rebutted the suggestion that geopolitics would always frustrate any action adverse to the North Korean regime.²

In other ways too, the United Nations had implemented aspects of the report. These include the establishment, by the High Commissioner for Human Rights of a field office in Seoul, Republic of Korea (South Korea) to continue the work of gathering testimony about human rights violations and crimes against humanity. A recent meeting of the Human Rights Council had decided to renew the mandate of the Special Rapporteur on North Korea. Furthermore, it accepted a proposal that a high level committee should be created to consider alternative means of ensuring accountability for crimes against humanity, in addition to the International Criminal Court. Unfortunately, the recent DPRK fourth nuclear test; missile tests; and submarine tests had soured the international reaction. ROK had closed the participation of its nationals in the Kaesong Industrial Zone. Moreover, the legislature in ROK had enacted a *Human Rights in North Korea* statute. Proposed for an enhanced people to people engagement had not been successful. The bellicose attitude of DPRK was apparently connected to the conduct in 2016 of the first plenary meeting of the Korean Workers' Party in more than 30 years.

There was a lively discussion of this report. Concerns about isolating DPRK were expressed. However, there was also resolution about the likely continuance of the human rights violations revealed in the

² United Nations, Security Council, Resolution on Sanctions against the Democratic People's Republic of Korea, 29 February 2016, S/2016/202.

Commission report. The case was an object lesson in the acceptance and pursuit of global responsibility for human rights, which was an important development of the *Charter* of the United Nations and of the *Universal Declaration of Human Rights*.

FINAL SESSION AND THE FUTURE

The final session of the 21st meeting of the Castle conferences on Statistics, Science and Public Policy included closing remarks by David Strangway, Ian Gibson, Sir David Cox and this rapporteur.

David Strangway described the interrelationship between advances in the global economy and improvements in human rights and peace and security. He recounted from his own family history the importance of global health improvements in the saving of life and the ending of misery. From the standpoint of someone who had thrice been the chief executive of a Canadian university, he disclaimed the value of a 'one armed scientist', i.e. one who had firm and uncompromising views and might miss the nuances and needs of science policy. He said the universities, and the community, should encourage the public engagement of scientists so that many people would become aware of developments and participate in decision-making that grew most robust and informed as a consequence.

Ian Gibson declared that "everything" in public consideration of science policy was political. There should not be fear of this fact. It required that scientists should communicate their work more effectively to politicians. But is also required that politicians should make themselves aware of

developments in science and of its impact on society requiring political decisions to be made.

Sir David Cox concluded with words of praise for the contributions of statistics to the enhancement of informed and accurate decision-making by politicians, officials and lawyers. He was more sceptical about lawyers, whilst excluding the judges from most doubts on the basis of their uncorrupted integrity, at least in countries like those represented. However, generally speaking, lawyers needed lessons in mathematics and statistics as a foundation for public policy. Thinking that such issues can be addressed in opaque languages by words alone was unacceptable. Facing hard decisions with the aid of hard statistics was more likely to produce sound outcomes.

LAUGHTER, WISDOM AND RED WINE

It has become conventional in these reports to acknowledge the best humour offered during the conference.

As usual, Sir David Cox offered whimsy and good natured criticism of non-mathematicians in his charming way. He repeatedly declared that he did not know what to say and then proceeded to say it with common sense, brevity and relevance. He had told colleagues about his assignments at the Castle, and claimed that they looked at him with the wild surmise of stout Cortez and declared 'you've got to be joking!'

David Hand told a story to illustrate his expertise in probability theory. When two economists were walking together and one declared he had seen a two pound coin in the street, the other responded that this was

certainly wrong as if it had been two pounds, someone would have seen and claimed it earlier. Probably.

Gerald van Belle announced that “I’ve got an excellent memory, except I tend to forget things”.

Ian Gibson, hot for the discussion of genetically modified foods declared that the porridge in the Castle refectory seemed watery and colourless that day, suggesting that it was GM modified.

As usual Frank Berkshire must be awarded the accolade for 2016. He has mastered the rhetoric of humour, realising that it is based on the physical shock of facing inconsistent ideas placed together in the one sentence. Thus, he declared that he believed in “free expression”; so long as it was kept “rigidly under control”. He admitted that he had touched marijuana in his raw youth; but he thought he had not inhaled, although that might have been mistaken in consequence of his lost memory as a result of it. Referring to the United States proposal that students should be allowed to take guns into their classroom, he admitted that he found this ‘a trifle inhibiting’. Perhaps this was the quintessential English understatement that is celebrated and appreciated around the world.

The 2016 conference was blessed with lovely weather at the Castle. Good company, music and intellectual exchanges were at the highest level. Above all, the participants departed the Castle with a firm conviction that they should drink more red wine, although only on the medical advice of Dr Merry from far away New Zealand. With a little

luck, and these medicinal properties, they will return to report on their experiences in 2017.