College of Europe
Collège d'Europe

Brugge Natolin

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Rector of the College of Europe

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OPENING CEREMONY
ACADEMIC YEAR 2011-2012

Signor Presidente,
Dear Chairman,
Mijnheer de Gouverneur,
Mijnheer de Burgemeester,
Excellencies,
Dear Colleagues,
Dear Students,
Ladies and Gentlemen,

INTRODUCTION

Per il Collegio d'Europa è un grande onore poter dare il benvenuto al Presidente Giorgio Napolitano in occasione dell'apertura dell'anno academico 2011-2012 (duemilaundici - duemiladodici).

Following our Chairman, allow me to express the gratitude of the College of Europe to President Napolitano for having accepted to take part in this ceremony marking the official opening of the academic year 2011-2012 here in Bruges. We feel particularly honoured by the presence of a European Head of State who inspires as much respect as you do, Mr President.

This afternoon, I am supposed to report briefly on the College of Europe in 2011 and then present the Patron of the new promotion, Marie Skłodowska-Curie. However, since we are at the College of Europe, allow me first to say a few words concerning

[1] This is the version which was delivered in Bruges. The speech concerning the Patron, Marie Skłodowska-Curie, was first given in **Natolin (Warsaw)** on **29 September 2011**, where the **President of the European Commission, Mr José Manuel Barroso,** delivered the keynote address.

the current state of the European Union, which is at a critical juncture.

The European Union in 2011

The European Union is going through a severe financial and economic crisis and in this troubled time there is a need for European leaders capable of statemanship.

The depth of the crisis which hits Europe is due to a **lack of Europe**.

It is striking to observe that the economic figures for the Eurozone taken as a whole are not worse, but rather better than for the United States, Japan or the United Kingdom. However, the Eurozone suffers from a lack of homogeneity. That defect, which was present at the start, should have been gradually corrected. However, this did not happen because Monetary Union had not been accompanied by a true form of Economic Union, which itself would have required a significant degree of Political Union. We also know that the imperfect substitutes that had been put in place, the so-called Maastricht criteria, could not be effectively enforced by the European institutions, starting with the Council, the organ representing the Member States.

In order to resolve the crisis afflicting the Eurozone, and beyond the entire European Union, **more Europe** is needed, a Europe where responsibility and solidarity can be combined, a Europe which also shows to the citizen that, if indeed sacrifices cannot be avoided in the short term, there is nevertheless hope that economic and social growth can resume in a not too distant future, economic growth being in any case needed for the resorption of sovereign debts over the long term.

This is the historical task which European leaders have to fulfill in the months ahead, starting this evening in Brussels. If they do not, the European integration process might start unraveling, because a failure of the euro is likely to translate into a failure of the internal market. At the same time, the unique European experiment in integration through democratic means would lose its power of attraction in the eyes of the Europeans, in the eyes of the neighbours and in the eyes of the world at large. And the voice of Europe in the world would grow dim.

The College of Europe in 2011

Coming now to the College of Europe, I should first mention that this year we are hosting 435 graduate students, 315 in Bruges, 120 at our Natolin campus, representing 56 different nationalities, among whom we count 48 Italian nationals, 35 in Bruges, 13 In Natolin. Together, the latter represent the second largest national group.

The College continues to try to widen its student recruitment. However, here, much depends on the availability of scholarships. Some countries and regions in Europe have had to reduce their contribution because of budgetary difficulties. On the other hand, there is also good news. The number of ENP scholarships has considerably increased this year, this thanks to the European Parliament. The number of scholarships for Turkish graduates has also gone up. And recently, we have been informed that the Lombardia Region would offer a significant number of scholarships to graduates of the Region starting next academic year. Banco Santander will also finance additional scholarships.

In order to strengthen its academic programmes, the College is increasing its permanent academic staff. I should mention here in particular the creation of a new chair focussing on European Neighbourhood Policy at our Natolin campus.

The College is also investing in the consolidation and strengthening of its relations with its vast alumni network. In passing, I would like to inform you that one of our alumni, Ms Helle Thorning-Schmidt, has become Prime Minister of Denmark. For the College this is a first, for until now we had to satisfy ourselves – if I may say so – with alumni becoming Minister for Foreign Affairs, Minister for European Affairs or Vice-Prime Minister.

Een woordje nu in verband met het College en de Stad Brugge. Zoals u waarschijlijk reeds weet, is de tweede fase van de restauratie van Verversdijk nu volop aan de gang en het loopt heel goed. Wij hopen dat de volledige restauratie van Verversdijk voltooid kan worden begin 2013. Zoals vorig jaar vermeld werd, zal het grootste gedeelte van de kosten gedekt worden door de steun van de Vlaamse regering in het bijzonder, samen met de Provincie West-Vlaanderen, de Stad Brugge, de Nationale Loterij en enkele privé sponsoren.

As each year, the College of Europe wishes to thank the European Union, the Belgian Ministry for Foreign Affairs, the Flemish regional and local authorities, the Polish Government and the many European national and regional governments – among which the Italian Government and some Italian regions – as well as many private partners for their continuous support. This support is essential if the College is to pursue its mission, which is to prepare young graduates to play a leading role in Europe, or in third countries dealing with Europe, in the future.

MARIE SKŁODOWSKA-CURIE

This year marks the 100th anniversary of the Nobel Prize in chemistry awarded to Marie Skłodowska-Curie, her second Nobel Prize in fact.

It thus seemed appropriate to chose this great scientist and remarkable woman, who was born in Poland and achieved scientific fame in France, as patron of the College of Europe 2011-2012 promotion. It also happens that the Radium Institute she helped create in Poland is located not far from the Natolin campus and that Poland holds the rotating Presidency of the European Union.

Marie Skłodowska was born in Warsaw in 1867 and died in Paris in 1934. She has been the subject of many biographies. She wrote herself some "Autobiographical Notes" and a life of her husband Pierre Curie, where she retraces the research activities they carried out together. However, today I will not present you an abridged biography of her or a detailed chronological account of her life. Rather I will organise my presentation around a few telling pictures, telling because they symbolise her achievements and her life trajectory.

La première de ces photos est une photo prise lors du Premier Conseil Solvay au début de novembre 1911. Qui voit-on sur cette photo ? Vingt-quatre personnes. Presque tous les grand noms de la physique du début du XXème siècle, réunis à Bruxelles grâce à d'un mécène, l'inventeur et industriel belge Ernest Solvay. Parmi eux, Henri Poincaré, Jean Perrin, Hendrik Lorentz, Ernest Rutherford, Max Planck, Paul Langevin et le jeune Albert Einstein. Tous des hommes, à une exception près, Marie Skłodowska-Curie, seule femme présente à ce congrès, assise à côté de Henri Poincaré. Elle était alors âgée de 44 ans, et depuis plusieurs années déjà, elle était reconnue au nombre des tout grands savants de son temps.

En 1903, à 36 ans, elle avait obtenu le Prix Nobel de physique, en compagnie de son mari Pierre Curie et de Henri Becquerel. Elle était la première femme à acquérir cette distinction. En 1906, après la mort de Pierre Curie, elle se vit offrir la chaire de physique à la Sorbonne, première femme à occuper une telle charge. En 1911, deux jours après le Congrès Solvay, l'Académie des Sciences de Suède lui décernait un second Prix Nobel, celui de chimie, et à elle seule cette fois.

Elle devenait ainsi la première personne à recevoir deux Prix Nobel, ce qui à ce jour n'a été le fait que d'un nombre très réduit de savants. Marie Skłodowska-Curie fut aussi la première femme à devenir membre de l'Académie française de médecine en 1922, ce qui corrigea sa non-élection à l'Académie des sciences en 1911, non-

élection de justesse, due à un mélange de chauvinisme masculin et de conservatisme politique.

Les recherches ayant valu à Marie Skłodowska-Curie ses deux prix Nobel, et qui expliquaient sa présence à ce 1er Congrès Solvay, elle les avait menées 10 ans durant avec son mari Pierre Curie et les avait ensuite poursuivies seule après la mort accidentelle de celui-ci en 1906.

La rencontre de Pierre Curie et de Marie Skłodowska en 1895, leur mariage en 1896, la naissance de leurs filles Irène et Hélène, leur dix années de vie et de recherches communes dans des conditions de travail sommaires constituent à tous égards une belle aventure humaine que l'on a plus tard paré d'une aura quasi mythique, sinon mystique. Elle, jeune diplômée polonaise, animée d'une intense ambition de découverte et qui venait d'acquérir très brillamment une licence de science physique et une licence de science mathématique à la Sorbonne. Lui, jeune physicien français, à l'esprit concentré et à l'allure rêveuse.

De huit ans son aîné, Pierre Curie était déjà connu internationalement pour ses travaux en cristallographie, même si ses mérites scientifiques tardaient à être reconnus par l'université. A vrai dire, Pierre Curie et Marie Skłodowska ne poursuivaient pas plus un plan de carrière qu'ils n'ambitionnaient gloire sociale, récolte d'honneurs ou richesses matérielles. Mais ces libres penseurs – elle avait abandonné la foi catholique, lui n'y avait jamais adhéré – étaient habités d'une religion commune : celle de la recherche scientifique désintéressée, conçue comme une contribution au progrès de l'humanité dans l'esprit positiviste de l'époque.

En quête d'un sujet de thèse de doctorat, Marie s'intéressa à la radioactivité produite par l'uranium. Ce phénomène consistant en la production par l'uranium et ses composés de rayons invisibles, capables de traverser une paroi opaque, venait d'être mis en évidence par Henri Becquerel, dont les recherches s'inscrivaient elles-mêmes dans le prolongement de la découverte des rayons X par Roentgen.

Les recherches entreprises par Marie et Pierre Curie permirent de mesurer de façon précise ce phénomène de radioactivité – le terme vient d'elle – et de découvrir à partir du minerai d'uranium deux substances nouvelles qu'elle nomma radium et polonium, ce dernier en l'honneur de la Pologne, le radium produisant un rayonnement intense à distance, le second ne rayonnant que dans un très court espace.

Certains ont estimé que Marie n'avait été que l'assistante de son mari, ce qui n'est pas exact. S'ils travaillèrent ensemble, comme leurs notes de recherche le prouvent, si elle utilisa au départ de ses analyses une méthode mise au point antérieurement par Pierre Curie et son frère Jacques, il apparaît aussi que c'est elle qui eut l'intuition décisive, the « decisive insight ».

Analysant l'intensité de la radioactivité produite par des matières premières contenant de l'uranium, elle se rendit compte que cette intensité n'était pas proportionnelle à la quantité d'uranium, mais beaucoup plus élevée. Elle en déduisit l'hypothèse que cette radioactivité très intense devait être liée à la présence en très faible quantité, à côté de l'uranium, d'une substance inconnue extrêmement radioactive. Comprenant tout l'intérêt de cette idée, Pierre Curie abandonna ses travaux en cristallographie pour se consacrer à la mesure de la radioactivité, tandis que Marie s'attachait à identifier et à isoler l'élément source de cette radioactivité intense. Ce ne fut qu'au terme d'analyses longues et éprouvantes, qui prirent plusieurs années, que le radium pût finalement être isolé, sachant qu'il n'est présent dans le minerai d'uranium que dans une proportion infinitésimale (1/100.000.000). Marie Skłdowska-Curie établit que la radioactivité était une propriété atomique du radium, propriété qui fut ensuite expliquée par le physicien néo-zélandais Rutherford.

Le Prix Nobel de 1903 apporta aux époux Curie, à Pierre en particulier, honneurs, intérêt du grand public et attention des journalistes, choses qui leur pesaient beaucoup, eux qui privilégiaient la quiétude et voulaient maintenir une vie privée. Mais ce Prix Nobel eut au moins l'avantage de leur donner les moyens de poursuivre leurs recherches dans de meilleures conditions, lui devenant titulaire de la chaire de physique à la Sorbonne, elle devenant son chef de travaux en charge du laboratoire.

La mort de son mari en 1906 la laissa désemparée, comme en témoignent les notes poignantes qu'elle consigna dans un journal intime qui ne fut publié que longtemps après sa propre mort. Marie Skłodowska-Curie n'était pas la personne froide et austère que certaines représentations d'elle pourraient laisser croire. En attestent également les lettres, imprégnées d'une tendresse réservée, qu'elle échangea sa vie durant avec ses filles.

Après 1906, Marie Skłodowska-Curie affina ses recherches concernant le radium, dont entretemps, les applications thérapeutiques, entre autres pour lutter contre le cancer, avaient été découvertes suite à un accident fortuit survenu à Becquerel et à une expérience délibérée menée par Pierre Curie.

Ni Pierre, ni Marie Curie n'avaient voulu prendre de brevet sur la méthode de production du radium, qui se développa ensuite de façon industrielle, ou sur ses applications.

Nous connaissons maintenant des raisons de la présence de Marie Skłodowska-Curie au 1er Congrès Solvay de physique et des Prix Nobel lui furent octroyés. Elle était la 1ère femme dont l'oeuvre scientifique fut reconnue et célébrée avec autant d'éclat par la société.

Dès l'antiquité, l'on trouve pourtant en petit nombre des femmes qui manifestèrent un intérêt et un talent certain pour la science ainsi la fameuse Hypathie, qui à Alexandrie, au début du Vème siècle fut mise à mort par des chrétiens fanatiques. A partir des XVIIème et XVIIIème siècles, de véritables femmes de science apparaissent, ainsi la Marquise du Châtelet, l'amie de Voltaire, qui traduisit du latin en français les Principes de Newton en leur donnant une formulation plus intelligible et en améliorant sa définition de l'énergie.

Le nombre de femmes de science s'accrut au XIXème siècle et l'on peut citer ici de grandes mathématiciennes telles que Sophie Germain et Sofia Kovalevskaia. Toutefois jusqu'à Marie Curie – et même après elle – ces femmes souvent souffrirent de discriminations et ne furent par reconnues à l'égal de leurs collègues masculins. Pensons ici, entre autres, à Maleva Maric, la première épouse d'Einstein, qui joua un rôle important, mais méconnu, dans la formulation mathématique de la théorie de la relativité restreinte ou à Lise Meitner, qui aurait dû recevoir le Prix Nobel pour ses travaux sur la fission nucléaire ou encore à Rosalind Franklin dont le nom aurait dû être associé à ceux de Crick et Watson pour la découverte de la structure de l'ADN.

Le petit nombre de femmes de science, encore aujourd'hui, tient dans une large mesure, à la condition réservée aux femmes dans des sociétés dominées par des hommes et, au départ, aux différences dans la façon dont garçons et filles sont souvent éduqués, selon l'idée que seules les mâles seraient capables d'une pensée rationnelle et de faire oeuvre scientifique.

Il y eut pourtant des penseurs, Platon dans l'antiquité, Comenius et Poulain de la Barre au XVIIème siècle, qui prônèrent une même éducation pour les hommes et pour les femmes au nom de leur égalité fondamentale.

Il est symptomatique de constater que, en règle générale, les femmes qui, dans le passé, se sont vouées à la science avaient bénéficié dans leur jeunesse d'une

éducation libérale et de parents, en particulier d'un père, qui n'avaient pas restreint leur horizon intellectuel.

That was precisely the case of Marie Skłodowska. She was the fifth child of a Polish family belonging to the lesser nobility but with limited financial means as it had been dispossesed of its former landholdings as a result of the Russian occupation. Her father and her grandfather, on her father side, had studied physics and her mother was active in the field of education. In her family, the study of mathematics and science was not seen as the preserve of men.

She grew up in Warsaw during a period of intense russification and where the use of the Polish language was banned in state schools. She and her family were part of a segment of Polish society, that one might call the Polish gentry, which would put great faith in education and in keeping Polish alive in order to ensure the survival of the Polish nation despite foreign occupation.

Marie Skłodowska always ranked first of her class. Initially, she was interested in literature and she learned foreign languages, then became attracted by mathematics and science. It is in Warsaw that she did her first experiments in a laboratory.

As she could not undertake university studies in Poland, she needed to go abroad. However, due to her lack of financial resources, she worked for several years as a governess for two Polish families. Actually, she entered into a sort of pact with her eldest sister Bronislawa, who wanted to study medecine in Paris. Marie would help her family and Bronislawa financially and would later join her in Paris. In the meantime, in parallel with her work as a governess, she would try to improve her background in mathematics and sciences in order to prepare herself to study at the Sorbonne.

In 1892, when she was 25, she left Warsaw for Paris and we know how succesful she would be first as a university student, then as a researcher and a scientist.

She would always keep contact with her Polish family and with Poland, where she often returned. It is also in Poland that she developed her love for nature and the countryside, which she would later share with her husband and her two daughters. It is also thanks to her Polish environment that she became passionate about education. She organised classes for young children in the Polish countryside, then would participate with some of her friends in Warsaw in the setting up a kind of free academy where each would teach the others in his or her respective discipline.

Later, after the death of her husband, she would create with a few French colleagues an informal school where their respective children would be taught mathematics and sciences in a relaxed and lively manner, this in combination with physical education and sports.

Actually, two of these French colleagues, Jean Perrin and Paul Langevin, were also at the First Solvay Conference of 1911 and can be seen on the picture.

Coming back to that picture, I now have to mention an episode in her life, particularly painful for her, considering that she was a very private person.

In early November 1911, she was about to get her second Nobel Prize and was at the apex of her scientific career. However, at that very moment, she was also about to enter into the eye of a violent public storm.

Among the famous physicists who appear in the picture, one sees standing behind Marie Curie, to the left of Einstein, Paul Langevin, one of her French colleagues and a former student of her late husband.

At the time that picture was taken, a French newspaper, with a massive circulation, that today we would call a tabloid, published a front page article alleging that Paul Langevin, who had an unhappy marriage, and Marie Curie, were united by more than their love for radium, that in fact they were lovers. And some of the letters Marie Curie wrote to Langevin, and which were later produced, show that indeed she felt passion for him.

That would mark the start of an ugly smear campaign. The French conservative press, the same which had hounded Dreyfus, would call her "a foreigner", "that Polish woman", responsible for the break up of a French married couple. She would be invited to leave the country. Neighbours would come to her house and insult her. She was even advised by a Swedish member of the Nobel Prize Committee not to come to Stockholm to pick up her Nobel Award.

She nevertheless went to Stockholm, replying with great dignity that her scientific achievements and her private life were separate matters. It seems obvious that, had she been a male scientist, she would not have received the same shameful treatment.

During that dramatic period in her life, she was able to count on the support of several friends, including Albert Einstein and Jacques Curie, Pierre's brother.

Nevertheless, she ended up nervously in shatters. She fell gravely ill and, for almost a year, she interrupted her research work and lived in a semi-seclusion.

She eventually recovered, she did not leave France, she went back to her lab and she did not show resentment vis-à-vis her country of adoption as another picture illustrates.

There one sees Marie Curie driving a small van, carrying an X-ray mobile unit, near the frontline in Northern France during the First World War.

When the war broke out in 1914, most of the male personnel working in research laboratories left to go fight the Germans. To be useful, Marie Curie launched a campaign for the purpose of equipping military hospitals with X-ray machines. More particularly, she thought of installing X-ray machines on light vehicles, whose engines would power the machines, and which could be driven up to field hospitals close to the frontline for the purpose of helping surgeons better treat wounded soldiers.

She proved to be a master organiser. Not only did she come up with the idea of creating these mobile X-ray units, which would be called "Les petites Curie", she would also collect the money and the pieces of equipment needed and instruct people on how to use the X-ray machines. Moreover, often accompanied by her daughter Irène, she would herself go close to the frontline and do X-ray photos of wounds suffered by soldiers. And in order not to depend on a driver, she learned how to drive and got her driver's licence.

Let us now move briefly to three other pictures. First, we see her in Washington in 1921 next to President Hardings and in 1929 next to President Hoover. Then in a picture taken in 1932, we see her walking in Warsaw next to the President of Poland, Mr Moscicki, on her way to lay the cornerstone of the Radium Institute bearing her name and which was designed to treat patients suffering from cancer. These pictures are illustrative of the later part of her life.

From the early 1920's until her death in 1934, she carried on her research work. Her laboratory in Paris attracted a growing number of young researchers. Among the brightest members of her team, one would find her daughter Irène and her husband Frédéric Joliot, who together would earn a Nobel Prize in chemistry in 1935 for having discovered artificial or induced radioactivity.

However, during that same period, she would devote a significant part of her time raising funds for the establishment of radium institutes. This meant that she had to

accept to become a public person, courting Presidents and Kings, addressing large audiences, giving interviews to the press, becoming the constant subject of attention of many, all things she much disliked. Overcoming her initial reluctance, she went to the United States in 1921 on the initiative of an American journalist, Mary Meloney, who mounted a fundraising campaign among American women in order to buy radium for her Paris institute. $ 100.000 were thus collected for the purchase of one gramme of radium. In 1929, she went back to the United States, this time collecting $ 50.000 to buy radium for the future Polish Radium Institute.

She, of course, deplored the way radium was being misused by some who, at the time, were taunting radium as a kind of universal cure. She was also aware, as much as Pierre Curie, of the danger of radioactivity being used for military purposes. But she was an optimist and trusted mankind to put it to good use.

During the 1920's, she also was a member of the International Committee on Intellectual Cooperation of the League of Nations, of which Albert Einstein was, at times, also a member. Marie Curie and Einstein had nurtured an enduring friendship and one can see them together in an evocative picture taken in Switzerland in the early 1930's. By then, both had achieved iconic status in the eyes of world opinion.

Her death in 1934 seems to have been the result of too much exposure to X-rays during the First World War.

Et maintenant, pour conclure, les deux dernières photos, celles du transfert en 1995 des restes de Marie Skłodowska-Curie et de Pierre Curie au Panthéon français, par décision du Président Mitterand. Elle se retrouvait là en compagnie de ses collègues Jean Perrin et Paul Langevin, ce dernier avec lequel elle avait conservé d'étroits liens d'amitié jusqu'à sa mort.

Elle était la première femme a bénéficier d'un tel honneur à titre propre et – ironie révélatrice – à compter parmi les Grands Hommes auxquels la Patrie française exprime sa reconnaissance, selon les mots inscrits au fronton du Panthéon.

Chers étudiants,

J'espère que votre promotion sera fière de porter le nom de Marie Skłodowska-Curie, une grande savante, une femme intègre, courageuse, indépendante, indifférente aux modes et aux honneurs, qui, toute sa vie, brûla d'une passion obstinée, celle de faire progresser la science dans l'espoir d'ainsi contribuer au bien de tous.