

‘ORIGINS’:

AN INTERDISCIPLINARY CORE CURRICULUM FOR SCHOOLS IN THE U.S.A. AND AUSTRALIA

PRELIMINARY IDEAS

BY

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“‘ORIGINS’: AN INTERDISCIPLINARY CORE CURRICULUM FOR SCHOOLS IN THE U.S.A.”

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A powerful modern finding about education is that students learn by integrating new information within a framework of already familiar knowledge.¹ Understanding the intellectual maps that students bring with them to the educational process, and helping them construct better and more coherent maps is, therefore, critical to good education. This suggests that the most effective school curricula should be those which, like traditional creation stories, can help students integrate understanding across many fields, while encouraging them to continually question both the information and the maps they are using as their understanding becomes richer and more sophisticated. Students need a big picture that can be continuously adjusted and enriched as they adapt it to new ideas and new information. Yet few modern high school curricula (or college curricula for that matter) meet this basic requirement of coherence across disciplines. Instead, students are normally taught different subjects by different teachers, and in ways that do little to help them understand the links between different branches of knowledge. In this paper, I sketch out a high school curriculum that unites within a single, coherent program subjects from astronomy to geology to biology and history, all of which share the same basic idea: that the present can best be understood by understanding the past. Like traditional creation stories, this curriculum is all about origins, so I propose calling it: “‘Origins’: How Our World came to be as it is”. The “‘Origins’” curriculum could be taught at multiple educational levels and in many different ways, and would help students integrate knowledge across several historical disciplines from History to Biology and Cosmology.

THEMES

“‘Origins’” is about the origins of people, societies and the world we inhabit. It helps students understand how the different components of their world, from the Universe to planet earth to living organisms and human societies came to be as they are. By doing so, it can provide a rich, multi-tiered map of reality that students can appreciate at different levels of sophistication as they become more familiar with it in the course of their education. At every stage the curriculum would also encourage them to consider how what they have learnt about the past can help them think about the future.

The “‘Origins’” curriculum links disciplines that share a historical perspective on the past, though they are normally taught quite separately from each other. It unites these disciplines around the core story of origins, and by doing so it can help break down the traditional barriers between the sciences and the humanities.

STRUCTURE

Though linked by a single historical story, “‘Origins’” pursues its central questions across **four main domains of knowledge**.

Domain 1: The Universe: The first domain is the study of the Universe as a whole. This domain covers information and ideas normally confined to courses on astronomy, physics or chemistry. Students will be introduced to the origins of the Universe, stars and galaxies, and to the history of our Sun, the earth and the solar system. They will also be introduced to fundamental ideas from physics and chemistry so they can begin to understand the role of different forms of matter and energy, and how they have shaped our world. Eventually, students will be encouraged to consider likely futures for the Universe as a whole.

¹ “A key finding in the learning and transfer literature is that organizing information into a conceptual framework allows for greater ‘transfer’; that is, it allows the student to apply what was learned in new situations and to learn related information more quickly.” John D. Bransford, Ann L. Brown, and Rodney R. Cocking, eds., *How People Learn: Brain, Mind, Experience, and School*, Washington, D.C.: National Academy Press, 2000, p. 17. See also Sam Wineburg, *Historical Thinking and Other Unnatural Acts: Charting the Future of Teaching the Past*, Philadelphia: Temple University Press, 2001.

Domain 2: Planet Earth: The second domain is the study of our earth. This part of the curriculum touches on information and ideas normally studied within geology, geography, biology and environmental science. Students will learn about the origins and creation of our earth, its basic structure, the origins and evolution of life on earth, and the nature of the biosphere. Eventually, students will be encouraged to ask how what they have learned can help them think about the future of our earth and the biosphere.

Domain 3: Human Society: The third domain is the study of human society. In this domain, students will learn about the evolution of modern humans, and about world history from the Paleolithic era to the present day, including the Paleolithic migrations that peopled the world. They will also learn about the nature of the modern global community, its politics, economics and culture, and doing so will help them develop a sense of global citizenship. In this domain, too, students at higher levels will eventually be encouraged to consider possible futures for human society as a whole.

Domain 4: The USA: The fourth domain is the study of the U.S.A. This domain will focus on the geological history of the North American continent, and the geographical environment of the USA. It will explore the human settlement of North America late in the Paleolithic era of human history, and discuss the nature of the earliest human settlements in the continent. It will discuss the lifeways of the first inhabitants of the continent, and their relations to their environments. It will also explore the migrations and exchanges that have created modern US society. In this section of the curriculum, students will acquire a broad sense of the meaning of U.S. citizenship. As in the other domains, students at higher achievement levels will be encouraged to consider how what they have learned can help them think about the future of the U.S.A.

RATIONALE

What will be the benefits of introducing such a curriculum?

Unifying Knowledge: The “Origins” curriculum nests existing disciplines within each other so that students can easily see connections between domains of knowledge traditionally seen as quite separate from each other. How the U.S.A. of today emerged from the history of earlier societies in North America; how human societies are linked throughout the world; how human beings are linked to other living organisms; how the biosphere as a whole has evolved along with the earth; how our earth was produced as part of an evolving Universe. Drawing these links will help students understand the fundamental unity of modern knowledge, and see themselves and the society they live in as part of a larger, complex whole. The “Origins” curriculum provides a simple and natural way to bridge the divide between the Humanities and the Sciences.

Deepening Knowledge: The “Origins” curriculum can be introduced in different iterations and at different achievement levels at different stages of a student’s education. Students and teachers will experience it as an ascending spiral. They will benefit both from its familiarity (as they become more comfortable with the basic story at each iteration) and a growing awareness of increasing sophistication and detail (as each iteration introduces new complexities, subtleties and nuances). At the kindergarten and primary level, the “Origins” curriculum can be introduced as a simple, engaging and powerful story. Indeed, many elements of this story are already taught at these levels. (For several years, Chardi Christian, a professional storyteller, told a 25-minute version of this story in schools in Sydney, Australia.) In middle and high school, students can be introduced to more detail, to new problems, and also to issues of evidence and areas of controversy. At the upper levels, students can be encouraged to specialize in particular domains, depending on their interests and abilities. This is the point at which students or their teachers may decide to focus more closely on the subject matter of conventional scholarly disciplines from science to history or geography, but without the danger that they will lose sight of the many links between disciplines. By returning repeatedly to the same core story, students will acquire a deepening understanding of a familiar story, and a sense of knowledge itself as a process of deeper and deeper understanding.

Flexibility in Teaching and Learning: For teachers, the process of returning to a familiar story with new and more sophisticated questions will make it easier to assess progress than it is when each educational stage is associated with new information. Students, too, will have clear benchmarks for assessing their own progress as they measure their deepening understanding of a story whose basic outlines are already familiar to them. Teachers will find it is easier to adjust their teaching methods and to experiment with new teaching methods if they can take for granted a certain core understanding of the material they are teaching. Students will gain in confidence as they find

at each stage that they are building on a core understanding of the basic story of origins. The great variety of content in the “Origins” curriculum would also make it easier to mobilize the diverse skills and expertise that different teachers bring to the educational process. At upper levels, the curriculum would allow for highly specialized teaching, within a common framework.

RESOURCES

Currently, there are very few courses of the type described in this paper, so available resources for teachers are limited. However, there are now plenty of resources that could be used to develop such a curriculum.

Some Resources for developing an Origins Curriculum: I will begin by describing the resources I have helped develop during twenty years of teaching University-level courses that integrate understanding of the past at all possible scales. I began teaching such a course at Macquarie University in 1989. Those of us teaching the Macquarie course in “big history” (as we called it) soon found that there was a deep coherence to the course. Students were excited at its scope, and at the prospect of integrating knowledge from many different disciplines into a single, unified story. We also learned that the core story of “big history” could be appreciated at many different levels of sophistication.

In 2004, I produced the first modern text in big history. This was aimed at University students and a general readership. (David Christian, *Maps of Time: An Introduction to Big History*, Berkeley, CA: University of California Press, 2004. The book was awarded the World History Association prize for the best book in world history published in 2004.) I have also published a short history of humanity for high school students, linking human history to the larger story of big history. (David Christian, *This Fleeting World: A Short History of Humanity*, Great Barrington, MA: Berkshire Publishing, 2007.) Currently, with two colleagues, Cynthia Brown and Craig Benjamin, I am working on a University text on big history for McGraw-Hill. I have worked on the development of high school curricula in world history and big history in the US, and conducted several workshops for high school teachers of world history. Working with Ross Dunn of San Diego State University, and a large team of world history teachers, I have spent several years helping to develop an on-line curriculum in world history that links world history to big history. (*World History for Us All*: <http://worldhistoryforusall.sdsu.edu/>.) In the 1990s, I worked with Chardi Christian, a professional storyteller, on a 25-minute story version of big history that she told in NSW schools. In 2007 I recorded a series of 48 lectures on “big history” for an American company, “The Teaching Company”, that produces academic lectures for a well educated, and mainly adult audience. So I have experience of teaching such courses at several different educational levels. This experience has convinced me that the core story of “big history” can easily be adapted to skill and knowledge levels all the way from kindergarten to adult education.

Though there exist few syllabi in big history, in the last twenty years there has appeared a substantial amount of material that could be drawn on in constructing the “Origins” curriculum. There are now several big history courses in Universities in Australia, the Netherlands and the USA (including the extremely successful course taught at Macquarie University by Marnie Hughes Warrington). Fred Spier (who teaches at the University of Amsterdam), has compiled a preliminary bibliography of scholarly works on aspects of “big history”: <http://www.iis-communities.nl/portal/site/bighistory/page/f4605854-ef1e-4d45-00ce-0b1442c2a8a0>. More resources are listed in my own book, *Maps of Time*, and in the only other available book on big history, Cynthia Stokes Brown, *Big History: From the Big Bang to the Present*, New York and London: New Press, 2007. The breadth and diversity of the “Origins” curriculum means that there is much relevant material available on the internet, and this provides many opportunities for student research projects.

David Christian

[Curriculum Vitae available at http://www-rohan.sdsu.edu/dept/histweb/faculty_and_staff/documents/Christian_CV.pdf. I will be happy to make other resources available, such as my current University level syllabus in big history]

APPENDIX: INTEGRATION WITHIN A COHERENT SCHOOL CURRICULUM

How might the “Origins” curriculum be linked to other disciplines such as English, Mathematics and Foreign Languages, to create a sense of unity across all high school subjects?

There are many imaginative ways in which this might be done. Here is one possible approach. Just as the “Origins” curriculum rearranges existing disciplines in order to bring out what unifies them, so, too, I can imagine other major parts of the High School curriculum being linked to create a more unified educational experience for students at all achievement levels.

“Origins”, “Skills”, “Imagining the World”: For example, it might be possible to construct a curriculum with three main parts, of which the “Origins” curriculum was just one. A second part might be called “Skills”. It would teach general learning skills, as well as skills in Mathematics, Writing, Foreign Languages and other areas. A third part might be called something like “Imagining the World”. Whereas the “Origins” curriculum is held together by questions about the origins of the external world and how things came to be as they are, the “Imagining the World” curriculum would focus on more internal questions about how we imagine, understand and know our world. It would help students see knowledge as something constructed, as dependent on imagination as on evidence. It would touch on topics currently studied within English, Literature and the Arts—exploring how different human societies have understood the world and each other, how they have represented their world and told stories about it. The “Imagining the World” curriculum would also discuss the nature of knowledge, studying aspects of the Psychology of Knowledge and Learning as well as topics in Philosophy, Religion and Science as different ways of knowing and describing the world.

An Integrated School curriculum: There would be many natural links between these three parts of the curriculum. Several components of the “Origins” curriculum would make use of the mathematical, writing and foreign language skills taught in the “Skills” curriculum; while the “Imagining the World” sections would naturally raise questions about the nature of the knowledge described in the “Origins” curriculum, and about how that knowledge has been constructed and taught. Taken together, the three parts of the curriculum—“Origins”, “Skills”, and “Imagining the World”—would embrace all the major disciplines currently taught in schools: English, Mathematics, Science, History, Geography and Foreign Languages, and bring out the many links between them. Within a pedagogical framework whose overall shape is clear to both teachers and students, it should also be relatively easy to integrate other disciplines when and if it was felt necessary or valuable to do so in particular schools or in particular educational environments.

“‘ORIGINS’: AN INTERDISCIPLINARY CORE CURRICULUM FOR AUSTRALIAN SCHOOLS”

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San Diego State University
September 2008

On January 30 2008, the Australian Prime Minister, Kevin Rudd, announced the formation of a National Curriculum Board, whose task was to oversee the development of a national educational curriculum by the year 2011. This initiative creates a rare opportunity for fundamental educational innovation. In this paper, I describe one powerful form that these innovations might take. It describes a core syllabus called “‘Origins’: How Our World came to be as it is”. This syllabus could be taught at multiple educational levels and in many different ways, and would link knowledge across the three core areas of History, Geography and Science.

THEMES

“Origins” is all about how things, people and societies came to be as they are. It would help students understand how the many different components of the world they live in, from the Universe itself, to planet earth, to living organisms and human societies came to be as they are. By doing so, it would provide a rich, multi-tiered map of reality that students could appreciate at different levels of sophistication as they reach different stages of the educational process. At every stage the syllabus would also encourage them to consider how what they have learnt about the past can help them think about the future.

The “Origins” syllabus would link disciplines that share a historical perspective on the past, though they are normally taught quite separately from each other. It would unite these disciplines around the core story of origins, and by doing so it would help break down the traditional barriers between the two cultures of the sciences and the humanities.

STRUCTURE

Though linked by a single historical story, “Origins” would pursue its central questions across **four main domains of knowledge**.

Domain 1: The Universe: The first domain would be the study of the Universe as a whole. This domain would touch on information normally confined to courses on astronomy, physics or chemistry. Students would be introduced to the origins of the Universe, stars and galaxies, and to the history of our Sun, the earth and the solar system. They would also be introduced to fundamental ideas from physics and chemistry so they can begin to understand the role of different forms of matter and energy, and how they have shaped our world. Eventually, students would be encouraged to use the knowledge they have learned to consider the future of the Universe as a whole.

Domain 2: Planet Earth: The second domain would be the study of our earth. This part of the syllabus would touch on information normally studied within geology, geography, biology and environmental science. Students would learn about the origins and creation of our earth, its basic structure, the origins and evolution of life on earth, and the nature of the biosphere. Eventually, students would be encouraged to ask how what they have learned can help them think about the future of our earth and our living environment.

Domain 3: Human Society: The third domain would be the study of human society. In this domain, students would learn about the evolution of modern humans, about world history from the Paleolithic era to the present day, including the Paleolithic migrations that peopled the world. They would also learn about the nature of the modern global community, its politics, economics and culture, and doing so would help them develop a sense of global citizenship. In this domain, too, students at higher levels would eventually be encouraged to consider possible futures for human society as a whole.

Domain 4: Australian Society: The fourth domain would be the study of Australian society. This domain would focus on Australia’s geological origins and its geographical environment, on the settlement of Australia as part of the great Paleolithic migrations of our species, on the nature of the earliest human communities in Australia,

on relations between Australian people and the Australian environment, and on the evolution of contemporary Australian society. In this section of the syllabus, students will acquire a broad sense of the meaning of Australian citizenship. As in all the domains, students at higher achievement levels would be encouraged to consider how what they have learned can help them think about the future of Australian society.

RATIONALE

What will be the benefits of introducing such a curriculum?

Unifying Knowledge: The “Origins” syllabus nests existing disciplines within each other so that students can easily see connections between domains of knowledge traditionally seen as entirely separate from each other. How modern Australian society emerged from Australia’s past; how human societies are linked throughout the world; how human beings are linked to other living organisms; how the biosphere as a whole has evolved along with the earth; how our earth was produced as part of an evolving Universe. Drawing these links will help students understand the fundamental unity of modern knowledge, and see themselves and the society they live in as part of a larger, complex whole. The “Origins” syllabus provides a simple and natural way of overcoming the deep divide between the two cultures of the Humanities and the Sciences, and a simple way of linking the three disciplinary areas of History, Geography and the Sciences.

Deepening Knowledge: The “Origins” syllabus can be introduced in different iterations and at different achievement levels at different stages of a student’s education. Students and teachers will experience it as an ascending spiral. They will benefit both from the virtues of familiarity (becoming more comfortable with the basic story at each iteration) and increasing sophistication and detail (as each iteration introduces new complexities, subtleties and nuances). At the kindergarten and primary level, the “Origins” syllabus can be introduced as a simple, engaging and powerful story. Indeed, many elements of this story are already taught at these levels. (For several years, Chardi Christian, a professional storyteller, told a 25-minute version of this story in schools in NSW.) In middle and high school, students can be introduced to more detail, to new problems, and also to issues of evidence and areas of controversy. At the upper levels, students can be encouraged to specialize in particular domains, depending on their interests and abilities. This is the point at which students or their teachers may decide to focus more closely on the subject matter of conventional scholarly disciplines from science to history or geography, but without the danger that they will lose sight of the many links between disciplines. By returning repeatedly to the same core story, students will be encouraged to acquire a sense of deepening understanding of a familiar story, and a sense of knowledge itself as a process of deeper and deeper understanding.

Flexibility in Teaching and Learning: For teachers, the process of returning to a familiar story with new and more sophisticated questions will make it easier to assess progress than it is when each stage is associated with new information. Students, too, will have clear benchmarks for assessing their own progress as they measure their deepening understanding of a story whose basic outlines are already familiar to them. Teachers will find it is easier to adjust their teaching methods and to experiment with new teaching methods if they can take for granted a certain core understanding of the material they are teaching. Students will gain in confidence as they find at each stage that they are building on a core understanding of the basic story of origins. Furthermore, the underlying unity of the curriculum will make it easier for individual states, schools or teachers to vary emphases and topics, depending on their skills, interests and resources, and those of their students. The great variety of content in the “Origins” syllabus would also make it easier to mobilize the diverse skills and expertise that different teachers bring to the educational process. At upper levels, the syllabus would allow for highly specialized teaching, within a common framework.

An Australian First: Australia is extremely well placed to pioneer such a course. Australia is an ancient society, with a human history reaching back at least 50,000 years. Its Universities have a global reputation for excellence, and it has rich traditions of scholarship in the sciences, the humanities and in education and pedagogy. Australia is well-connected globally, and its multi-cultural society provides a superb vantage point from which to appreciate the complexities and diversity of modern global society. Equally important, Australia is not a hegemonic power, so it lacks the complex intellectual biases that hegemonic status entails. All these features mean that Australian educators are ideally placed to introduce an innovative curriculum combining deep study of Australian society with a rich appreciation of Australia’s global, planetary and cosmic context. Here is an opportunity for Australian educators to make a fundamental contribution to the type of education that will be needed in an increasingly interconnected world.

RESOURCES

Currently, there are very few courses of the type described in this paper, so available resources for teachers are limited. However, there are now plenty of resources that could be used to develop such a curriculum.

Some Resources for developing an Origins Syllabus: I will begin by describing the resources I have helped develop during twenty years of teaching University-level courses that integrate understanding of the past at all possible scales. I began teaching such a course at Macquarie University in 1989. Those of us teaching the Macquarie course in “big history” (as we called it) soon found that there was a deep coherence to the course. Students were excited at its scope, and at the prospect of integrating knowledge from many different disciplines into a single, unified story. We also learned that the core story of “big history” could be appreciated at many different levels of sophistication.

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Though there exist few syllabi in big history, in the last twenty years there has appeared a substantial amount of material that could be drawn on in constructing the “Origins” syllabus. There are now several big history courses in Universities in Australia, the Netherlands and the USA (including the extremely successful course taught at Macquarie University by Marnie Hughes Warrington). Fred Spier (who teaches at the University of Amsterdam), has compiled a preliminary bibliography of scholarly works on aspects of “big history”: <http://www.iis-communities.nl/portal/site/bighistory/page/f4605854-ef1e-4d45-00ce-0b1442c2a8a0>. More resources are listed in my own book, *Maps of Time*, and in the only other available book on big history, Cynthia Stokes Brown, *Big History: From the Big Bang to the Present*, New York and London: New Press, 2007. The breadth and diversity of the “Origins” syllabus means that there is much relevant material available on the internet, and this provides many opportunities for student research projects.

Macquarie University and the Origins Syllabus: All in all, there is now a considerable body of experience in teaching big history, and plenty of material that could be drawn on in designing the “Origins” syllabus. I would be excited at the prospect of helping to develop such a syllabus for Australian students. I also believe that Macquarie University, with its expertise across many disciplines, and extensive experience in interdisciplinary teaching and in education and curriculum design, would be in an ideal position to set up teams of researchers and teachers that could design a complete “Origins” syllabus for students at different educational levels, and produce many of the resources needed to support them.

David Christian

[Curriculum Vitae available at http://www-rohan.sdsu.edu/dept/histweb/faculty_and_staff/documents/Christian_CV.pdf. I will be happy to make other resources available, such as my current University level syllabus in big history]

APPENDIX: INTEGRATION WITHIN A COHERENT NATIONAL CURRICULUM

How might the “Origins” syllabus link up with other parts of a new National Curriculum, such as English, Mathematics and Foreign Languages, to build a pedagogically coherent course of study?

There are many imaginative ways in which this might be done. Here is one possible approach. Just as the “Origins” syllabus rearranges existing disciplines in order to bring out what unifies them, so, too, I can imagine other major parts of the National Curriculum being linked to create a more unified educational experience for students at all achievement levels.

“Origins”, “Skills”, “Imagining the World”: For example, it might be possible to construct a national curriculum with three main parts, of which the “Origins” syllabus was just one. A second part might be called “Skills”. It would teach general learning skills, as well as skills in Mathematics, Writing, Foreign Languages and other areas. This part of the National Curriculum would aim explicitly at teaching and improving specific intellectual, artistic and manual skills. A third part might be called something like “Imagining the World”. Whereas the “Origins” syllabus is held together by questions about origins and how things came to be as they are, the “Imagining the World” syllabus would focus on how we imagine, understand and know our world. It would touch on topics currently studied within English, Literature and the Arts—exploring how different human societies have understood the world and represented it. It would also discuss the nature of knowledge, studying aspects of the Psychology of Knowledge and Learning as well as topics in Philosophy, Religion and Science as different ways of knowing and describing the world.

An Integrated National Curriculum: There would be many natural links between these three parts of the curriculum. Several components of the “Origins” syllabus would make use of the mathematical, writing and foreign language skills taught in the “Skills” syllabus; while the “Imagining the World” sections would raise many questions about the nature of the knowledge described in the “Origins” syllabus, and about how that knowledge has been constructed and taught. Taken together, the three parts of the curriculum—“Origins”, “Skills”, and “Imagining the World”—would embrace all the major disciplines currently taught in schools: English, Mathematics, Science, History, Geography and Foreign Languages, and bring out the many links between them. Within a pedagogical framework whose overall shape is clear to both teachers and students, it should also be relatively easy to integrate other disciplines when and if it was felt necessary or valuable to do so in particular schools or in particular educational environments.