



St Mary's School  
CAMBRIDGE

# St Mary's Sixth Form, Cambridge

## *Work experience and EPQ programmes*



# Extended Project Qualification (EPQ)

**I**n Lower Sixth, you can undertake the Extended Project Qualification (EPQ). The EPQ allows you to choose a subject area in which you have a particular interest and extend your studies beyond A Level specifications. The EPQ is very popular with our students and will prepare you for study at the top universities.

It provides the opportunity for university style learning, developing critical thinking and project management skills, and demonstrates independent research and study skills. Many students comment that undertaking an EPQ helps to boost their self-confidence and academic self-belief. The qualification also carries UCAS points.

The EPQs that our girls choose always cover a very wide range of topics, pushing well beyond the boundaries of the topics taught on the A Level specifications.



## A flavour of EPQ projects from 2015/2016

### Technology as a tool to combat human trafficking

*Reshma A.: Gap Year before study in Australia*

**Introduction:** Human trafficking is classified by the 'United Nations Office on Drugs and Crime' (UNODC) as "the recruitment, transportation, transfer, harbouring or receipt of persons...", through the means of "threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation." This detailed definition of human trafficking is of utmost importance as the human trafficking process involves several components all of which are responsible for the overall effect.

According to UNODC, human trafficking affects every country in the world, in relation to the country of origin, transit or destination. The gender of the reported victims is predominantly women and the majority of traffickers being male. The reported cases illustrates that the majority of the victims were transported overseas, moving across international borders.

The United Nations estimates the total market value of human trafficking at 32 billion US dollars. Data analysis shows that sexual exploitation is the leading offence in trafficking, followed by forced labour; other offences include organ removal, warfare and domestic servitude.

**Conclusion:** With technology being a fundamental part in today's world, combatting human trafficking must use technology. We cannot repress the technology that human traffickers are using but we can develop technology to prevent future cases of human trafficking. Modern software such as 'Sweetie' and 'Big Data' play an essential role in the development of the traffickers' profile; ultimately leading to an arrest. The benefits do not rest there and many opportunities to combat traffickers are becoming possible with the advancement in technology and education. Whilst one may ponder the effectiveness of technology in today's world, it is clear that the trend is favorable for developing future products. An absurd solution to global problems such as identity theft and human trafficking has been to request the destruction of web servers such as Facebook. However the tough stance by Facebook has resulted in the installment of privacy settings that protect the user. This is a clear example of how technology can be used to protect online users whilst allowing them to access social media. If extreme solutions like the one proposed were to be carried out, it would only prove a short-term hindrance in human trafficking because human trafficking is often due to a poor economic background which forces the deprived to take crude decisions. As a result, abandoning these technologies will not solve the problem and only cause a more stressful situation for example the use of Bitcoin. The rational and more effective approach is to utilise technology and limit the ability of traffickers.

If law enforcement were to heavily monitor advertisements in unstable communities it would lead to a reduction in the number of vulnerable women entering human trafficking operations. By enforcing this, 'Big Data' can be used to establish links in the human trafficking world leading to a high chance of prosecution. Online courses such as 'Passport to Freedom' are significantly beneficial and powerful. Utilising 'crowd sourcing' can help to take better-informed decisions when assisting the victim. Therefore, combining information and technology would be a highly effective tool to combat human trafficking.

### An analysis of possible explanations of psychopathy, with particular reference to violent offences

*Olivia B.: Psychology at University of Birmingham*

**Introduction:** Within psychology the nature versus nurture debate is focused on the extent to which certain behaviours can be attributed to a genetic cause (nature) or developed from experience (nurture). Those who support an extreme hereditary position in the debate (which is to side with nature being the behavioural cause) are called nativists. They would accept that the cause of behaviour is innate, part of a person's genetics. The characteristics of any psychological disorder should therefore be observable from birth or a young age. It would also be expected that multiple cases of identical behaviours should be shown between those that are genetically related. This means that the influences of the characteristics will be genetic inheritance or other biological factors that are pre-determined.

Those who support the other side of the debate, nurture, are known as environmentalists. They accept that the cause of behaviours is the impact of external factors occurring after birth. This can be a trauma – such as deprivation, sexual assault or abuse – which triggers irrational behaviours. Or they can be learnt – this can be seen when obsessive compulsive disorder (OCD) has been passed down from mother to child. Therefore, you would expect to see behavioural changes to occur from infancy to childhood, where they are most likely to learn characteristics from other people, like their parents.

Unlike the nativists, who assume that characteristics are brought about through evolution with individual differences down to the unique genetic coding of each person, environmentalists believe that at birth the human mind starts off blank for everyone. This is called a ‘tabula rasa’, or ‘blank slate’ in Latin, and through experience this is slowly ‘filled’ leaving each person with their individual personality. You can see here that the difference is that nativists assume that there is very little personality change throughout a person’s life but environmentalists expect there to be dramatic changes as a person matures. In order to differentiate between behaviours which are seen as coming from nature and those from nurture I will assume that the earlier psychopathic behaviour is seen, the greater the chance that it can be attributed to genetic causes. If the behaviours are seen following a traumatic event, and not before, I will assume that the psychopathy can be attributed to the event which acts as a trigger.

**Conclusion:** From investigating each of these sources it is clear that there is no single answer for the question of what causes psychopathy. Each case is unique. It seems that Waddington’s Gene-Environment Model clearly sums up the dynamic relationship that both genetic factors and environmental factors play and how they can for each person. There is no debating that the biological observations of the abnormalities to the frontal lobe and amygdale play a significant role in explaining how these characteristics are developed. If every case of psychopathy proved to show these mutations then it would be concluding evidence that psychopathy is something one can be born with. However, this is not the case. There are external factors free to manipulate the chances of a person getting psychopathy – even if they are heavily genetically predisposed to psychopathy.

As a conclusion for the debate of whether it is nature or nurture that causes psychopathy, it is safe to assume that ‘both a genetic predisposition and an appropriate environmental trigger are required for a disorder like psychopathy to occur.

## An analysis of the theory and evidence of the health benefits of Tai Chi

*Dianne C.: Biochemistry at Imperial College*

**Introduction:** In the modern world, people research various fields to seek ways of improving the physical condition and keeping healthy. A news piece on the BBC website, entitled Tai Chi ‘could be prescribed’ for illnesses, and another in The Guardian mentioned this idea. According to both articles a traditional Chinese martial art, Tai Chi, helps relieve symptoms of some disabling conditions and has benefits to patients with certain diseases. As a Tai Chi player who comes from the country where Tai Chi originated, I decided to do my research on the benefits of practising Tai Chi and the reason why it may be beneficial to our body function in the light of traditional theory and scientific evidence.

**Conclusion:** The three morphological locating methods all contributed to the conclusion that there is a relation between connective tissue structure and the system of meridians and acupuncture points. Preliminary discoveries also included a relatively high abundance of calcium, phosphorus, potassium, iron, zinc and manganese, referred to as “specific elements”, found deep in the connective tissue structure which corresponds to acupuncture points. The distribution of calcium was carefully analysed. It was discovered that all acupuncture points labelled on the traditional meridian diagram are abundant in calcium. The calcium concentrations at these points are tens of times higher than non-acupuncture points on meridians, and 100-200 times higher than points which are not on any meridians. When these points were acupunctured, the calcium concentration shows a significant increase – it may be assumed that other stimulations such as Tai Chi can cause a similar effect. Researchers claimed that these “calcium stores” may be vital for storage of metastable bound calcium and emergent regulation of calcium ion concentration in tissue fluid at certain locations. This could be a significant function because Ca<sup>2+</sup> ion is involved in many important biological processes.

Also, the liquid crystalline collagen fibres within the connective tissue structure were found to have a high efficiency in transmitting infrared light in a specific range, and might have a superlattice microstructure that is capable of stimulated simultaneous emission. This indicated that the human body might possess a biophoton system which plays an important part in physiological activities such as the exchange of information and energy.

Tai Chi is said to be generally beneficial to our health because it has a positive impact on the meridians. Now that the evidence for the existence and potential functions of meridians has been found, if the statement above is true, then we can assume that Tai Chi indeed improves the physical condition. However, the evidence of Tai Chi affecting meridians is still to be found. Further research may be carried out in monitoring the changes in acupuncture points, such as ion concentration levels during the practice of Tai Chi. More evidence for the health benefits of altering acupuncture point environment is also necessary.

## To what extent will the Rea Vaya BRT solve the ‘public transport crisis’ in Johannesburg?

*Helena G.: Economics at University of Bath*

**Introduction:** Johannesburg is located in the province of Gauteng, South Africa. It is home to about five million people and covers a large area, of 23,000km<sup>2</sup>.

The city is unusual due to the political system Apartheid, which only ended 21 years ago. The Apartheid policies of racial segregation are still economically, politically, socially and geographically obvious today. During Apartheid, public transport for the black working class was not provided, and in fact illegal for much of the time. This resulted in an informal minibus taxi industry, which originally was illegal but then filled the need for public transport in Johannesburg. The taxi industry has since become a powerful force that has a virtual monopoly over affordable public transport. However, the system is inefficient, dangerous and inadequate. As a result, the Gauteng government has introduced various public transport schemes and initiatives.

One such scheme is a Bus Rapid Transport system called the Rea Vaya, modelled on similar initiatives in South America (in particular Bogotá), which aims to provide reliable bus transport for all demographic and socio-economic groups in Johannesburg. Whether the Rea Vaya will achieve its goals is explored in this essay. This essay will assess the extent to which the Rea Vaya will solve the under provision of public transport in Johannesburg. In particular, will the Rea Vaya meet the challenges of the vested interests in the taxi industry, be affordable, be accessible across the geographies of Johannesburg and ensure personal safety? In order to answer these questions it is important to understand the history of Johannesburg and the impact of Apartheid on public transport.

**Conclusion:** Is the poor public transport system holding Johannesburg back, or is it developing in spite of the lack of public transport infrastructure? Johannesburg strives to be a ‘world-class African city’, but what does this actually mean? Johannesburg has an immense opportunity to become an economic hub for not only South Africa, but also the whole of Sub-Saharan Africa. It is a consequence of history that Johannesburg is spatially distributed in the way that it is but in order to overcome the physical boundaries and make the labour force as productive as possible, the city requires an affordable, safe and quick transport system that allows people to live at home with their families and commute easily and affordably without being unsafe. Although Johannesburg is developing, it is not doing so as effectively as it could be. If the Rea Vaya was successful, it would allow people to live and work where they wanted in jobs best suited to individuals’ skill levels, improving productivity and the economy. But, currently the Rea Vaya is not delivered as was originally hoped. It still has the potential to do so and gain the reach across the entire city that is required for an effective transportation system in Johannesburg. However, that will require greater resources and commitment than has been forthcoming so far. In my opinion, this is a strategic decision that the city may take. It may look a daunting task and a significant investment but without that commitment, the long-term economic strength of the city may be compromised in the gridlock that prevents people getting to and from work.

It may be that one transport system across Johannesburg and Tshwane (previously known as Pretoria) is unachievable; the post-Apartheid cities are too spread out and contain a wide demographic. It is important that alternative systems work together to serve the different populations so that the transport system as a whole can be as efficient as possible. For example, one way would be to expand the more ‘luxury’ Gautrain for the wealthier and the Rea Vaya for lower income users. One effect of better public transportation is that it will provide competition to the taxi industry and create uplift in its standards. The BBC recently published a report that the increase in public transport in Johannesburg has seen the taxi industry desperately trying to reverse their dangerous and ‘scruffy’ reputation. If they succeed, this might hinder the future success of the Rea Vaya but it would be a major indirect benefit to the residents of Johannesburg, especially those dependent on public transportation.

## Child marriage in Nigeria

*Hillu I.A.: Business Economics at University of Leicester*

**Introduction:** With everything I do, I try to epitomise myself, and two important things that make me who I am are my gender and my nationality so I chose an EPQ topic to represent them – child marriage in Nigeria.

I initially thought of comparing child marriage in three very different countries – India, United States of America and Nigeria. However, during the early stages of my research, I found that there was an abundance of information on the child marriage levels in India but very little on Nigeria. To the world, this may seem fair seeing as India has a higher rate of child marriage than Nigeria. However, to the thousands of Nigerian child brides, this under-representation is extremely unfair because the hardships are ignored.



If I were not fortunate enough and was born into a family a few miles from where I live to a family suffering from poverty, I could have been a child bride case study for someone to write about.

The United Nations defines child marriage as a formal marriage or an informal union before age 18. As of 2014, 43% of Nigerian women had been married before the age of 18 and 17% before the age of 15. Child marriage figures are highest in the North West of Nigeria with 76% of its girls being child brides. The large numbers can be associated with the north western states being home to poverty, low literacy rates and high levels of discrimination against women.

Having decided on my topic, I went about my research looking at the causes and the consequences of child marriage and used them to come to a conclusion on what I personally think of child marriage.

**Conclusion:** I have come to the conclusion that out of all the causes of child marriage I found poverty is the most influential. For the parents of child brides, driven by poverty, marriage is seen as the only means of them having a chance at survival because they receive her dowry which helps pay for their basic needs. But what they have yet to realise is that her dowry is finite and will only pay for the needs of the family in the short-term. Is the plan for them to keep having female children and raising them to be child brides to earn a steady income?

As for the parents that have refused or have deemed themselves unemployable due to their lack of education, there are several jobs such as being a cleaner, a gate guard, a gardener in Nigeria that do not require them to have any level of education. So why not take up these jobs and credibly earn a steady income? I do not believe that the parents' lack of education is a good enough reason to marry your girl child off.

I see child marriage as a leak in a tub full of policies and efforts to improve Nigeria's living standards. I compare it to a leak because it seems that with whatever progress Nigeria tries to make, the consequences of child marriage will draw them back.

My conclusion has also confirmed my view that for whatever reason, child marriage is an utterly cruel act that has to be stopped immediately. In societies where child marriage is prevalent, most people accept that it is a norm, so they do nothing about it. Conversely, some cultures see it as a grave deprivation of the girl's fundamental right to education, good health and a happy childhood and try to fight against it. However, the fight of a few thousand ideologically trapped people cannot have a significant impact. I cannot help but wonder what goes on in the minds of the people in societies that do not object to this. How do you bring yourself to send a young girl into what you very well know is a hell on earth? By sending her into that marriage, all her hope for the future is ended. She has no chance at even dreaming about what life could have been if things had gone differently because the marriage has taken the idea of a different life away from her forever.

I think one of the best ways to change the views of societies that accept child marriage is to provide them with a female example. That way they can have a real picture of what their daughter could have become, had they been set on a different path. Had they at least got their daughter through secondary education and given her a chance to flourish in what the world defines as a normal childhood, who knows, she might have been amongst the likes of great Nigerian women such as Chimamanda Ngozi Adichie, a writer of global recognition with several awards such as the Ansfield-Wolf Book Award.

As a human being I strongly stand against child marriage and I hope there is an increase in its awareness and efforts to eradicate it all over the world.

## An analysis of the differences in the social construct of gender in culture and media in the USA and UK

*Melissa J.: Theology and Religious Studies at University of Cambridge*

**Introduction:** The topics of gender and sexuality are ones which are becoming ever more important in a world in which we are trying to reconcile ancient religious doctrine and belief with modern and progressive viewpoints. Understanding gender and its constructs in different cultures is, in my opinion, imperative if we are – as a multicultural and global society – to improve human rights and eradicate the bigotry and prejudice still present in our world. In this essay, I shall argue that it is the differences in cultural backgrounds and religious landscapes which have caused the differences in the attitudes of the USA and the UK towards gender and sexuality.

With regard to attitudes to gender, the opinions of the Christian Church are very important because many of the faithful base their moral compasses on the teachings of the Church; this means that if the religious denomination they belong to is willing (like the Church of England) to alter its views in outward displays like the passing of the marriage equality bill, then the general opinions of the congregation can change along with it, increasing the liberality of that group of people. In theory, I would like to see this

happen in the USA; however, the conservative nature of many of the Christian denominations in America ensures that the general moral compass of the congregation remains conservative and therefore less willing to accept more liberal views of gender and alternatives to conventional heterosexuality, making a significant change unlikely in the very near future.

**Conclusion:** In conclusion, there are many differences between the religious landscapes of the USA and the UK, and this is what leads to the differences in attitudes to gender and sexuality. The highly religious moral backbone of American society leads to a more conservative outlook on life in general and gender and sexuality in particular; whereas the UK can be regarded as a more agnostic/atheistic society, leading to a more liberal attitude to these issues as there are fewer religious traditions and beliefs influencing the opinions of the general public. The cause of these differences is the lack of classical influence on culture in the USA; the puritan founding fathers left the UK and Europe before many of the Renaissance ideas permeated into the consciousness of the populace in the form of plays, literature and politics (Renaissance ideas seriously permeated European intellectual thought in the 15th and 16th centuries). In the UK and Europe, the traditional religious status quo was challenged during this period, and thus traditional attitudes towards gender and sexuality were defied by playwrights like Ben Jonson, the opera houses and Shakespeare among many others, but this did not happen in the USA. Overall I think this is what has led to the more conservative attitudes in the USA compared to the UK.

## What have Physics and Biology contributed to the psychological research behind language acquisition?

*Alexandra M.: Civil Engineering at University of Exeter*

**Introduction:** This EPQ is going to investigate language acquisition in humans. I will begin by explaining how I first became interested in the topic of language and how my initial interest in language led me to consider what the many different areas of science could bring to the study of language. I looked in some depth at what Psychology, Biology and Physics have each had to say about language acquisition. It was through these investigations that I began to see how vital it is that the different areas of science must work together and how it is impossible for a science to operate in a vacuum. It also became clear to me as I read further into the subject of language that research itself needs to be aimed at helping people in the present time and that investigative studies and research should not be done simply for the sake of science. Science put to good use can change so many lives for the better. This essay will chart my investigations and findings about language acquisition.

**Conclusion:** It seems that something as important to our daily lives as language remains quite a mystery. Science has tried to look at many of the component parts of language, but it still seems that there is so much more to know about how humans acquire language. It has been said that we know more about outer space than we do about the workings of our brains. This essay has shown how difficult it is to understand language acquisition, because it is not a single process – but the results of many brain processes. Isolating these processes in a living brain remains very difficult even with scientists from many different areas working together. This essay has shown some of the complexities of research into language – there is certainly no single answer to how humans acquire language. This is what perhaps makes science such an interesting area to study – new techniques give rise to new knowledge but the more we seem to know, the more questions we are then able to ask!

It is hoped that this essay has shown the complexities of language acquisition – but it seems so important to underline that research should not just look for answers, but for ways in which people's lives can be improved in the present time, as well as in the future. This essay has shown that there are many practical applications for work into language acquisition. A deeper understanding of issues around language can help with rehabilitation programs for people who have had strokes and sometimes need to learn to speak again. Research can also help children who have problems with language and with elderly patients with Alzheimer's. These practical applications of science seem so important – and they should not be forgotten in the rush to discover new information. If science can improve the lives of people in difficult situations – then this should surely be the focus of everything.

When I began this essay I wanted to find out more about how language was acquired – and specifically what different areas of science had contributed. As I have researched the topic it has become so obvious that the different areas of science need to worry less about what each has contributed and worry more about how the areas can all work together to improve lives. These issues have emerged as I have read more on the subject.

Psychology has researched the different processes that need to come together in order for humans to use language – and psychologists have debated whether we have innate language modules in our brain that are pre-programed for language acquisition. Biology has looked at the evolution of language, genes involved in language, specific structures in the body that are



involved in language and the way that human language is different from animal communication. Physics has brought an array of ways of looking into the brain whilst people are using language – and the possibility of treating languages disorders from within the brain, safely. No area can be thought of as more important than any other – but research does need scientists who are prepared to work together and communicate.

## Analysis of factors influencing the dismantling of apartheid in South Africa

*Hannah P.: Midwifery at University of East Anglia*

**Introduction:** The rise of the Apartheid system in South Africa can be traced back to the election victory in May 1948 of the National Party (in alliance with a smaller Afrikaner Party) that signalled an increased level of political unity within the Afrikaner community. For 46 years, between 1948 and 1994 the Apartheid system, involving legally backed racial discrimination and segregation, became deeply entrenched in the South African political system.

The Apartheid system itself was not unchanging, but went through a series of phases of development. An initial phase took place from 1948 – 1959 where the main aim of the National Party was entrenching its power and stretching discrimination. A second phase from 1959 – 1966 was associated with a switch in emphasis toward elaborating and instituting a principle of ‘separate development’ ultimately based on race. A final phase from 1966 onwards was associated with various adjustments being made to the system in response to the growing problems encountered and where erosion of the Apartheid system finally picked up momentum.

Campaigners and spectators from both inside and outside South Africa believed that the Apartheid system, with its odious policy endorsing white supremacy, could only be dismantled by a revolution. Many were sceptical that any process of negotiation could bring about meaningful change. Although the white population within South Africa never reached 20% of the overall population, the Apartheid system was not going to be easily dismantled. As the Afrikaners and supporters of the racial separation system became more attached to their privileges they were likely to be increasingly unwilling to give them up. As South Africa became a pariah state subject to boycotts and strikes of investment as well as travel, trade and sporting embargoes, it seemed ever more likely that only a terrifyingly violent revolution of some sort could usher in the changes needed to dismantle the layers of racial segregation and discrimination built up over the decades.

Eventually the development of a complex mixture of factors some originating from within South Africa itself and others from outside it, meant the system was dismantled and a more democratic system established. Remarkably the transition process took place relatively peacefully. The feared scenario that significant political change within South Africa would only come about through something like a full scale civil war, one which would escalate across Africa with certain newly independent black African neighbouring states becoming heavily involved, was not realised. At various times during the period when the Apartheid system was in place the idea of a relatively peaceful transition to a situation where the black majority could exercise their political rights would have seemed quite impossible to many.

The internal and external factors that promoted the end of the Apartheid system are numerous and they interacted in various ways. They include resistance from native South Africans, growth of and organisation of protest and opposition groups, the white actions driving from above, changing orientation of the leadership of both the Afrikaner community and parties and organisations representing the black majority population, developments in the ‘Frontline states’ surrounding South Africa (which provided bases of support and sources of inspiration) and various countries worldwide acting in many different ways to help South Africa gain a majority government.

In the remainder of the essay I identify, outline and evaluate some of the internal and external factors involved. I also address the issue of which of the factors considered were the most significant in the sense that had they been absent it would likely have meant that the Apartheid system would have continued for a significantly longer period or been ended in a very different way. After extensive research I have been able to reach the conclusion that although external factors in some circumstances acted as a catalyst to dismantling the system, it was the internal factors that were the most important reason for the breakdown of Apartheid.

**Conclusion:** The factors that led to the dismantling of the Apartheid system are numerous and interacted in complex ways. The internal factors include political, economic and cultural factors. The political organisation and leadership of the black resistance movement were of major significance but so too were internal economic transformations and cultural changes including the way Afrikaners began to see themselves in a different way partly as a consequence of the affluence they enjoyed as a result of the workings of the system. There were also significant external factors, the changing political landscape of Africa impacted on South Africa in various ways, the economic sanctions imposed and the cultural and sporting isolation of the country had significant

effects. In terms of understanding why the transformation in South Africa was carried out, in as peaceful a way as it was it seems that internal factors are especially important particularly the factors linked to the organisation and leadership of respectively Afrikaner and majority black communities. From all the internal factors the most important was the Black Resistance Movement, because if the white government had maintained the support of the Native Africans in all aspects of life and culture then they would probably have been able to maintain the repressive system longer, but the lack of support within South Africa meant that it was no longer feasible to maintain. If in relation to trade unions, culture and the separate education system the Native Africans had been supportive then the country would have been much more united and so been able to deal collectively with trade sanctions from other countries, moral condemnation and even other countries becoming independent around them. However, the other main internal factor was the laws and actions of the white government as without the oppressive laws being passed the blacks would have had less to protest against and fight to remove. However important the external factors were, the breakdown of Apartheid would have happened without them, perhaps not as fast but definitely at some point but with the escalating internal protests, riots and unrest the Apartheid system could not possibly continue.

## How English is the music of Henry Purcell, ‘England’s greatest composer’?

*Rachel W.: Music at University of York*

**Introduction:** Henry Purcell (1659-1695) was an English Baroque composer in the 17th century, hailed in his death notice as ‘one of the most celebrated masters of the Science of Music in the Kingdom and scarce inferior to anyone in Europe’. Purcell today is still considered one of England’s greatest composers, and is described as ‘England’s greatest composer’ in the recent ‘Rough Guide to Opera’. Purcell composed many great semi operas, operas, incidental music, odes, cantatas, church music and instrumental works, leading Roger North (a lawyer and musician in the 17th and 18th century) to state, ‘a greater musical genius England never had’. While there is no doubt concerning the high level to which Purcell has been praised for his contribution to Baroque music in the 17th century, Purcell was also known for incorporating a large amount of musical features from abroad, leading many to believe that Purcell was not as ‘English’ in his compositions as one would expect, asking the question ‘how English is the music of Henry Purcell?’. J. A. Westrup writes on Purcell, saying, ‘more serious still have been the perverted jingoism which proclaimed Purcell as a typically English composer, bravely carrying on the almost defunct tradition of the Elizabethan age and holding the fort till it fell before the assaults of Handel and Italian opera. This attitude is not only ridiculous in itself but has had the natural effect of making us appear ridiculous in the eyes of our neighbours’. Westrup is saying here that Purcell’s works did a lot more than just continue the old English style from the 16th and early 17th century until the time in the early 18th century when Italian opera became popular in England. Westrup is hinting towards Purcell’s incorporation of foreign influence which will be explored later in the essay. This essay will analyse how far Purcell’s love of the foreign styles dominated his own compositions, and how Purcell, despite growing up and living in England, was introduced to the Italian and French Baroque music.

**Conclusion:** I think that despite Purcell’s heritage, his music cannot be regarded as ‘typically English’, due to his frequent usage of traditional Italian and French practices which were incorporated into his own compositional style. While it is true that he began as a composer continuing the traditional English practice of the old Renaissance contrapuntal style, he began to develop his own musical idiom after the exposure he gained to French and Italian music. Purcell’s life spanned a particularly turbulent time in Britain’s political and musical history, so naturally his music would have reflected the prevailing public taste and interest, for example, the rising popularity of the French-style orchestrally accompanied anthem after the Restoration, and of the Italianate opera in the late 17th century. Moreover, despite Purcell’s traditionally English musical upbringing at the Chapel Royal, this would have also resulted in him singing a wide range of repertoire, old and new, spanning numerous different styles, developing into a complex musical personality.

The situation is confused because different people perceived different aspects of the style at the time. For example, while Purcell believed he was composing a ‘just imitation of the most fam’d Italian masters’ in his ‘Sonatas of III parts’, Robert North commented that the sonatas still possessed an ‘English vein’. However, most historians think that although Purcell did absorb aspects of the French and Italian style, his musical personality shines through, and the music he wrote cannot be regarded as mere pastiche. Purcell’s personal and unique voice can therefore be regarded as a hybrid of styles.

In *The Cambridge History of the 17th Century*, Gregory Barnett writes that ‘Purcell’s sonatas are in fact neither Corellian nor purely Italianate. Rather, they are fascinating hybrids, combining contrapuntal and harmonic features seen in Purcell’s own fantasias with pre-Corellian Roman influences seen in manuscript sonatas circulating in England’. In *Music of the Seventeenth Century* (1987), Lorenzo Bianconi writes that Purcell was ‘voraciously heterogeneous and versatile, to the point at which the strength of the composer’s own personal imprint of melodic and harmonic invention becomes the only truly recognisable factor’.

# Work Experience Programme

**W**ork Experience is a valuable way to prepare you for working life and to help you make informed career choices. It allows you to hone skills that employers value such as working as part of a team, becoming an effective communicator and gaining a valuable business understanding. Work experience can significantly enhance a CV and help towards making a successful application to university or apprenticeship programme.

St Mary's School, Cambridge runs a work experience programme for Lower Sixth students, enabling the girls to experience a wide range of placements and to attend a variety of career insight days for Sixth Form students.

All students are encouraged to take up at least one work experience placement in an area of career interest; some students also organise their own placements.

We ask for feedback from the placement provider at the end of a work experience opportunity and we are delighted to report that these are extremely positive. Employers are happy to host our students, finding them responsive and proactive. The Careers department is frequently told how impressive the students' focus, demeanour and can-do attitudes are. Students sometimes leave with an open invitation to return and, on more than one occasion, with the offer of some part time work.



## Student testimonials

### Architecture



#### Lucca C.

I really enjoyed my week at Mott MacDonald and I learnt a huge amount. I worked mainly with the Landscape Architect department and on the first day I used special software to create plans of areas in London for potential new stations for the Crossrail 2 project. On the second day I went to London to view these sites directly, take photos and look for potential implications before writing up the official visit reports. I also worked with an ecologist, helping him find case studies of projects that relate to a specific question asked by a potential client. This was fascinating as I discovered the diversity of the company and the vast amount of projects it undertakes. I preferred the work and projects that the ecologists, rather than landscape architects, work on, although it was all really interesting. I learnt how to point out potential implications for a project and improved my research skills and use of specialist software.



#### Raphaella S.

I did a week of work experience at Purcell, Miller, Triton (Architects). I had to research a list of buildings and architects and I had to select a few and say why I liked their projects. I had to collect information on the selected architects and buildings and prepare a presentation about their work, their history and also my opinion on their projects. My 'tutor' did a presentation about what universities offer and how each university course is different. She explained what architects do and how it takes seven years to become a professional architect (RIBA). She also told me that there are many types of architects (e.g. landscape and technology), plus how architects will solve problems (e.g. building, reflection, sun). The team taught me how to plan where to build buildings, what steps you go through and told me things that I would need to consider. Ian taught me how to use Sketch Up (a programme) to create a model of projects and gave me some useful advice and feedback such as "always look up at the buildings when walking around, and appreciate them."



### Art



#### Ruolan Y.

In August, I took part in work experience in Cheffins Fine Art department as an assistant auctioneer for one week. During that week, I did some research on some of the items to give the auctioneers a selling record for estimating prices. I organised items in the warehouse, helped take photos of the treasures and cleaned the sale room. Another job was to label and tag all the goods which would be sold in the upcoming event. The most important thing I did there was to translate the Chinese characters printed on some oriental objects and identify the estimate date, so that the professional auctioneers could write descriptions and estimate the price. The part I enjoyed the most was to organise treasures in the warehouse. Digging into shelves and boxes was exciting; after the dust and spider webs were wiped, the presented item started to tell a story. One of the most important things I learnt is how an auction works behind the scenes – and how to communicate with colleagues, which I think is a useful skill in any job.







### Lucca C.

Working at the Victoria & Albert Museum was an amazing experience as it really opened my eyes to all the hard work and thought that goes into creating and running a museum. Mostly I was cataloguing unidentified clocks in the V&A collection and one day I visited the storage house where 60 percent of the collection is held. As well as this I also saw the textiles storage department, which was really impressive. I went on various tours of V&A galleries, but the best part was a private tour of the paintings and prints department and learning that artwork is lent to other galleries across the world. I was astounded by how vast their collection was. I feel I improved my research skills and ability to pick out important information.



## Dentistry



### Celeste C-C.

I had three days' work experience at Sawbridgeworth Dental Practice. On the first day, with two NHS dentists, I observed general check-ups, fillings, root treatment and a crown fitting. On the second day, with the principal dentist who performs both private and NHS treatments, I observed fillings and general check-ups including cleaning and polishing, and then spent time in the decontamination room and on reception. On my last day, with a hygienist and the principal dentist, I was given the opportunity to remove a filling from a model tooth. It was an incredible three days where I was able to see how the dental team works and how the practice is run, as well as observe many procedures.

I also spent a day with the Oral & Maxillofacial Surgery and Orthodontics at Addenbrooke's Hospital where I observed five biopsies. Patients ranged from teenagers to the elderly and it was very interesting to watch the procedures. In the afternoon I shadowed an Orthodontist and observed the replacement of braces as well as general check-ups. I was able to listen to the discussions between the orthodontist and patients about potential treatments. I was given a lot of information about how different procedures work and are carried out, as well as learning about the structure of the tooth. It was a very insightful day.



## Economics



### Yinuo M.

I did a week's internship at the Institute of Economic Affairs (IEA) in London. On the first day the students were divided into groups and were assigned different debate topics, my topic was whether central banks are necessary for the operation of an economy. This is a fresh aspect of economics for me which I enjoyed researching. We were taught debating skills, such as how to balance abstract points and extract data. Several talks were given over the next few days, including an examination on the problems with the NHS, an explanation of inequality and its significance, the issues with minimum wages, and the measures and implication of poverty. We also toured Westminster, were taught how to write cover letters, CVs and personal statements, and given useful interview tips. At the end of the week we had Q&A sessions with the communications department and the digital marketing department of the IEA.





## Education



### Millie K.

My work experience was with a primary school where I spent time with a different year group each day – from Reception to Year 3. I worked with individual children on their reading and writing and spent time working with disabled children, which I really enjoyed as I would like to become a teacher in a hospital. I definitely gained new skills, in working with challenging children and keeping control.



## Estate agent



### Connie B.

I worked at multiple Savills estate agencies across London including: Shoreditch, Islington, Richmond and Canary Wharf. I organised viewings with potential buyers over the phone and in person and subsequently attended many viewings and inputted clients' information onto the Savills system. I created window cards for the office and checked the website Right Move for all of Savills' properties to ensure the photos and descriptions were suitable. For Saturday viewings I organised keys, timings and property brochures for each estate agent. I met with relocation agents to show local properties for buyers in the area. In Richmond I worked in the call centre where I listened in, and then called clients to inform them of new properties within their search requirements. One meeting of particular interest focused on the impact of Brexit on the property market.

The experience was not only enjoyable, but allowed me to see the interaction between physical property and human lives. Additionally, working improved my time management and prioritisation skills. I also gained an insight into working life.



### Ella N.

I worked at Savills, Cambridge in both July 2015 and August 2016. In 2015 I was asked to complete general office admin duties within the residential development department. I helped file and sort brochures for new homes, as well as helping out at an Open Day for a new development in Foxton, engaging with prospective buyers and assisting in showing them round the house. In 2016 I worked within the agricultural department and mapped out a farm to make an application for an EU agricultural payment scheme. This involved me using the computer and filling in forms for the Rural Payments Agency. I really enjoyed both occasions at Savills as they gave me an insight into the property sector and the challenges that come with it. I found mapping the farm challenging, especially filling in forms with the field locations and sizes that needed to be sent to the government, as no mistakes could be made on this. I feel that throughout the work experience I was able to develop my IT skills, as well as improving my communication skills whilst dealing with prospective buyers.



## Information technology



### Kelly Y.

In July 2016 I had work experience with Thales – a company that specialises in cybersecurity. On the first day, the company asked me to write a program that can perform Vigenère cipher encryption and decryption using python, which I found quite challenging and fun after going through different trials and errors. On the second day I worked with other students on a mini project to design a smart home which uses the Internet of Things, using server/client side scripting. On the last day we combined all our codes together into an individual code and presented it to the engineering department. I found it quite difficult to make the program work as intended, since this was my first experience of this; however I learned to just keep thinking of alternative solutions to problems until you get everything working. I have a clearer concept of the Internet of Things and its importance in daily life. I also gained new programming skills through trying out different codes that I haven't used before.







## Languages



### Morgaine O.

For my work experience I went every Thursday and Friday lunchtime to the Alliance Française to work on their library project. I helped to organise their books and get their spreadsheets up to date. I also helped at a talk they organised for the Science Festival. I have gained some knowledge of the French classic novels and I have improved my French speaking skills as I was able to practise speaking in French to the staff who work there.



## Marketing



### Kirsty T.

Over the summer I spent a week at a Marketing and PR company called Conscious Communications. I developed a greater understanding of how a company operates and learnt many indispensable skills that I can transfer to other aspects of my life. I wrote blogs, designed posters for events and learned how to write press releases. I was given the opportunity to write a number of articles, allowing me to develop my organisational, communication and writing skills. I enjoyed working as part of a team and learning about clients' reputation management. As I am not particularly arty, I found the design aspects of the tasks more challenging, but as a result I have significantly improved my computer art skills. I really enjoyed my week and would highly recommend this to anyone considering a career in Marketing and PR.



## Medicine



### Ellen C.

I spent a day with the Neurological Critical Care Unit (NCCU) at Addenbrooke's Hospital and a second day on the Intensive Care Unit (ICU), which started when the doctors on the night shift updated the doctors starting the day shift in the handover meeting. I saw the CT, MRI scans and X-Rays and saw how information was obtained from the computerised note system EPIC.

I observed the Ward Round on the NCCU where doctors and consultants carry out ward rounds in which they use the Glasgow Coma Scale to assess patients' consciousness, with the categories of eye opening, verbal response and motor function. Doctors ask patients to respond to stimuli, such as pain, opening their eyes, squeezing their hands etc. to assess their ability. I also saw the ICU unit respond to a trauma call from the Emergency Department due to a car crash with an unrestrained passenger and how information is transferred.

The inter-disciplinary team of ICU nurses, HCAs, SLTS, dieticians, doctors and physiotherapists work together to provide patient care and all roles are vital to each other. I really enjoyed gaining an insight into the ICU, which is an area of medicine I had not considered before, and seeing the compassion and kindness of staff as they interacted with patients, and I will try to use their techniques in my volunteering in the hospital.







### Isabelle L.

I shadowed two Dietitians at Addenbrooke's Hospital for my work experience. The Dietician Assistant showed me what a Dietician does, and then gave me some nutritional supplements to taste. I then sat through two consultancies with a Dietician who specialised in cystic fibrosis. These meetings gave me a real insight into what a Dietician does. I then shadowed a Dietician who specialises in paediatric nutrition. I followed her around the intensive care units for children, where she showed me how to log information on a computer, and what she would usually monitor. I learnt about tube feeding patients and feeding patients with dietary supplements. She also told me that most people on the dietetics course are often mature, which made me feel slightly apprehensive about the prospect of studying dietetics straight away. However, the day reinforced the fact that I really want to study dietetics at university to eventually become a Dietician.



### Isabelle L.

For the past year I have been volunteering at Addenbrooke's Hospital for two hours every week. I originally applied to become part of the Young Person's Programme – a three month long programme where you are required to volunteer with other people your own age (16-18) and work on a ward for two hours every week. It required a lot of commitment, having a high attendance record for the three month duration, however it was very rewarding as I could see the positive impact my volunteering was having. You are required to help out on a ward too and I volunteered on a geriatric ward, which meant that I talked to patients every week as well as helping to distribute food and running errands if they wanted me to.

I decided I wanted to continue volunteering at the hospital and requested to volunteer on Saturdays for two hours every week. I found this an extremely rewarding experience. I met a variety of different people, from cleaners, to patients and doctors. The most challenging part of the scheme was learning how to help those who have dementia, as I found communicating with those affected difficult. However, staff were very friendly and offered to help with any problems that I had. I have gained a multitude of different skills, for example communication skills as I had to make conversation with different patients from different backgrounds every week, as well as having a huge insight into day-to-day life on a hospital ward and the varying types of occupations there.



### Abigail B.

I went to a nursing taster day at Anglia Ruskin University. We were told about mental health nursing and did a task where we practised how to talk to patients. We then had a talk with a tutor about adult nursing, which helped me discover that it wasn't for me. After that we heard from a child nursing tutor where I learnt that child nursing is more about talking to the parents and calming them down. In the afternoon we watched a practical lecture on 'caring for the dead' and we were given a list of important words to learn.



## Music



### Jessica F.

In my work experience at The Junction in Cambridge I helped various teams including marketing, technical, and finance, and worked with other apprentices. My favourite part was working with the technical team, and I found working with finance more difficult. I also found the long hours quite challenging. This placement helped me to develop my social skills, as I am not very confident in this area.



## Pharmaceuticals



### Julie C.

On my three-day work experience at Convergence Pharmaceuticals I shadowed three electrophysiologists and learnt about their work in developing painkillers. On my first day, Dr. Morriset, who was one of the founders, gave me an overview of how their company operates, with chemists and biologists co-operating with each other. She also gave me some prereading on The Book of Pain, where I learnt more about the transmission of pain, as well as responses in the nervous system. I gained practical experience by helping to prepare buffer solutions with the chemists and made cell cultures with the biologists. It was a memorable experience since I was given the opportunity to use equipment that were otherwise not available at school.

I admired their professionalism and patience to teach me the procedures. I observed the patch-clamp technique that was done by the electrophysiologists. They were trying to measure the current of an ion channel to see if their target blockers manage to inhibit the transmission of ions. It was a very difficult lab technique that requires high levels of accuracy. They then had to interpret and analyse their results shown on graphs. I learnt that computers play an important part in storing and concluding their large amount of results. In the beginning, I found it quite challenging to understand the scientific terms and explanations on the transmission of pain since I have only learnt about the nervous system in Psychology AS Level. However, after seeing the practical procedures and hearing a thorough explanation from the electrophysiologists themselves, I began to comprehend the mechanisms of how painkillers work. This work experience widened my knowledge of pain and the opportunities to participate in research related to this area.





# Here's a flavour of our 2016/2017 Careers & Work Experience programme:

**This year Lower Sixth will take part in workshops with a focus on:**

- CV writing
- Interview skills
- Gap year opportunities
- Apprenticeships
- Work placements

**Upper Sixth will take part in:**

- Work Experience showcase
- Financial awareness workshop



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