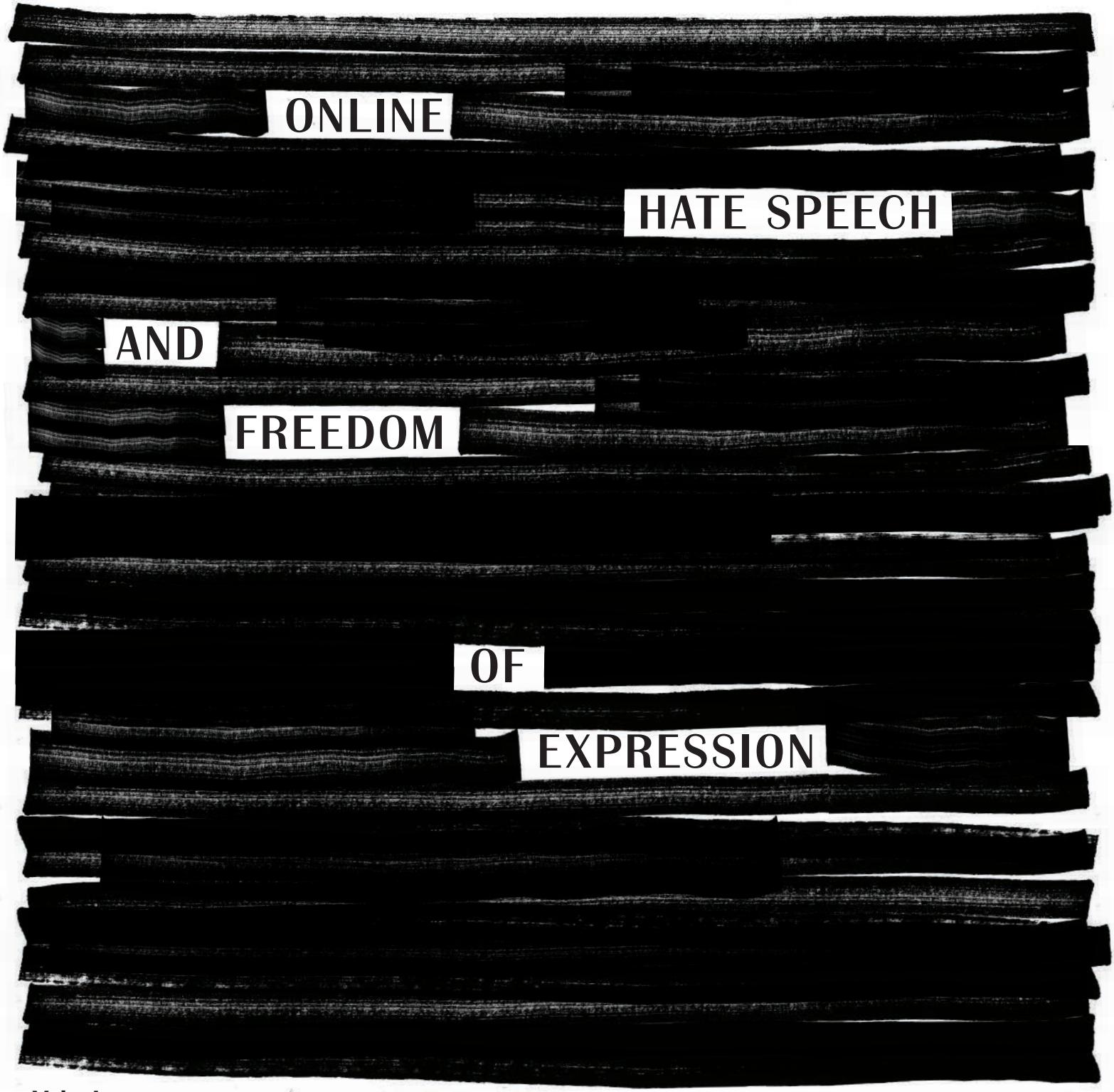
# The Scholar

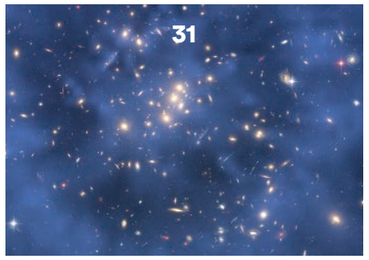



Vol. 1 Issue 4
November 2015
thebrilliantclub.org

The Brilliant Club

PLUS 17 NEW ACADEMIC ESSAYS FROM THE YOUNG SCHOLARS OF THE BRILLIANT CLUB

# Contents
# IN THIS ISSUE







# Guest Editorial
# CHOOSING YOUR UNIVERSITY

**By Dr Paul Greatrix, Registrar of the University of Nottingham**

There are lots of different ways to find out about and help you choose a university course. Indeed there is a massive volume of information available from many official and unofficial sources, from universities themselves and, of course, from newspaper league tables.

When thinking about starting your research on choosing a course and a university, one of the biggest challenges you will face is sorting through this mass of data together with advice from friends, family, teachers and others and deciding what really counts. Deciding where and what to study is a big decision but it's not like buying a washing machine, car or even a house, it is really far more complicated than that.

However, don't be put off! There is plenty of help at hand to enable you to navigate through this confusing landscape. My top 10 tips then are these:

1. See your application to university as a proper **piece of research** which you need to spend a good deal of time on and do thoroughly in order to get to the right outcome for you.

2. The **Student Room**, a huge online forum and resource centre is a place where you can learn from others in the same position as you and get lots of advice on applications and which courses and universities might be best for you.

3. **UCAS**, the University College Admissions Service, which is the body that processes applications to university, has a load of resources too including advice on how to apply, what to put in your personal statement and how to secure funding for your studies.

4. University **open days** are hugely popular among student applicants to help with choosing a university. By visiting a campus and taking advantage of the open day events provided you can really get a feel what student life would be like.

5. Check **social media** – you can often find student blogs from current students but also searching around will lead you to lots of fresh online comment from current students across a range of social media. This is a much more common source of information now for those seeking an inside view on university life.

6. Do use **university prospectuses** for course choices as they contain lots of rich details about courses. It is also important to consider the detail of the modules available, not just the degree title, and the course structure including what other options such as overseas study or work placements might be available.

7. Lots of **people, from teachers to relatives, will be able to offer advice**, views and opinions about the best universities and which courses to study so do quiz them on what they actually know but also get in touch with current students, which some universities can help you do or via the Student Room to see what things are really like.

8. Retain a **healthy skepticism** about what you learn. Don't be dismissive of publicity material - prospectuses do give helpful information about universities and their courses (and there is now legislation to prevent them overstating the facts) – but do read what is said really carefully. Universities are looking to recruit you but not to deceive and it's important to them that they attract students who want to be there, are going to make the most of what is on offer and achieve great results.

9. Look at the **full range of data** associated with the courses you are interested in including career prospects, student satisfaction and research achievement. You might decided that one or two of these aren't important to you but that's your decision.

10. Follow **your passion.** You're going to be a student for three years, maybe longer, so you do need to be really keen on the subject to remain enthusiastic for that length of time.

Now these are all positive suggestions about how to approach selecting a course and university. I want also to mention the **league tables** of universities and subject areas which you will find in the newspapers and online. Whilst much is said about these (and many universities worry about them hugely) I would strongly encourage you to treat league tables with real caution as they have many weaknesses and flaws. To name just a few:

- Most of the criteria used do not offer any guide to the actual quality of education provided. For example, A-Level scores simply reflect the average A-Level scores of those applicants accepted by a particular institution.
- League tables only give you a tiny part of the picture: they don't tell you anything about the real character or atmosphere of a university.
- Most of the data used are several years old. Criteria which use public statistics are normally referring to the position as it was two years before the publication of the league table.
- Regardless of how questionable the particular methodology of totalling scores under different criteria from entirely different data sources is, a consistent performance across a range of league tables is seen by many to be a reasonable indication of a university's or college's overall standing in UK higher education, but that does not necessarily mean that a particular institution is the right choice for you simply by nature of its league table position.
- They add up the outcomes of a set of utterly different activities to create an artificial ranking. Imagine trying to develop a system for measuring the combined value of oranges, badgers and foreign holidays – these are all very different things which are judged in different ways and combining them does not make much sense. This is, however, what league table compilers seek to do.

So, there are lots of reasons, if you do your research thoroughly, to prefer one university over another and one course over another. League tables can form part of that research BUT do handle them with care!

All the best of luck when it comes to making your choices.

**Dr Paul Greatrix,**
**Registrar of the University of Nottingham**

The University of Nottingham
UNITED KINGDOM · CHINA · MALAYSIA



# Introduction
# WHAT IS THE BRILLIANT CLUB?

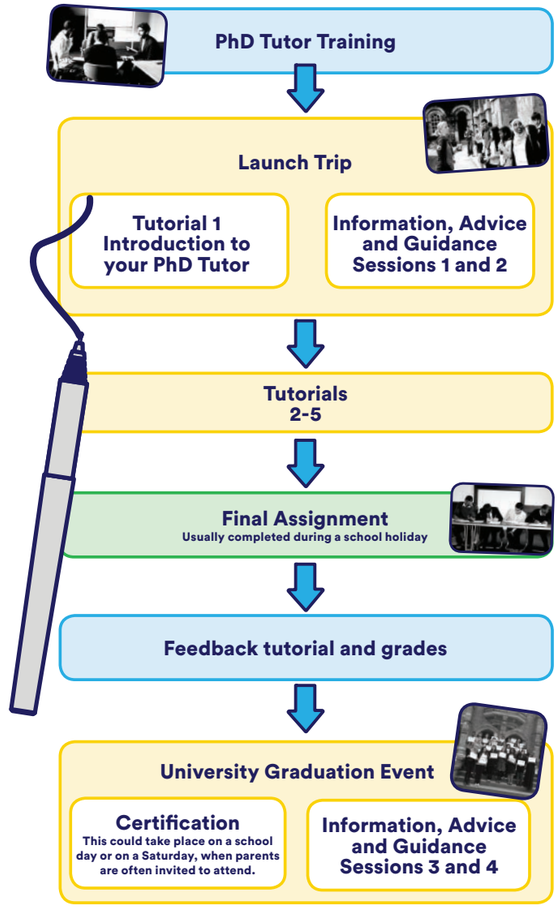
The Brilliant Club is an award-winning charity that exists to widen access to highly-selective universities for under-represented groups, by mobilising researchers to bring academic expertise into state schools, through two key programmes. The Scholars Programme trains PhD and post-doctoral researchers to deliver university-style courses with tough academic challenges to groups of pupils, beginning and ending with information, advice and guidance visits to highly-selective universities. Researchers in Schools is an initial teacher training route for researchers to become classroom teachers and in-school champions of higher education and education research. Both programmes are designed to support pupils in developing the knowledge, skills and ambition that help them to secure places at highly-selective universities.

The Brilliant Club is building a national movement to mobilise doctoral and postdoctoral researchers to engage with schools serving low HE participation communities. We are currently working with nearly 300 schools and colleges across the country, placing over 450 PhD tutors a year to work with more than 7,000 pupils. Our PhD tutors are placed in schools to deliver The Scholars Programme to pupils from Year 5 through to Year 12. As the diagram below shows, the programme consists of a series of tutorials, trips and assignments. It is whilst pupils are on this programme that they produce the final assignments that are included in The Scholar.

The Scholars Programme represents an authentic university-style challenge for the young people that we work with. Key Stage 2 and 3 pupils are asked to produce 1,000- and 1,500-word assignments respectively, which is often the longest piece of work that they have tackled so far in their time at school. By the time pupils reach Key Stage 5, they are asked to complete a 2,500-word assignment, which is at the same level as a piece of university coursework. Pupils receive marks at the key stage above their current level, and are marked in the style of university grades, gaining a 1st, 2:1, 2:2 or 3rd.

We are delighted to be able to showcase our pupils' work and celebrate their achievements in an academic manner and we feel that a journal of academic articles by young scholars is not only the ideal format, but also a natural fit given the charity's work. Publishing original work is an important part of academia and it is enthusing for us to introduce our pupils not only to the world of research but also to the next stages of circulation and response from the academic community.

In creating The Scholar, we have brought together what we feel are the most exciting and compelling of the hundreds of assignments submitted as part of the 2015 Scholars Programme. We hope that all pupils who completed the programme are proud of their achievements but, given the number and quality of assignments submitted, we think that the pupils whose work is included here can be especially pleased. As well as highlighting the achievements of pupils, we would also like say thank you to the PhD tutors, teachers and parents who supported them throughout the programme.



# News

# OUR UPDATES: WINTER 2015

**The Brilliant Club has won a Guardian Charity Award!**
We were delighted to find out that we have won a Charity Award from The Guardian! We were one of 30 charities across the country to be shortlisted in October, from which five winners were finally picked. The award is aimed at showcasing excellence amongst small and medium social welfare sized charities, and we are very proud to have been chosen. Thanks very much to all our school and university partners, to our fantastic PhD Tutors and to everyone who has supported us over the last few years.

**Start your research for your ideal university, degree and course: An introduction from Dr Paul Greatrix, University of Nottingham**
Dr Paul Greatrix, Registrar at the University of Nottingham, has kindly written an editorial jam-packed with information and tips on how to research for your university applications. It is a really handy guide to the difficult and often confusing task of researching higher education institutions and courses and we would advise all sixth-form pupils to read it carefully! Please read, take notes and share.

**Researchers in Schools**
Our new initial teacher training programme Researchers in Schools (RIS) is now one year old, and the first cohort of teacher trainees have gained their QTS (Qualified Teacher Status). Over the summer, 77 new RIS participants joined our training in London, and at the time of writing they have just finished their first half-term in 50 placement schools across the country. The RIS teacher training route is unique in only being aimed at trainees who already hold a PhD. The programme has three aims: to increase and disseminate subject expertise, to promote research, and to champion university access in schools. Researchers have one day per week off-timetable to maintain their research profiles, and many of our current cohort use this time for educational research which feeds back into their practice. We are already recruiting for 2015 – 16, so do check out the researchersinschools.org website if this sounds like it might be of interest to you.

Researchers in Schools

**Check out your local newspaper for our scholars!**
Over the last few months, scholars who have been visiting universities all over the country to graduate from The Scholars Programme have been faced with paparazzi from the local newspapers. Pupils from Castle View School in Southend had their experiences at the University of Cambridge reported in the Southend Echo, scholars from Bishop Fox's School in Taunton were featured in the Somerset County Gazette and Scarning Primary School and Dereham Neatherd High School got a shout out in the Dereham & Fakenham Times. Keep your eyes peeled for more newspaper appearances over the coming weeks when we welcome more pupils to The Scholars Programme in launch trips.

Castle View School visit Emmanuel College, University of Cambridge



# Guest Article

# WHAT WOULD DA VINCI DO? RECREATING ART IN THE CLASSROOM

**The Scholars Programme Last Suppers**
**By Dr Manya Pagiavla, Scholars Programme PhD Tutor**

Dr Manya Pagiavla is a PhD Tutor who has worked with the charity for several terms. Her course, *Leonardo, Artist & Scientist* is always very popular with her pupils, and she has an innovative way of introducing the famous Last Supper painting which takes immersion to another level. Here, she talks about how she developed the idea for her course, and how the Researcher Development Programme training weekend led her to a new method for teaching her favourite painting.

*Leonardo, Artist & Scientist* is a course that introduces students to the idea of 'Universal Man' through the art (paintings) and science (notebooks) of Leonardo da Vinci. The aim is to inspire them, through the pursuit of the universality of knowledge, to take the path of university study. The course idea sprang from my research interests and a recent publication on the library inventories of Leonardo da Vinci, which I co-authored with the authority in the field and Emeritus Professor at the University of Oxford, Martin Kemp.

The aim is to inspire them, through the pursuit of the universality of knowledge, to take the path of university study. This course explores the creativity of Leonardo, the wide range of his interests in the fields of painting, architecture, anatomy, astronomy and beyond, and seeks to explore the intersection between the arts and sciences in order to generate in pupils an interest in acquiring knowledge in a variety of fields.

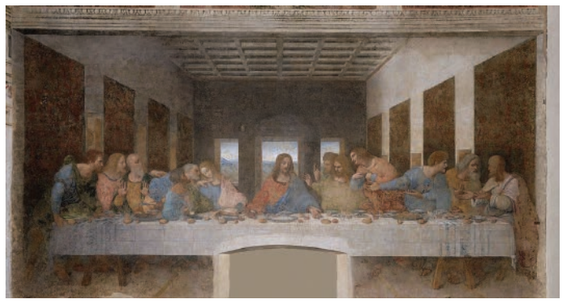
Leonardo da Vinci embodies the union of two different worlds, the arts and sciences, and symbolises the ideal of 'Universal Man'. This course explores the creativity of Leonardo, the wide range of his interests in the fields of painting, architecture, anatomy, astronomy and beyond, and seeks to explore the intersection between the arts and sciences in order to generate an interest in acquiring knowledge in a variety of fields.

I urge students to get inspired by Leonardo, to observe, to create, to write, to invent and to follow his prototype of universality of knowledge and become a 'Universal Man' or 'Universal Woman' in life, that is, a person who will explore interdisciplinary fields and pursue university studies in order to acquire the basis of universal knowledge.

I am currently tutoring at The Brilliant Club and at the universities of Cambridge and Oxford, and I try to pursue self-development in all my research and teaching practices. The highlight of my first ever Brilliant Club training weekend was brainstorming for better practice, and that is when I came up with the idea of the Last Supper Photo Shoots!

At the end of each term, I ask students to enact The Brilliant Club Last Supper at their school. In this way, we wrap up the last-final assignment feedback session in an educational and an entertaining way. The students are notified from the beginning of the course that we are going to close the tutorial series with this photo, where the pupil with the best final assignment would be awarded the role of Christ in the middle of the table, and all the pupils try hard not to get landed with the embarrassing role of Judas. However, I prefer not to put students on the spot and sometimes play Judas myself! We have fun choosing. The headteachers and lead teachers join us as one of the disciples if they wish.

You can see the results below!



Leonardo da Vinci's 'The Last Supper'

The Scholars Programme Last Supper at Ark Academy Wembley, Spring 2015

# IN THIS ISSUE
# Arts and Humanities Articles








Year 5
Key Stage 2

# WHAT IS FAIRNESS?

M. Baron, supervised by C. Pellò

Recently, I have been looking at fairness and trying to work out what it really means. I have noticed that in different contexts, fairness means different things. Fairness is more of an idea than a word with just one correct definition. It has to do with things like equality, respect, compassion, morality and justice. In the next few paragraphs, I will look at fairness in four different contexts and discussing what it means in each of them. Fairness can be defined as 'the quality of treating people equally or in a way that is reasonable'.[1] So does fairness mean 'equal happiness'? When everyone abides by the rules, it usually does. However, in the case where a teacher cancels everyone's green[2] time because a few children in a class have misbehaved, the majority is unhappy. If fairness is 'the quality of treating people equally', then the teacher was fair in punishing the entire class despite the fact that the majority had stayed on green all week. This is unreasonable. Therefore, my answer has to be that fairness does not necessarily mean 'equal happiness'.

I have just mentioned that most of the class managed to stay on green for the whole week. They earned their green time. However, at the end, they did not get what they deserved. This brings me to my next point, which is to do with fairness according to desert. 'In hospitals, nurses are the limbs while doctors are the eyes and brains. Neither can work without the other's presence. Without doctors, the patient's diagnosis would not be delivered whereas without nurses, the medical treatment and other services would be put to a halt'.[3] This describes the symbiotic relationship doctors and nurses have. Nurses are invaluable in the health service. They give medication, perform health checks, lifting and cleaning up after patients and often notice the doctors' mistakes. Nurses have a high level of medical knowledge. However, they are not qualified to perform operations. Doctors spend almost 10 years qualifying. Most of that time will be at university, which is very expensive. After qualifying they are expected to work dangerously long hours diagnosing patients and doing paperwork.[4] A survey that was done by the British Medical Association questioned over 15,000 GPs and 9/10 of them felt that their workload was having 'a negative effect on patient care'. Another survey of more than 2,000 GPs found that 50% said that they were at risk of a mental, physical or emotional breakdown. These statistics are very worrying. Nurses are definitely underpaid, but for the reasons I have just mentioned, I believe that doctors deserve their higher rates of pay.

In this paragraph, I am looking at fairness in education and how a not-for-profit organisation called The Brilliant Club helps students from 'disadvantaged backgrounds' increase their chances of getting into the best universities which are normally for students whose parents are wealthy. According to the statistics, 96% of private school students go on to study at any university compared to 36% of students from state school. Moreover, 48% of private school students get a place at a highly selective university compared to only 18% of state school students.[5] I find this is aggravatingly unfair. Top universities should not have the right to discriminate against a student just because they are not from wealthy families. The Brilliant Club has PhD students who tutor promising students from state schools and have helped lots of them to get into top universities. In this way, The Brilliant Club is helping to balance out the inequality in the education system.

By buying Fairtrade products from the supermarket, I know that I am helping to make sure that farmers and factory workers are being paid a fair wage and that that they will be able to support themselves whether their products sell for a high or low price. To me, Fairtrade means justice, equality, respect and represents fairness in global trade. Fairtrade ensures that workers have decent working conditions and are not being intimidated by their bosses like in Guatemala where some banana workers are murdered for being in a trade union.[6] Ordinary people are given more control over their futures and can choose how to invest their cash in things like bikes to get to and from work, schools, clinics or sewing machines to start community businesses. Furthermore, Kenco is doing equally honourable work in Honduras which has the highest murder rate in the world. Gang members outnumber the police by 3-1 and children are recruited into gangs before they are 10 years old. Kenco started the scheme called Coffee vs. Gangs[7] in August 2014 to enable teenagers to have a future away from gangs. It took 20 young people out of their communities for a year of education and training in how to become coffee farmers. At the end of that year, they will have written a business plan and learnt maths and English. Anyone can see how these teenagers are getting on by going to the Coffee vs. Gangs website. This is a great way for companies to reinvest in people that help to make them millions of pounds or dollars every year. Kenco's innovative thinking has saved many teenagers from being killers.

I have now looked at fairness in four different contexts, so what is my conclusion? What is fairness? I think fairness is about rewarding hard work and not making successful people feel guilty about being rich. It is also about helping those who are less fortunate than we are and being decent people. Fairness is about moral responsibility and being ethical about where we shop and making sure the people who make our clothes and grow the fruits we buy are not being exploited. Fairness is about choosing to invest in people we will never ever meet, but by buying a particular jar of coffee, we help to educate them, save them from gangs and change their futures. I have shown that fairness means different things in different contexts but lastly, I think fairness can be summed up in one sentence: "Always treat others the way you would like them to treat you".[8]

## Bibliography

1. The Oxford Learner's Dictionary.
2. Good to be Green Behaviour Scheme is a whole school approach to behaviour management. It is a simple scheme to positively reinforce good behaviour and encourage improvement. Children are encouraged to 'Stay on Green.'
3. http://www.nursingdegreeguide.org/articles/general/the_differences_between_a_nurse_and_a_doctor/ [28th June 2105]
4. http://www.bbc.co.uk/news/health-33281930 [4th July 2015]
5. www.brilliantclub.org [3rd July 2015]
6. John Wood, "Murdered for cheaper bananas: Guatemala's epidemic of violence against unions" http://strongerunions.org /2014/06/03/murdered-for-cheaper-bananas-guatemalas-epidemic-of-violence-against-unions/ [4th July 2014]
7. http://coffeevsgangs.telegraph.co.uk [28th June 2015]
8. David Stern, (1998) Complete Jewish Bible Matt 7:12 1231

## About the authors

M. Baron is a Year 5 pupil at Morningside Primary School. Caterina Pellò is a PhD student in Classics and Ancient Philosophy at the University of Cambridge, researching the lives of women in the Pythagorean communities.

## PhD Tutor's note

M. actively participated, as well as contributed enthusiastically all throughout the course, and improved her critical and independent thinking skills. Her essay is the outcome of her outstanding performance in class. Overall, I extremely enjoyed working at Morningside Primary School: the pupils were very bright and interested in the issue of fairness, and thus always contributed insightfully to the tutorials.

Year 9
Key Stage 3

# "ALL RANKS AND DEGREES NOW READ" TO WHAT EXTENT DO YOU THINK THIS STATEMENT WAS TRUE IN THE EIGHTEENTH CENTURY?

**S. Santhiramohan, supervised by S. Bankes**

In his autobiography *Memoirs of the First Forty-Five Years of the Life of James Lackington*, Lackington states that "All Ranks and Degrees now READ". But to what extent was this true in the eighteenth century? This essay will attempt to evaluate the quotation mentioned above in terms of the problems readers faced when seeking access to printed works. To do this we will look at the cost of reading, how people learnt to read, attitudes to reading, and who encouraged people to read in all classes. It is important and interesting to study book history as it aids different fields of study and develops our characters and decisions.

Book History is concerned with the way the material form of a book has greatly influenced how a book is read and who reads it. Robert Darnton calls it "The social and cultural history of communication by print".[1] Book History looks at how ideas are packaged and conveyed in books and how they influence the day-to-day decisions and behaviour of society. Don McKenzie and Robert Darnton have both discussed the history of books and have both concluded that Book History allows us to understand about ideas and values which a society promotes and those it rejects. In this essay, I will be referring to criminal records from the Old Bailey database, such as Thomas Wareman's records, to justify and support my reasoning in this essay. This is useful due to the fact that the intensity of the punishment can reveal how seriously the crime was perceived by society and aids us in understanding the reasons behind their actions. I will also be looking at autobiographies of poor eighteenth-century readers to comprehend reading from an eighteenth-century reader's perspective. This is beneficial when looking at this topic because it shows us the difficulties in reading and how people attempted to learn to read. Book History relates to James Lackington's statement as we must take into account the conditions of readers, the availability of books and the way that reading was valued in order to fully interpret this question.

It is important to realise that, although books may be common and easily accessible today, in the eighteenth century it was extremely difficult to get your hands on a book, let alone to read it. It might help if we look at a particular reader and think about why he might not find it easy to access the printed word. On the 13th of July 1715, Thomas Wareman was inculpated for stealing five books, amounting to 25 shillings, from the Compting-House of William Seabroke.[2] To bring this into perspective, 25 shillings is equivalent to £1.25 in present day money.[3] Naturally, for us it would seem that five books for £1.25 is an excellent price, but to the average eighteenth-century reader, 25 shillings would be about a three week salary.[4] This would mean that either they would have to save up money long-term, or go without eating for three weeks, just for a few books. From this, we can infer that Thomas Wareman was most likely a deprived working class man who wanted to get his hands on a book but wherefore we do not know. For a working class citizen, 25 shillings would be massive. However, that would not be a good enough incentive for someone to wield a knife or risk getting arrested - there is more to it than the cost of the book.

At first glance, we may assume that the only cost of reading a book would be to buy the book itself. What we do not take into account are the indirect costs of reading books. Once you had acquired the book, you would need to have a light source, space and privacy, time and ultimately be able to read. The primary source of light would have been candles, but as wax was expensive, most people did not have candles. Therefore, most people burnt animal fat or used moonlight or sunlight to read.[5] However, using animal fat was often a fire hazard and most people had to decide whether to use this as a light source or as food.

Most people in the eighteenth century did not get an education so many were not able to read. This would mean that the cost of reading lessons or school would be added, unless they were able to acquire a person to teach them free of charge. To get space and privacy, they would first of all need a house, which was and still is very expensive to buy. However, houses could be loud and busy so people could not get much privacy or space to read. Thomas Wareman was deprived so we can assume that he could not afford candles, so he most likely used animal fat. Most working class citizens had to sacrifice a day's worth of food to buy animal fat. If he had not stolen the book, Thomas Wareman would have had to stop buying food for a long duration which could have lead to famine and inevitably his death. His only way to get a means of education or entertainment would be to commit an atrocity such as this one. Thomas was interestingly acquitted due to the fact that his prosecutor did not attend the proceedings. However, had he been convicted he would have received a considerable punishment.

Let's look at two other criminals who attempted to steal books. First of all, let's look at Richard Bells. Bells was found guilty of stealing five books worth 20 shillings.[6] He was brought before the jury and was sentenced to death. This shows us that books were considered valuable during the eighteenth century. Books were a new way to access new ideas and information. As new technologies are expensive in current time (such as the smartphone), books were also similarly priced as they were regarded in the same way. We can see that Thomas Wareman (and any other deprived working class person) found it arduous to read books due to the many costs associated with reading a book, both monetary and non-monetary. They would have to resort to felonious feats to read a book unless they were willing to sacrifice many things for themselves and their families. We may be perplexed by how desperate they were to read books, but you should remember that books were like the internet to them. Books were pathways to new ideas and information and printing books was very expensive (hence the high prices). Therefore, people like Thomas Wareman found it difficult to be able to read books. If this is the case, how easy would it have been for a poor child to learn to read in the eighteenth century?

Learning to read in the eighteenth century was certainly difficult for some poor children but for others it might have been easy. There were certain things a poor child needed to be able to read, and some children had better access to these things than others. One of the most important things that children needed in order to learn to read was a teacher. James Lackington, a boy born in 1746 who grew up to become a bookseller,[7] was 'put for two or three years to a day-school kept by an old woman'.[8] Lackington's parents were required to pay a fee of two pence per week. After two to three years, his mother became poorly and could not afford to pay. This shows the difficulties of children who wanted to learn to read; both their parents and themselves had to be determined and willing.



This problem was particularly acute for children whose parents could afford to pay the fees. However, for other poorer children, it was much more difficult.

Children who were deprived to the extent of not being able to afford day-schools had to find other means of learning to read. As with Thomas Holcroft, some children's parents were willing to teach their children to read. Holcroft describes this process when he writes: 'It was in this retired spot that my father himself began to teach me to read'.[9] Thomas was the son of a peddler, which meant that his father's income was generally very low.[10] This resulted in him not having enough money to pay for day-schooling. Thomas's father had to teach him personally to read alongside his long, low-paying job. This shows that they had to be very determined. As he had to teach while working, he would have to find time to teach. This means that lessons would not be regular but instead varied. Therefore, it would have been hard for Thomas to keep up with his studies. Thomas's father was also unqualified so he would have to develop a suitable teaching strategy as he taught. A possible teaching method that his father could have used is teaching how letters sound, then rearranging the letters to get the children to pronounce words.[11] Another method his father could have used is by encouraging Thomas to read chapters from the Bible daily.[12] A text such as this is hard for inexperienced readers to read and was hard to access unless you were a Methodist due to the expensive costs of these books. You can see that in both cases, learning to read required determination. Poor children needed a teacher/tutor or a father/guardian to be able to learn to read. It was easier to learn to read if your parents were affluent enough to afford day-schooling, and it was significantly harder to learn to read without schooling of some kind. Unless you were determined and very hard working, learning to read would be virtually impossible. Therefore, it was very strenuous for a poorer eighteenth-century child to learn to read.

As well as economic difficulties, there were also social and cultural difficulties when learning to read books. Social attitudes and cultural expectations often limited the enthusiasm of certain people to learn to read, such as women. Women were frequently prevented or discouraged from reading in order to secure marriage. This was because rich gentlemen steered away from educated women as they thought they would be independent and disobey tasks ordered by them. Likewise, some men were discouraged from reading as their fathers would think that they would not continue the 'family business' or become criminals. One social/cultural attitude directed towards all people was that it would seclude them and make them socialise with others less. Notice how this is similar to how we link computers with limiting social activity in the modern world. These inclinations also made it herculean for people to learn to read, and occasionally, people would undertake extreme measures to impose these ideologies.

As previously stated, this essay set out to evaluate to what extent the quotation mentioned beforehand was true during the eighteenth century. We studied the material form of books and how it influenced who reads a book and how it is read; the accessibility of books in the eighteenth century; and how easy it was to learn to read as a poor child during the specified time period. It is clear that James Lackington's statement is not completely true as books were hard to access due to the many costs of reading and limitations caused by the material form of the books.[13] Also, it was hard to learn to read as a poor child so only the wealthiest could afford to read thoroughly. The statement could be true because some people still managed to read when they were poor through many methods such as thieving or going to a school (if they were lucky), but I believe that it is mainly not true because the majority of people who were of lower ranks and degrees did not read.

## Bibliography


Collins, Alan, 'The Growth of the Reading Public during the Eighteenth Century', The Review Of English Studies 2:8, (1926) 428-438

Darnton, Robert, 'What is the History Of Books?', Daedalus 111:3, (1982) 65-83

Elliot, J.E, 'The Cost of Reading in Eighteenth-Century Britain: Auction Sale Catalogues and the Cheap Literature Hypothesis', ELH: English Literary History 77:2, (2010) 353-384

Elliot, Simon, '"Never Mind the Value, What about the Price?", Or, How much Did Marmion Cost St. John Rivers?', Nineteenth-Century Literature 56:2, (2001) 160-197

Holcroft, Thomas; and William Hazlitt, Memoirs of the Late Thomas Holcroft: Written by Himself; and Continued to the Time of His Death, (London: Longman, Hurst, Lees, Orme and Brown, 1816)

Jackson, Ian, 'Approaches to the History of Readers and Reading in Eighteenth-Century Britain', The Historical Journal 47:4, (2004) 1041-1054

Lackington, James, Memoirs of the First Forty-five Years of James Lackington (London: Lackington, 1791)

Mckenzie, Don, Bibliography and the Sociology of Texts (Cambridge: Cambridge University Press, 1999)

Newbery, John, The History of Little Goody Two-Shoes (London: Newbery, 1765)

Sher, Richard, 'Corporatism and Consensus in the Late Eighteenth-Century Book Trade: The Edinburgh Booksellers' Society in Comparative Perspective', Book History Journal 1, (1998) 32-90

Britannica, http://www.britannica.com/biography/Thomas-Holcroft

Geffrye Museum, http://www.geffrye-museum.org.uk/collections/thematics/18th/lighting/page-1/

Huffington Post, http://www.huffingtonpost.com/2013/05/30/book-cover-design-indies_n_3354504.html?

Labouring-Class Poets, https://lcpoets.wordpress.com

London Lives 1690 to 1800, htpp://www.londonlives.org

National Archives, http://www.nationalarchives.gov.uk/currency/

Old Bailey Online, http://www.oldbaileyonline.org

Pascal Bonenfant, http://www.pascalbonenfant.com/18c/wages.html

Prism, ufprism.com/2015/01/12/why-is-history-still-relevant/

Temple Of The Muses, http://www.templeofthemuses.org/?page_id=9

The World of the Habsburgs , http://www.habsburger.net/en/chapter/i-want-more-revolution-reading-eighteenth-century?language=en

Understanding old British money, <http://resources.woodlandsjunior.kent.sch.uk/customs/questions/moneyold.htm>

University Of Michigan, http://www.umich.edu/~ece/student_projects/money/workB.htm

Victoria and Albert Museum, http://www.vam.ac.uk/content/articles/i/introduction-to-18th-century-fashion/


## About the authors

S. is a pupil at Hammersmith Academy and was in Year 9 when he produced this essay. Dr Sophie Bankes recently completed a PhD in the History of Reading at the Open University. This course examined issues surrounding access to reading and education at the end of the eighteenth century and sought to answer such questions as 'How could you learn to read if you didn't go to school?' or 'What did it actually cost to be able to read a book?'.'

## PhD Tutor's note

This essay was one of several excellent pieces of work produced by a really talented cohort of pupils at Hammersmith Academy. I chose S.'s work because of the clarity of the argument and also because of the wide-ranging independent research it displays. I like the way the author makes use of Old Bailey Online to capture evidence of long lost interactions with books and I enjoy his creative engagement with the subject matter. I would like to applaud the hard work, imagination and dedication of both the groups I taught. It was a pleasure to teach them and I have no doubt that more great work will emerge from them.

Year 10
Key Stage 4

# HOW USEFUL IS JOSEPH CAMPBELL'S HERO WITH A THOUSAND FACES AS A TOOL FOR LITERARY CRITICISM?

E. Sudbury, supervised by G. Miller

## Essay Abstract

This essay explores the usefulness of Joseph Campbell's Monomyth Theory as a tool for literary criticism by applying it to analyse two texts spanning over 140 years, *Alice in Wonderland* (1865) and the *Twilight* series (2005-8). Considering both the benefits and the limitations of the theory, it demonstrates how, far from being the 'universal theory' Campbell set out to create, it is in fact only applicable to particular genres. Although it can be illuminating in terms of analysing plot structure and character stereotypes, and as a tool for comparing texts within specific genres, is it is nonetheless prescriptive and one-dimensional. Drawing on more recent critical theories such as feminism, deconstructionism and new historicism, the essay concludes that *The Hero With a Thousand Faces* has limited uses as a tool for literary criticism.

## Essay body

I believe that Campbell's Monomyth Theory is not a successful tool to use for literary criticism as it limits originality and imagination within texts and is restricted to a few genres such as thriller and action. However, on the other hand, Campbell's Monomyth Theory can enable the critic to break down the plot into its different stages and divide characters into their types, and can be used to compare texts. Campbell's book *A Hero with a Thousand Faces* (1949) explains the theory of the Monomyth and its 17 stages which are divided into three sections: separation, initiation and return. The Monomyth Theory is used by authors to structure the plot, allowing the reader to anticipate the events in the text. I will compare Campbell's Monomyth Theory with other critical theories to explore its limits and benefits while analysing how different people perceive Campbell's theory. My analysis will be backed up by two texts- *Alice in Wonderland* (1865) and *Twilight* (2005-2008). These two texts will help support my findings on how successful Campbell's Monomyth Theory is as a tool for tool for literary criticism. I will find the stages of the Monomyth in the texts and evaluate the limitations and benefits of using Campbell's Monomyth Theory, and compare it with other theories.

In my opinion, Campbell's Monomyth Theory is not a useful tool for literary criticism because although it can be applied to analysis of a text's structure and plot, Campbell's Monomyth Theory limits the author's imagination and is only relevant for a few genres. Neil Gaiman thought that Campbell's Monomyth Theory lacked creativity for writers. Having read *The Hero with a Thousand Faces*, he commented as follows: "I think I got about half way through, *The Hero with a Thousand Faces* and found myself thinking if this is true- I don't want to know, I really would rather not know this stuff. I'd rather do it because it's true and because I accidentally wind up creating something that falls into this pattern than be told what the pattern is" (Brilliant Club Booklet p.5).

Only a small selection of stories can completely fit into all the stages of the Monomyth. However, most adventure and thriller stories do include a fair amount of the 17 stages which make up Campbell's Monomyth Theory. For example, *Alice in Wonderland* is a story about a young girl who adventures through a place named Wonderland. This story arguably fits into the three main stages- separation, initiation and return. Separation is when Alice falls down the rabbit hole while at the same time following a white rabbit with a pocket watch into Wonderland. This is followed by the initiation stages where she meets many different characters who question and deceive her until Alice is placed in the games against the Queen of Hearts. Then the return begins when Alice finds herself wrongly accused of two incidents and is put on trial. However, Alice escapes by eating magic mushroom given to her at the beginning. She wakes up back in the real world but still retains the memories of her adventure.

In Campbell's Hero with a Thousand Faces the hero is male which firstly causes the Monomyth to be less universal than it claims and then limits the author's creativity regarding the character's gender. This is because in Campbell's Monomyth Theory the hero is male. In response to Maureen Murdock's *The Heroine's Journey: A Woman's Quest for Wholeness* (1990) a feminist version of A Hero with a Thousand Faces, Campbell said "Women don't need to make the journey. In the whole mythological journey, the women is there. All she has to do is realise that she's the place that people are trying to get to" (Brilliant Club Booklet, p.5). Campbell reinforces female stereotypes that were considered acceptable in 1949 (the year of the first theory's model). Taking this into account, *Alice in Wonderland* reveals one of the major limitations of Campbell's Monomyth because the 'hero' is female.

The other text that I will use to support the evidence I conclude about Campbell's Monomyth Theory is *Twilight*. Like *Alice in Wonderland*, *Twilight*, which is made up of four books, has a plot structure which fits broadly into the three main stages of Campbell's Monomyth Theory. It starts with separation when Bella Swan, a high school student, meets Edward Cullen, a vampire who hasn't aged since 1918. Bella has her suspicions when Edward saves her from being hit by a moving vehicle and searches about old tales about vampires. Edward finally tells Bella about vampires expecting her to be frightened away. Instead Bella becomes more intrigued. Their love story continues through the next two books of *Twilight*. This is the initiation. The return begins when Edward and Bella have a half human, half vampire child which creates drama in the vampire council call Voltruil. The Voltruil feel Bella and Edward child's is a threat and start a fight. The battle ends before it starts when a gifted member of the Cullen family convinces the council to call off the battle by showing them the future. The Cullen family and Bella are finally left in peace.

Again, the Monomyth does not take into account that stories can belong in two or more genres. For example, in *Twilight*, the story is not only an adventure story but a romance as well. The 17 stages of the Monomyth do not include falling in love and the birth of a child which appear in *Twilight*. Some of the stages appear in different sections or appear throughout the plot such as Meeting with the Goddess where "the hero encounters a figure or situation that represents all that the ordinary man/woman can conceive of human happiness" (Brilliant Club Booklet, p.26) and Woman as Temptress where "the hero discovers that mastery of the world can be a trap that prevents him/her from achieving full transformation" (Brilliant Club Booklet, p.26). I believe that these two stages in particular happen throughout the plot. For example, Campbell's Temptress is female in the stages of the Monomyth but debatably many people, both male and female, perform as the Temptress in *Twilight* for both Bella and Edward. This is the same for stage seven: Meeting with the Goddess.

The Swiss psychologist Carl Jung believed that regardless of characters' cultural or historical contexts, the same character types occur in many stories and myths across the world. If we apply Jungian Archetypes to *Twilight*, we can see that the text does in fact reinforce gender stereotyping, despite being written in the 21st century with what appears to be a female hero. Edward appears as not only the hero, which is itself questionable as in the end it is a member of his family who stops the fight, but also the animus of Bella where she appears as the anima. Even though Bella is shown to be the main character she is not an arguably important role when using Jungian archetypes. Taking this into account, *Twilight* from a feminist perspective, reveals the power of men towards women and enforces the stereotypes of women to be helpless and there to be saved instead of powerful and an equal.

Applying Jungian archetypes to *Alice in Wonderland*, we can see that not all of the characters are clear archetypes. The shadow/ wicked witch is the Queen of Hearts, the wise old man is the Mad Hatter and the trickster is the Cheshire Cat. Alice, like Bella, is not a clear archetype. Although she is the main character, Alice is not portrayed as a traditional hero because she does not save anyone apart from herself or return with "boons to bestow on her fellow man" (Brilliant Club Booklet, p.22). From a deconstructionist critical perspective, it can be argued that Alice merely depends on magic to help her escape from danger and comes across as childish and selfish. However, *Alice in Wonderland* was written in 1865 so from a new historicist perspective the story does not have the gender stereotyping expected. As *Alice in Wonderland* was written in the Victorian period where women were not considered to have the same rights as men, readers would have expected the same opinion in the book. However, Alice, who is female, is the main character in *Alice in Wonderland*. This contradicts the belief the women were lower than men and cannot be important. The writer, Lewis Carroll, was in fact a man. From a new historicist perspective, it can be seen that the idea of traditional roles for women was not shared by all.

Overall, this essay has shown the limitations and benefits when using Campbell's Monomyth Theory as a tool for literary criticism and in my opinion the theory is an unsuccessful literary tool because it was written only for action, thriller and adventure genres. The Theory also does not take into account other events like falling in love and the birth of a child that fall within a different genre, as demonstrated by *Twilight*. On the other hand, Campbell's Monomyth Theory helps to break down the plots using the 17 stages and can sort characters into the different role that are played within the stages. It can therefore be used by writers as a measure of their originality and imagination in this regard. The Monomyth was claimed by Joseph Campbell to be universal. However, as I have demonstrated, that is not the case as it only accounts for a particular type of text and presents a one-dimensional stereotype of men and women.

## About the authors

E. is a year 10 pupil at The King John School in Benfleet, Essex. Gemma Miller is a PhD student at King's College, London researching the representation of childhood in contemporary performance of Shakespeare.

## PhD Tutor's note

E. essay is well structured, convincingly argued and beautifully presented. She demonstrates a sophisticated understanding of historical and literary context, and applies complex literary theories with confidence and fluency. This essay would not be out of place among KS5 students.

Year 8
Key Stage 3

# CAN TERRORISM EVER BE JUSTIFIED?

M. James, supervised by S. Ibrahim

## Introduction

Terrorism has been used as a political weapon for thousands of years, by individuals, underground movements, suppressed communities and states. But can it ever be justified? In this essay I will look at some historical and modern examples of terrorism and argue that terrorism can never be justified on moral grounds, with the exception of extreme situations where a community's very survival is threatened. I will define terrorism, in the widest possible sense and examine the thinking of various writers on the subject of terrorism, exploring two philosophical camps – deontology and consequentialism. These two views will be applied to the beliefs and struggles of Nelson Mandela and Martin Luther King and will show that the ultimate goals for both men were not achieved by acts of violence or a consequentialist approach. I will argue that a morally sensitive version of deontology can provide the necessary philosophical ammunition to argue that terrorism is neither effective nor just.

## Literature Review

Before I set out my view that terrorism is immoral, I will explore three examples of terrorism, two historical and one modern, to back up that view. My first example is the Sicarii – a terrorist group from the 1st century. Their goal was the liberation of Judea from Rome. Their methods became increasingly violent and they even murdered a whole village of their own people to survive during a siege. Although the only source we have on the Sicarii is a Roman called Josephus, whose account may be biased, we do know the Sicarii's goals were not achieved, in spite of much bloodshed and eventually mass suicide[1.] 1500 years later the gunpowder plot saw Guy Fawkes and a group of other Catholics attempt to blow up parliament in the fight for more equal rights for Catholics under Protestant rule[2]. They failed, but killing so many people was more likely to have provoked the Protestant king to oppress them further. My final example is Boko Haram, a militant group in Nigeria who carry out violent and traumatic attacks to protest against the education of girls, amongst other things. In 2014 they kidnapped 200 school girls, used them for slaves and made them convert to their religion[3]. With the Sicarii and Guy Fawkes I can see a defensible cause, but cannot see terrorism as either just or effective. With Boko Haram the cause is impossible for me to understand and is completely alien to my world view.

## Definitions

According to the Oxford English Dictionary, terrorism is 'the unofficial or unauthorised use of violence and intimidation in pursuit of political aims…'[4]. I think this is a valid definition, but it doesn't mention the victims. Igor Primoratz addresses this, describing terrorism as 'the deliberate use of violence, or threat of its use, against innocent people'[5]. In 2005 the United Nations under Secretary-General Kofi Annan, proposed a similar definition:

'We (the world leaders) affirm that the targeting and deliberate killing of civilians and non-combatants cannot be justified or legitimised by any cause or grievance… and constitutes an act of terrorism.'[6]

Both the UN and the Primoratz definitions refer to non-combatants and civilians, also often described as 'innocents'. This is what's known as a 'narrow' definition of terrorism - it's only terrorism if innocents are targeted. I believe we need to use a 'wide' definition of terrorism – that an act of violence against combatants, outside war, can also be defined as a terrorist act[7]. If a rebel movement, with a just cause, attacks a government army barracks and kills hundreds of soldiers, for me that is a terrorist act. The soldiers are individuals, as well as representatives of a government and in that respect are also 'innocents'. My final point is to be clear that 'justification' for me has a moral dimension – to justify something is to believe it is morally defensible.

## Analysis

I will now look at two ethical theories used when arguing whether terrorism is justified, deontology and consequentialism, and apply them to two specific causes and figures – Nelson Mandela and the fight against apartheid and Martin Luther King and the fight for African-American civil rights. I will conclude that terrorism cannot be justified and that a morally sensitive version of deontology is the most effective ethical framework for judging what can and can't be justified.

Consequentialists believe the ends justify the means. They define a worthy cause and see actions to achieve that cause only in terms of how effective they are, not in moral terms[8]. Take the example of the Jewish Stern gang in Palestine after WW2 – their terrorism, according to author Bruce Hoffman[9], led to the withdrawal of British troops from Palestine and the creation of Israel. A consequentialist who believed in that cause would say their terrorism was effective and therefore justified.

For deontologists, there is a universal moral code. Actions are either right or wrong and if an action, such as terrorism, is wrong then it is always wrong and can never be used as a 'tool' to achieve a just cause[10]. A deontologist who believed in the cause of an Israeli state would not support terrorism to achieve that.

Looking at my two case studies, I would argue that Martin Luther King represented a deontological view of political violence. Many people in the struggle for African-American civil rights believed violence could be used as a tool to achieve those rights but King never wavered from his belief that non-violence was the only way[11].

Nelson Mandela, on the other hand, justifies a consequentialist approach in his autobiography The Long Road To Freedom when he talks about how his Spear Of The Nation movement considered different types of violent activities. Sabotage was their preferred choice, but, he says, 'if sabotage did not produce the results we wanted, we were prepared to move on to the next stage: guerrilla warfare and terrorism'[12].

The views of both the consequentialist Kai Nielsen and the deontologist Virginia Held would support Mandela's positon[13]. Held suggests that attacking a part of society that enjoys certain rights is justifiable in order to win those rights for everyone. I think this view doesn't treat the potential victims as individuals. Nielsen believes the use of terrorism is simply a question of tactics: 'it all depends on its usefulness as a method of achieving morally and worthwhile objectives'[14]. However, another consequentialist, Nicholas Fotion, sees this view as too 'permissive'[15]. For him, terrorism is the last resort, if there's no other way that's 'morally less costly'. This supports King's view that using violence means losing the moral argument.

I believe King was right and Mandela was wrong – non-violent campaigning led to the Civil Rights act of 1964. Of course, innocent people were killed - for example James Reeb, a white Unitarian minister, murdered by white supremacists in Selma, Alabama[16] . But he would have known protestors were being threatened constantly with violence. For victims of a terrorist attack there is no element of choice at all – the terrorist makes all the decisions. How can that ever be morally justifiable?

Mandela's approach led to 27 years in prison. I believe the eventual end of apartheid was brought about by economic pressure, by global opinion and, most importantly, by the negotiations between Mandela and the South African government after his release in 1990. Mandela and South African President, FW De Klerk won the Nobel Peace Prize in 1993. Surely that shows that the path of non-violence is the most effective path.

Although I believe terrorism is always wrong I think a pure form of deontology is problematic. Given the chance to detonate a bomb at a meeting of Nazi leaders, should a Jewish resistance fighter carry out the attack? For Michael Walzer, this would be a case of 'supreme emergency'[17] – when terrorism is justified if a community is threated by extermination or enslavement. This would contradict one of history's most famous deontologists, Immanuel Kant. Under Kant's 'categorical imperative' killing is always wrong, no matter how extreme the circumstances[18].
I think violence in certain extreme situations could be justified, but only if I was convinced this was morally the right thing to do. This is what I mean by a morally sensitive version of deontology.

## Conclusion

In conclusion, I believe I have made the case that terrorism can never be justified except in cases of 'supreme emergency'. My case against terrorism has been one centred on arguments of morality but by discussing several examples I have also shown that terrorism is rarely effective. My focus on the examples of Nelson Mandela and Martin Luther King showed the path of non-violence was eventually the most effective. In highlighting the need to choose a wide definition of terrorism, I made the case that seeing so-called combatants, outside war, as never being 'innocents' was flawed as it denies the rights of the individual. Through my study of the main schools of thought of consequentialism and deontology I was able to reject consequentialism on moral grounds – because violence is seen as a tactic or tool and again the rights of individuals are ignored. Instead I have proposed my own version of deontology, which acknowledges that rigid deontology robs us of the right to make specific moral choices in extreme circumstances. My belief is that a morally sensitive version of deontology is best and is the most effective way to argue that terrorism cannot be justified.

## Bibliography

[1] Law, R. (2009) 'Terrorism: A History', Cambridge: Polity, 27-29 (as summarised in course book, www.thebrilliant.org )
[2] Law, R. (2009) Terrorism: A History, Cambridge: Polity, 52-54 (as summarised in course book, www.thebrilliant.org )
[3] case studys.docx from coursework, www.thebrilliant.org
[4] http://www.oed.com/view/Entry/199608?redirectedFrom=terrorism#eid, Accessed 19 June 2015
[5] Primoratz, I. 'Terrorism', http://plato.stanford.edu/entries/terrorism/ , 23 Feb 2015 (revised version), (as versioned in course book, www.thebrilliant.org )
[6] Deen, T. 'UN Member States Struggle to Define Terrorism' , http://ipsnews.net/news.asp?idnews=29633 , 25 July 2005, Accessed 23 July 2015
[7] Primoratz, I. 'Terrorism', http://plato.stanford.edu/entries/terrorism/ , 23 Feb 2015 (revised version), (as versioned in course book, www.thebrilliant.org )
[8] Primoratz, I. 'Terrorism', http://plato.stanford.edu/entries/terrorism/ , 23 Feb 2015 (revised version), (as versioned in course book, www.thebrilliant.org )
[9] The Economist, book review, http://www.economist.com/news/books-and-arts/21646709-what-successive-generations-learned-about-terrorism-middle-east-long-long-road , 21 Mar 2015, review of Hoffman, 'B Anonymous Soldiers: The Struggle for Israel, 1917-1947 '
[10] Primoratz, I. 'Terrorism', http://plato.stanford.edu/entries/terrorism/ , 23 Feb 2015 (revised version), (as versioned in course book, www.thebrilliant.org )
[11] http://www.thekingcenter.org/king-philosophy, Accessed 27 July 2015
[12] Mandela, N. (1994), 'The Long Walk To Freedom', 173 (Chapter 45)
[13] Primoratz, I. 'Terrorism', http://plato.stanford.edu/entries/terrorism/ , 23 Feb 2015 (revised version), (as versioned in course book, www.thebrilliant.org )
[14] Primoratz, I. 'Terrorism', http://plato.stanford.edu/entries/terrorism/ , 23 Feb 2015 (revised version), (as versioned in course book, www.thebrilliant.org )

### About the authors

M. James is currently a Year 8 pupil at Newminster Middle School in Morpeth, Northumberland. Sondos Ibrahim is a 2nd year PhD Student in Linguistics at Northumbria University, Newcastle.

### PhD Tutor's note

M.'s essay demonstrates an outstanding level of engagement with the philosophical material covered on this course. Her essay is not only extremely academically robust but it is also beautifully written, clear and concise. M.'s impressive bibliography is a testament to her willingness to conduct extensive further reading beyond the scope of the course material. It was an absolute pleasure to teach all of The Brilliant Club's scholars at Newminster Middle School: this course is certainly challenging! It was a real delight to work with such articulate young people.

Year 10
Key Stage 4

# ONLINE HATE SPEECH AND FREEDOM OF EXPRESSION

R. Khatun, supervised by A. Kedveš

Hate speech is any "speech that attacks, threatens, or insults a person or group on the basis of national origin, ethnicity, colour, religion, gender, gender identity, sexual orientation, or disability."[1] Due to the recent advancements in technology people are now able to spread hate speech through online platforms. The new development of online hate speech has produced many issues, particularly in regards to the controversy in breaching human rights. Many conflicting views are held about online hate speech and, when encountered, it is difficult to deal with it without causing one of the views to be offended.

One of the most common ways of dealing with online hate speech is removing any material that is offensive and can be classified as a form of hate speech. This practice is commonly used by social media platforms. Once something has been identified as hate speech and determined how severe it is, the website often removes the post, comment or video and also deletes the user's account. The most common argument in support of this practice is that the user has violated the terms of service. This method is effective and ensures that hate speech does not spread rapidly through the web. The removal of offensive speech on the internet creates a safer and more united forum, which is not divided through negative views and actions. While this method is efficient, there are certain problems caused by it.

"Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers"[2] (Article 19 of the Universal Declaration of Human Rights).

Many people would class the action of removing hate speech as censorship, i.e. the control of the information and ideas circulated within a society[3]. By removing these posts, social media websites are restricting the opinions of the users and the freedom of expressing it. The people who voice these opinions often use the argument that they have the right to freely express their opinions and views and are being denied their basic human rights. This means that in spite of how offensive a view may be perceived to be, people still have the right to express it. Living in a society based on the fundamentals of democracy is the reason behind a cohesive society. Debate and discussion are the basis for a democratic society, and enables society to flourish with the exchange and development of ideas. The removal of online hate speech conflicts the idea of democracy by restricting one view in order to favour another, depleting the entire belief of equality. Censorship is often associated with dictatorship; once certain views are being taken away to prohibit hate speech, there is a likelihood of the hateful view becoming greater due to the repression.

An example of this particular method of dealing with online hate speech can be observed in the case of James Foley. The murder of US journalist James Foley at the hands of the militant group ISIS was recorded and the video uploaded to YouTube and Twitter. The video was viewed by a countless number of people, before YouTube removed the video and Twitter removed any trace of the images used from the video. This is understandable, particularly because the graphic images portrayed in the video are not suitable for viewing and the extremist views portrayed in the video could rapidly spread through the population. In addition, when making a public statement a YouTube spokesperson said "YouTube has clear policies that prohibit content like gratuitous violence, hate speech and incitement to commit violent acts, and we remove videos violating these policies when flagged by our users"; furthermore it was said that they "also terminate any account registered by a member of a designated Foreign Terrorist Organization and used in an official capacity to further its interests."[4]
While the majority of the population rightly agreed with the action the websites had taken, a small minority argued that because an increasing number of people look to these websites as their source of news, it is important that they promote freedom of speech and deliver unbiased news.

Although it is fairly easy for the authorities to identify forms of online hate speech, dealing with them accordingly is a problematic issue. The internet spans the entire globe and is often seen as a way in which people can communicate freely. Due to the ease in which sites can be created and that the laws in the virtual world are not governed as strictly, online hate speech can spread. The internet is driven by its users and the fact there is no set governance means that it is difficult to take down websites even if there is a good reason such as the website promotes violence against a community and advocates discriminatory acts. If the websites are taken down, they can easily be opened again with the same content but at a different location. Another problem with attempting to remove offensive material from the internet is that they are often classed as the property of an individual or a company, meaning that the regulation of law is not always present so ultimately the response to hate speech is their choice. They are enabled to allow any form or type of content within their websites. Their reaction to hateful speech is often determined by the action the law takes to encourage the removal.

Furthermore, the fact that the internet covers the entire world makes it increasingly difficult to persecute these sites due to their location. Certain countries views of freedom of expression differ, for example the USA's view compared to the European Human Rights Law. Freedom of Expression is considerably more liberal in America, so even if a person openly expresses violent or racist views, they do not face the same consequences as they would in a European Country. Many websites are located within the USA, and so hate sites that are located within it cannot be removed as easily as if they were in a European Country.

Prosecution is often used as a way of dealing with online hate speech. However, there can be a conflict in the views held of this prosecution because of how it is connected to the freedom of expression. The government of the country often prosecute individuals they find guilty of hate speech. "In July 1985, Danish journalist Jens Olaf Jersild interviewed a group of radical youths from a xenophobic group, the Greenjackets, as a part of Denmark's Radio's Sunday News Magazine. The interview, which was broadcast via radio, featured several clips of Greenjacket members making derogative statements about minority racial groups and immigrants. Jersild and Lasse Jensen, the head of Denmark's Radio's news section, were later convicted of aiding and abetting the Greenjackets in publishing racist statements and were ordered to pay a fine. However, European Court of Human Rights (ECHR) later held that the Danish Court's ruling violated Jersild and Jensen's freedom of expression, which is protected under Article 10 of the European Convention on Human Rights (ECHR)."[5]

This case held many controversial issues; particularly because many people felt that the journalists had the right to expose this group and inform the public of their views and beliefs. However, the prosecution argued that while there was the right to freedom of expression, the journalists had deliberately incited the members of the group to portray their views. In addition, the interview had been edited so that what was shown was purposefully chosen and manipulated to get a certain point across. This persecution was not successful as the Court ruled that the journalists were entitled to show these views and that the Danish Government had not shown that there was ulterior motives to the showing of the interview.

"'Although the specific remarks made by the Greenjackets, read out of context, were highly offensive, the way in which they were presented and the objective pursued by the applicant were, in the circumstances, sufficient to outweigh the effect, if any, on the reputation or rights of others.' The ECHR found that the Danish government had not adequately demonstrated that a limitation on expression was warranted by a legitimate aim, and thus, the limitation was not 'necessary in a democratic society', as required by Article 10."[6]

Moreover, the internet is a worldwide community that helps people communicate easily. It is considered a great resource to billions of people and one of its greatest aspects is that it enables people to communicate in a way that wasn't available before. The interchange of ideas and opinions, free discussion and debate is one of the many favourable aspects of the internet; by censoring hate speech and placing stricter monitoring, the amount of online hate speech will decrease but there would be consequences on the overall way in which people utilise the internet and it is possible that the internet would lose a key aspect of its purpose.

Another popular way of battling online Hate Speech is through campaigns on a local, national and global scale. These campaigns often use peaceful methods to counteract violent hate speech that helps create awareness around the particular issue and promotes free speech, equality and unity. An example of a very popular campaign was the No Hate Speech Movement which advocated the use of peaceful methods to counteract hate speech.

"The Campaign is part of the project Young People Combating Hate Speech Online running between 2012 and 2014. The project stands for equality, dignity, human rights and diversity. It is a project against hate speech, racism and discrimination in their online expression. The working methods are awareness raising, advocacy, and it also seeks for creative solutions. It is a project for action and intervention. The project equips young people and youth organisations with the competences necessary to recognize and act against such human rights violations."[7]

The campaign was extremely successful and encouraged many of the supporters to identify hate speech and report it to the campaign's website. Action was then taken to battle the hate speech and ensure that the offender would not repeat their mistakes.

"The campaign is against the expressions of hate speech online in all its forms, including those that most affect young people, such as forms of cyber-bullying and cyber-hate. The campaign is based upon human rights education, youth participation and media literacy. It aims at reducing hate speech and at combating racism and discrimination in their online expression."[8]

Part of the campaign's success was because of the opportunity it provided for the youth to actively take part in keeping the internet a united place for communication and discussion. They reached out to people who had suffered at the expense of hate speech and provided them with a platform to make a difference and combat the things that had isolated and victimised them. By increasing the education and awareness of human rights and hate speech/ crime it is predicted that hate crime will drastically decrease and that the knowledge provided will create a more united platform that appreciates and accepts everyone's differences. The campaign provided education on how to identify hate speech, asking people to question the intention, the severity of the expression, whether it is racist or discriminatory, is it hurtful or dangerous and what can be done to solve the issue. This enables the user to categorise the hate speech and report it accordingly ensuring that it isn't mistakenly perceived as hate speech. This ensures that the campaign deal with it efficiently and correctly, giving them the time they need to focus on their priorities.

Another example of a campaign that discouraged hate speech was one that spread across the entire globe, through which people protested against the derogatory pages on Facebook that encouraged sexism and rape called the "#FBrape" that spread quickly. It is estimated that more than 50,000 had tweeted in support of the campaign and more than 222,000[9] people signed the petition. The campaign's purpose was on the content that positively conveyed rape and abuse towards women. It was organised by around 40 women's groups and individuals and involved a letter to the site expressing their opinions towards the content. The campaign appeared successful because after the media coverage it received and their persistence, a majority of the content was removed and Facebook later apologised in a formal statement in which they informed people that the content was "vulgar" and that as a site they do not support any of the views that were portrayed by the content.

Both of these campaigns highlight how successful peaceful protests and support in numbers are in combating online hate speech. Sites were motivated to deal with the content when they realised that the content was offending a wide audience that required action. However, the campaigns are not always as successful particularly when the hate speech isn't impacting a widely represented community. Social media sites often ignore hate speech that doesn't draw a great deal of attention to it or doesn't affect a large community. This means that when a small minority do speak out, it is often ignored and doesn't gather support.

Overall, the practices that a person can use to combat hate speech always hold controversy. The entire argument of freedom of expression makes it difficult to counteract speech that supports hateful views. By removing hate speech from platforms such as social media, there is a risk of an uproar where many people argue that their rights are being limited and taken away from them. There will be demands and claims made such as other people's views are being held above theirs and that their view is not being rightly expressed and equality is not being shown. Yet by letting these views remain, people are being targeted and somewhat attacked through the hate speech, throwing the equilibrium of our society off balance. Our society is based on the fundamentals of equality, freedom and democracy. Everyone is equal but when hate speech factors into the equation, equality becomes unbalanced as some people are not given the freedom to live their lives without being targeted, while others cannot express their views. It is a situation that requires the utmost care.

In addition, as a society that flourishes through the democracy and acceptance of others, we are obligated to ensure that everyone feels a part of the society. Peaceful campaigns are more effective in battling online hate speech. People are demonstrating that with the freedom of expression comes the responsibility of the person expresses their opinion in a manner in which is not offensive to any particular community. By educating more people on human rights protection and hate speech, encouraging tolerance and acceptance, hate speech becomes a smaller problem. Utilising the online platforms in the best way possible to promote integrity and goodness, we see that society becomes more accepting. Hate speech is fuelled by prejudice caused by ignorance. Once ignorance is removed, hate speech will cease to exist in both the virtual and real world.

## References

[1] Hate speech. (n.d.). Collins English Dictionary - Complete & Unabridged 10th Edition. Retrieved August 05, 2015, from Dictionary.com website: http://dictionary.reference.com/browse/hate speech
[2] Human Rights Act 1998, Article 14.
[3] What is Censorship?. (2007). Global Internet Liberty Campaign. Retrieved (05/08/2015) from http://gilc.org/speech/osistudy/censorship/
[4] Sherwell, P. (2014, August 19). 'British' Islamic State jihadi beheads kidnapped US journalist James Foley. The Telegraph. Retrieved (05/08/2015) from http://www.telegraph.co.uk/news/worldnews/middleeast/iraq/11044897/British-Islamic- State-jihadi-beheads-kidnapped-US-journalist-James-Foley.html
[5] Loria, K. (2014 November). Should Social Media Censor Content?. EContent. Retrieved (05/08/2015) from http://www.econtentmag.com/Articles/News/News-Feature/Should- Social-Media-Censor-Content-100214.htm
[6] Jersild v. Denmark. (2010). Columbia University in the City of New York. Retrieved (05/08/2015) from https://globalfreedomofexpression.columbia.edu/cases/jersild-v-denmark/
[7] The Campaign. (2012). No Hate Speech Movement. Retrieved (05/08/2015) from http://www.nohatespeechmovement.org/
[8] Kleinman, Z. (2013, May 28). Facebook sexism campaign attracts thousands online. BBC News. Retrieved (05/08/2015) from http://www.bbc.co.uk/news/technology-22689522
[9] Sherwell, P. (2014, August 19). 'British' Islamic State jihadi beheads kidnapped US journalist James Foley. The Telegraph. Retrieved (05/08/2015) from http://www.telegraph.co.uk/news/worldnews/middleeast/iraq/11044897/British-Islamic- State-jihadi-beheads-kidnapped-US-journalist-James-Foley.html

## About the authors

R. Khatun is a Year 10 student at Denbigh High School in Luton. In summer term 2015 she took part in The Scholars Programme, organised by The Brilliant Club. She attended a course titled Combating Online Hate Speech and Cyberbullying: What can we do? What should we do? tutored by Ana Kedveš, a PhD student at Centre for Applied Linguistics, University of Warwick.

## PhD Tutor's note

Throughout the course I was impressed by R.'s engagement with the topic and commitment and to the tasks we did in tutorials. When I advised her on the draft of this essay, I had no doubt she would produce a fluently written, well-argued piece of writing. I enjoyed reading paper as engaged with various views of the phenomenon of online hate speech and critically discussed the current practice of addressing it.





# 'ON OR ABOUT DECEMBER 1910', WROTE VIRGINIA WOOLF, 'HUMAN CHARACTER CHANGED'. USE ANY THREE TEXTS YOU HAVE ENCOUNTERED DURING THIS COURSE TO SUPPORT OR REFUTE HER CLAIM.

**J. Rowland-Chandler, supervised by U. Vashist**

The quote is extracted from Woolf's essay "Mr Bennett and Mrs Brown", where she seems to suggest that by human character changing, she means relations between people, especially those of different classes – the significant form of life. There were many events that may have encouraged one of modernism's most famous authors to make such a statement: an unprecedented UK general election (the second of the year, after the January election, which occurred when the House of Lords rejected The People's Budget) took place; cubism was gaining popularity in Europe; King Edward VII died and there was unrest amongst the Labour party, Ireland and the Suffragettes. However, I cannot agree with Virginia Woolf. Human character did not change, but modernists believed they represented said change. I will discuss my opinions through "The Garden Party" (Katherine Mansfield, 1921), "Composition as Explanation" (Gertrude Stein, 1925) and the "Cannibalist Manifesto" (Oswald De Andrade, 1928).

"The Garden Party" is a story of an epiphany of a young upper-class woman – Laura. She begs for a garden party to be cancelled when a working-class neighbour dies. The party continues however and afterwards Laura visits the deceased's widow. Mansfield's prose exhibits use of experimental syntax to convey Laura's opinions and emotions – sentence fragmentation. Whilst Laura and the workmen discuss where the marquee should be placed, Laura contemplates (as an unreliable narrator) the 'marquee being placed "[a]gainst the karakas', almost in disbelief. This suggests that Laura/the narrator's statements are incomplete, like thoughts disappearing in and out of the mind. The technique is known as 'stream of consciousness', the majority of thoughts (in one's mind) being not fully formed, so it gives the reader a direct and realistic view into Laura's mind; the intention was that one can understand viewpoint with ease and be influenced by it. Consequently, "The Garden Party" keenly focuses on Laura's mind and Laura's alone.

Mansfield's intent was that Laura would be a representation for the breaking down of class boundaries in the society of the time. She has her epiphany after seeing the dead man. In her eyes, he is 'happy...happy...'; '[h]He was wonderful, beautiful'. Therefore, she now realises that true happiness is not to be found in frivolous garden parties, but in death, where social conformity, class and poverty are stripped away, which is a key modernist value. However, this is quite an upper class view in itself, as it demonstrates that they have not experienced the terrible suffering of dying (felt by many in World War I). A change in human character is not suggested because the concept of death seems to be glossed over, a form of release rather than a cause of pain. Even with the supposed dissolving of class boundaries, Laura still does not empathise with the working class. Describing them as 'crab-like', she views them as monstrous and inhuman. They are repulsive and ugly; she only finds beauty in them in death. Therefore, relating to them on her part is impossible, as she does not understand their predicament, so the class boundaries still exist and the upper-middle class character has changed very little.

The main focus of "The Garden Party" is Laura's transition from childhood to real adulthood and the consequent changes in her perception of reality. This is in contrast with her mother's adulthood, which can be compared to a permanent, frivolous and 'safe' (Klein, 362) childhood. Laura is described as 'the artistic one' in the story, so '[t]he true subject of "The Garden Party", then, is not only the ultimate reality we perceive, but, equally the way an artistic one perceives it' (Klein,371). This suggests that Mansfield is concerned with a completely subjective view of a creative inquisitive individual rather than an average member of society (the working class). Having a purely subjective view/story, it means one cannot take the bigger picture (society) into account; class is very much a side issue in "The Garden Party". Therefore, modernism assesses whether an artistic individual's character has changed, but not all individuals in society. Linking to this, modernist ideas are purely theoretical, protected from reality, as they do not take context into account. If "The Garden Party" is utterly subjective, then it cannot take into account all events that shape individuals' lives within a society.

Stein's essay "Composition as Explanation" is, in my opinion, one of the most challenging texts in English literature, discussing the role of syntax in literature and in society. She focuses not on the small events that take place, but how they are arranged in time and how they build up an entire picture. The essay is written in a very unorthodox style, the "continuous present" (evolved from the prolonged present), which she invented herself. The syntax of the sentences is always changing and is non-chronological, with all perceptions and events seeming to occur at the same time; therefore her writing seems timeless. It is meant to serve as a representation of how people view events, as when one is viewing something it is always in their present. Stein deemed the continuous present a more accurate understanding of how people think, so modernists understood more about human character. Be that as it may, Stein's arguments can be readily articulated using non-experimental syntax, which is far easier for a reader to understand. Surely if modernists considered their unorthodox syntax to demonstrate better understanding of human character and show how people think, the reader should find then their texts more readily fathomable. Therefore, if only the select few understand the supposed change in human character, human character has not changed in its entirety, if changed at all.

Stein argues that the continuous present reflects 'natural phenomena' in society and in history. She states that ideas are reborn continuously, but not entirely reborn because people's perceptions and the things they see change over time, so the ideas do not seem to be exactly the same. Therefore, she argues that there are no new ideas, rather ideas are being re-realised. The continuous present reflects this because clauses and phrases are repeated within a sentence multiple times.

Probably the most prominent argument Stein puts forth is that the only things that are different are composition and time, hence the essay title, in political, social and arts movements. She comments that 'The only thing that is different from one time to another is what is seen and what is seen depends on how everyone is doing everything.' This means that composition is the time and vice versa. Composition is how things and events are arranged and what those things are, in terms of syntax or otherwise, so a composition is never fully formed in its entirety when a movement is in the present/modern; therefore, time is not fully formed as well. Stein considers this to be 'troubling' as it puts the case forward that nothing is different because one cannot determine what is different since 'everything is the same except for composition...' and the composition is not fully formed. Therefore, it is possible to say that the modernist movement is redundant as its rallying cry is, as Ezra Pound famously put it, to 'make it new', and since Stein says nothing is essentially new, human character has not changed.

Sometimes it seems that modernism contradicts itself when one looks at "Composition as Explanation". As mentioned before, Stein's essay focuses how the arrangement of ideas and events, not looking at them separately. The subjective view is a very important component of modernism, which concentrates on the individual. Therefore, it is as if Stein is focusing on the objective view. This makes it difficult for one to define what modernism is; some modernists look at society with an objective view and the others with a subjective view. The key values of this movement seem to differ greatly. If one cannot define what modernism is, how can one say modernists changed human character? Modernists have great variation in their views, so which direction is human character going? How is it changing, if one half of modernists contradict the other?

There are strong links between 'art and social reality' (Bassoff,77), as Stein compares syntax to the composition of life. It has been established that 'societies dream their resolution through their art' (Bassoff,77), which can be compared to "The Garden Party", where the dead man 'was given up to his dream'. This is also true to a certain extent with Stein. In terms of change in human character, 'naturally one does not know how it happened until it is well over beginning happening'. This means that it is the artist that notices and causes this change, in Stein's opinion, so they are the resolution. In a sense, Stein agrees with the previous statement made by Bruce Bassoff, as artistic ideas are ideas almost solely of the mind and are often subjective. Pinpointing the word 'dream', it suggests that artists conjure up resolutions, but they cannot be applied to 'social reality' (Bassoff, 77). For this reason, they cannot change human character.

What is different about the final text - compared to "The Garden Party" and "Composition as Explanation" - is that it was authored by a man from a developing country, rather than a developed country. The "Cannibalist Manifesto" is almost a call to arms. Centred on Brazil's struggle with imperialist Europe, its aim is to stimulate revolution and to revert to the time before the Portuguese seized political control of the South American country.

The "Cannibalist Manifesto" readily uses sentence fragmentation. The most prominent of those is 'Tupi or not tupi', a play on Shakespeare's Hamlet, the protagonist's infamous speech. The Tupi being an ancient Brazilian tribe, existing before the Portuguese, what Andrade is essentially suggesting is that the Brazilian people must return to their roots to gain strength and hold all things imperialist in disregard; to rise and grow, one must return to the soil in order to flourish as an independent society and culture. This completely disregards the modernist view to "make it new" as in fact Andrade is going back in time. Human character has not changed consequently; it has simply reverted to what it once was in the distant past. Linking to Stein's insights, in "Composition as Explanation" Andrade promotes a rebirth of ideas and values.

The peak of modernism came about due to the current issues of the time, for example the Great War – a heartless, brutal and modern form of warfare. However, since the "Cannibalist Manifesto" revolves around European rule in Brazil, with Andrade claiming that '[b]efore the Portuguese discovered Brazil, Brazil had discovered happiness', one must note that Brazil became independent in 1822, over a hundred years before this manifesto was written. Although independence does not often 'end economic colonialism and other forms of metropolitan domination' (Bary, 11), by the early 20th century, there were merely 'vestiges of colonial society' (Bary, 11). The Brazilians do not need to be rid of imperialism because it was all but gone. Andrade is simply holding grudges, his eyes looking towards the past. Nothing is made new and human character does not change.

The "Cannibalist Manifesto" is rife with contradictions. Andrade wishes to take components of Brazilian culture before colonisation and make them a part of modern culture, like the 'tupi'. However, one of his major statements is, 'down with memory as a source of custom'. If something is of the past, it is a memory, so Andrade is essentially instructing the reader to return to Latin America's pre-colonisation culture and destroy said culture at the same time. Therefore, how can one acknowledge and apply his ideals in society when they are so conflicting? How can human character and relations change?

It is worth noting that Katherine Mansfield, Gertrude Stein and Oswald De Andrade were all upper-middle class, born from wealthy families, as were most modernists. Therefore, they were a minority in early 20th century society. How can they state that human character changed when they represent the few? Much of society was terribly impoverished and most modernists were not at all, so their 'profound' ideas cannot be applied in real life because they have not truly experienced suffering; they cannot truly understand life. Katherine Mansfield has claimed that Laura in "The Garden Party" is based on herself, "The Garden Party", being 'set in the New Zealand of her youth' (Darrohn, 514), but she might be more intrinsically linked to Mrs Sheridan's 'safe unserious way of life' (Kleine 362).

Virginia Woolf made her statement in 1910, before World War I, before labour came into power and before women had the right to vote. Crucially, all of the texts mentioned beforehand were written after 1910. If all my previous arguments are dismissed, let it be acknowledged that Woolf made that statement before any of the catalysts that brought modernism to its peak occurred. If human character truly did change, it changed after the war, when Labour gained power and when women had the right to vote, not in 1910.

In conclusion, human character did not change and although modernists thought they represented said change as the avant-garde, so at the forefront of thinking and society, they did not. They thought this because of their apparent dissolving of class boundaries, their experimental syntax that mirrored human thought patterns and their supposed development of culture beyond previous romantic Western ideals. Nevertheless, they were the educated elite, a single minority in a vast society. They believed that their character changed, but society as a whole did not change with it. Through their texts, modernists seemed to forget that they were fixating on the subjective. Maybe their character did not change. Rather they allowed the reader to realise what modernist's character truly was: an obsession with the self.

'Now that is all.'

## Works Cited

Bary, Leslie. "The Tropical Modernist as Literary Cannibal: Cultural Identity in Oswald de Andrade." Chasqui: revista de literatura latinoamericana. 20.2 (November 1991): 10-19. Web. JSTOR. 1 July 2015.
Bassoff, Bruce. "Gertrude Stein's "Composition as Explanation"." Twentieth Century Literature. 24.1 Gertrude Stein Issue (Spring 1978): 76-80. Web. JSTOR. 1 July 2015.
Darrohn, Christine. ""Blown to Bits!": Katherine Mansfield's "The Garden Party" and the Great War." Modern Fiction Studies. 44.3 (Fall 1998): 513-539. Web. Project Muse. 1 July 2015.
de Andrade, Oswald. "Cannibalist Manifesto." Trans. Leslie Bary. Latin American Literary Review. 19.38 (July – December 1991): 38-47. Web. JSTOR. 6 August 2009.
Kleine, Don W. ""The Garden Party": A Portrait of the Artist." Criticism. 5.4 (Fall 1963): 360-371. Web. JSTOR. 1 July 2015.
Mansfield, Katherine. "The Garden Party" (1922). The Garden Party and Other Stories. NY: Alfred A. Knopf, 1922. Print.
Stein, Gertrude. "Composition as Explanation" (1926). Selected Writings of Gertrude Stein. Ed. Carl Van Vechten. NY: Random House, 1946. Print.
Woolf, Virginia. "Mr. Bennett and Mrs. Brown." The Hogarth Essays. London: The Hogarth Press, 1924. Print.



## About the authors

J. Rowland-Chandler is a Year 11 pupil at Hornsey School for Girls in north London, and looks forward to a career as a scientist. Dr Urvashi Vashist is an early-career researcher in twentieth-century women's writing with a PhD in English language and literature from University College London.

## PhD Tutor's note

The introduction to J.'s essay, I thought, was polished, thoughtfully phrased, concise, comprehensive; her conclusion confident and articulate, speaking of and to the texts in question with sophisticated familiarity. The body of the essay, divided up into clearly-defined segments (unusual for literary analysis), coheres persuasively through linked close reading, contextual interpretation, and continuous reference to the essay question and J.'s central argument.

What is particularly pleasing about this piece, however, is its playfulness, its agile and sprightly curiosity: J. turns over phrases, zooms out to consider form, zooms back in to focus on etymological details and syntax, and finishes off with a flourish of Steinese. This is in keeping with the lively diligence she demonstrated through the course: J. took on all the toughest questions and exercises with enthusiasm and/or determination, and made a real, continuous effort to grow, draw on new knowledge and benefit from the feedback she received. It was a pleasure to work with her.

Year 12
Key Stage 5

# WERE ROMAN WOMEN ALLOWED TO CONTROL THEIR OWN FERTILITY?

D. Welch, supervised by R. Plummer

In this essay I am going to discuss to what extent Roman women were allowed to control their own fertility to limit their family size. Within this discussion, I will be looking at the time period from the first century B.C to the second century A.D, with a specific focus on the elite classes in Roman society. I will research the various methods of fertility control women and men in the Roman era would have had available to them, the importance of fertility control, which gender held the medical knowledge and men's view on these methods. By exploring these issues, I intend to gain a more comprehensive understanding of the Roman family - a topic which seems central in uncovering the wider context of the lives the ancient Romans led. Moreover, fertility control and family planning appears to be a subject little studied within the Classical field, despite its importance in helping to accurately depict the realities of life for a Roman woman and confronting the stereotypical image of a Roman woman whose sole purpose was to provide children for her husband. Fundamentally this essay will argue that women were allowed to control their own fertility, otherwise they would not have held so much knowledge on the topic.

From the historical evidence we can gain a generalised view of Roman women. We can see that women were often considered inferior by their male counterparts, as suggested by the emphasis of societal expectations on women in various primary sources. For instance, in commemoration of his wife, one husband talked at great length about her "domestic virtues", such as her "loyalty, obedience, affability, reasonableness" and "industry in working wool."[1] He added that these traits were "merits…common with all married women" which indicates that men expected women to behave in a certain way - "obedience" in particular suggests that a level of subservience was expected in women. I am convinced that this overview of Roman women is a true representation due to the recurrence of these 'virtues' in numerous sources; it seems reasonable to then imply that if a man had control over the way a woman behaved, then he could have also had an influence on a woman's use of fertility control.

In addition, a Roman woman's fertility would likely have been important to her husband because the number of children he produced would have affected his opportunities to improve his social status or political position in Roman society. This idea appears particularly evident following the introduction of the Augustan marriage legislation which encouraged families to have at least three children, making them eligible for benefits. Men, for example, could achieve a higher political position at an earlier age with each child they had. Ultimately the fertility of a man's wife could secure his elite status, thus suggesting it would have been of great importance to them to control it.

Conversely, Roman men supposedly did not want too many children as that meant any inheritance would have had to have been split multiple times between sons, potentially resulting in them not having enough money to hold their position among the elite class. Overall, it was in men's interest to control a woman's fertility to a certain degree. If it was in a man's interest then to limit the number of children he had, then accordingly we can imply that women would have to have been allowed to control their fertility to an extent.

In Roman society both men and women likely exercised various fertility control methods to limit the number of children they had, as ancient sources provide evidence that methods were available to both genders. These methods include child exposure, infanticide, abortion and contraception. It seems that both child exposure and infanticide were less prevalent methods of limiting the size of a family, however that is not to say that they were not used by Roman families, as clearly illustrated here: "…if you give birth to a girl - I command it unwillingly; piety, forgive me - kill it."[2] This source clearly suggests infanticide was used by some Roman families, though perhaps not to primarily limit family size but instead meet society's expectations. A daughter was seen to be "more burdensome" and "denied [of] value" and so it may have been commonplace for a couple to expose a daughter and try for a son. Returning to the question, the fact that the character in Metamorphoses "command[s]" that the child be killed suggests that in some cases women were not allowed to control their fertility - in some cases it was forced upon them by their husbands.

However I find the argument in favour of women controlling their own fertility more convincing because there seems to be more evidence of women predominantly using contraceptive methods to reduce fertility - methods which women were portrayed as holding the greater knowledge of. Furthermore, I find my argument on this topic is supported by some scholars, such as Hopkins, who similarly interprets that there were viable contraceptive methods and that these were mainly used by women. Hopkins reinforces his view with demographic evidence, detailing the works which showed any mention of abortifacients and contraceptives. For example, of the twenty-two works which comprised the bulk of ancient medical writing in Rome, eleven suggested contraceptive methods whilst eighteen mentioned abortion, and a further fifteen gave methods for abortion.[3] This modern source could be potentially unreliable as it was published in 1965, meaning that new evidence may have come to light which could contradict points made in the article, but on the whole the ancient evidence used gives us a good overview of the extant ancient medical sources.

In spite of the available evidence, we cannot rely solely on it because it is not a true representation of all Roman women as all of the sources were written by and about men. Moreover, our findings are primarily representative of the upper classes due to the lower classes often being illiterate or labourers that had little need to document their use/or lack of fertility control methods. Additionally, it can be argued that if Roman women did control their own fertility then they should therefore have been the gender that held the knowledge, and it would appear that this idea is widely supported in the ancient sources. In one source, Juvenal says that "Such is the power of the arts and drugs, of that woman who procures abortions",[4] which implies that only women had the power to control their fertility through methods like abortion by using medicine. This interpretation is in favour of my argument, however it could be potentially coloured by the author's bias against women, thus making it unreliable. Juvenal was a satirical poet which would suggest that the purpose of the poem was to entertain an audience, and not to give an accurate representation of fertility control. Despite this, the fact that Juvenal hinted at women having the "drugs" that can cause abortions, and not men, provides further evidence that it was indeed women who were in control of their fertility.

Furthermore, it would appear that even men who recorded this medical knowledge were also aware that it originated from women themselves - "[…] women prevail in this [herbal] knowledge."[5] Pliny appears to imply that this knowledge was predominantly a woman's. Hippocrates similarly suggests this idea of shared herbal knowledge between women - "[…] this girl had heard the sort of thing women say to each other - that when a woman is going to conceive a child, the seed does not fall out."[6] This source supports the view that women passed knowledge orally but it was men who usually recorded it, as evident from the extant male-written sources. The ancient source from Pliny is liable to potential bias, however, in that it is from an encyclopaedic work, meaning that the subject of fertility was not the sole focus and so was perhaps glanced over. Nevertheless, the fact that Hippocrates was a doctor, and his source was from a text focused exclusively on fertility, seems to solidify the evidence for my argument. Besides these inferences from ancient sources, many modern scholars argue for similar views, in particular McLaren who also puts forward the view that the knowledge of fertility methods was a woman's although it was men who recorded it.[7]

Through analysing the available ancient sources, it would appear that it was largely women who used fertility control methods. This conclusion seems reliable in that most contraceptive methods we know were available in this era were directed mostly at women, and ranged from pessaries of "pomegranate peel"[8] to amulets containing "two worms […] tied in deer skin,"[9] and other such superstitious methods like "a woman with a child step[ing] over it [menstrual blood]"[10] to cause an abortion. There are some methods for men which primarily involved the use of ointments like "cedrus juice all over the male part."[11] Though there are methods for both genders, it is apparent that some would naturally be specific to women (such as abortion), resulting in the comparative difference in methods available to both men and women.

In regard to the effectiveness of the fertility control methods implemented, it is highly likely that many of them did not work - perhaps due to the influence of folk lore and superstition. Although some methods may have worked, the use of several methods at any one time would have made it difficult to identify any effective methods. As a consequence, many ineffective methods were continually used for generations and much of the knowledge women had was useless.

On closer examination of these sources, it is apparent that they were all written by males which leaves the reliability of the sources questionable because, as I have established previously, it was women who held this knowledge. As a result, these methods could be subjective to the "gossip"[11] of several sources, subsequently changing the knowledge which was passed between people. Overall, the sheer quantity of fertility control methods for women (regardless of the effectiveness), compared to men, serves as compelling evidence that women were allowed to control their fertility as there were so many viable options to do so.

In evaluating the available ancient sources, it would appear that the majority of men thought it was "shameful […] to defraud her husband of children"[12] by using fertility control methods, and so men discouraged the use of them. This statement suggests women were not in fact allowed to control their fertility. Some scholars, such as Frier,[13] would go as far as to conclude that there were few viable fertility control methods available to Roman women at all, which would further support the argument in favour of women's lack of control over their fertility. Frier's work, however, is solely demographic and depends heavily on comparative data from Roman Egypt which consequently undermines the reliability of the source because the data is not specific to ancient Rome, and therefore is not a true representation. Unlike Frier, I am of the opinion that there were many viable fertility control methods, as indicated by the vast majority of available ancient sources. However, I am likewise convinced that in most cases men did not agree with the use of these methods. In my view, I then find the work of scholars like Riddle[14] to be more compelling when compared to the ancient sources.

The opinions of men on fertility control can inform us on the broader scale of Roman society itself. Writers such as Musonius interpreted the Augustan marriage legislation as created to target women, suggesting Roman society thought that it was women who chiefly held the power to abort a child. Musonius wrote that "They forbade women to bring about a miscarriage and punished those who were disobedient."[15] The idea of punishment forms the impression that society criminalised women for purposefully causing a miscarriage. This level of animosity, portrayed to be the commonly held view of Roman men, suggests that women were indeed not allowed to control their own fertility, despite having the ability to do so. The introduction of this legislation might suggest that Roman society often took control of a Roman woman's fertility.

In spite of the argument that women had little control of their fertility, I am of the opinion that this was not the case for the entirety of Roman society because there appears to be much more convincing evidence that indicates otherwise. The notion that fertility control was criminalised seems to indicate that women were implementing such fertility control methods frequently, or else certain laws would not be in place. This appears to lead towards the argument that, although women continued to control their fertility, it did not mean they were allowed to.

Conversely, I am in agreement that women were allowed to control their fertility to an extent as some men thought that "[…] the fertility of some women produces so many children that they require a respite."[16] This source suggests that many women were in fact allowed to control their fertility once they had had several children. Building on the latter point, it would appear that men were aware of the extent to which a woman had control over her own fertility. This idea seems to be suggested in the way that Pliny compares women's knowledge to a bad omen by stating that their "magical and poisonous herbs bring on eclipses."[5] The comparison of women's knowledge to the supernatural suggests that they possessed a level of power that the men themselves did not have. It would seem that Roman men were suspicious of women for their control over their own fertility. It might also be inferred from the ancient sources that Roman men criticised women for their knowledge as it was said that "females have invented abortion."[17] This belief that women created such fertility control methods insinuates that they not only had the element of control but that men were fearful of it. These views are similarly expressed by King.[18]

Ultimately, through analysing available ancient sources, I am of the view that Roman women were allowed to control their own fertility although it was sometimes opposed by men. Despite the limited evidence, the fact that such contraceptive methods existed in itself implies that women were allowed to control their fertility to a certain degree. Nonetheless, it is clear that men did influence women's fertility control through methods such as child exposure and infanticide but it was women who primarily held the fertility knowledge, and therefore it was theirs to control.

## Bibliography

Frier, B. (1994) 'Natural Fertility and Family Limitation in Roman Marriage' Classical Philology 89.4:318-333
Hopkins, K. (1965) 'Contraception in the Roman Empire' Comparative Studies in Society and History 8.1:124-151
King, H. (1998) Hippocrates' Woman: Reading the Past through the Present Routledge, New York
McLaren, A. (1990) A History of Contraception: From Antiquity to the Present Day Blackwell
Riddle, J. (1991) 'Oral Contraceptives and Early-term Abortifacients during Classical Antiquity and the Middle Ages' Past and Present 132:3-32

## About the authors

D. Welch is now a Year 13 pupil at Hertswood Academy in Borehamwood. Rachel Plummer is currently halfway through her PhD in the ownership of gynaecological knowledge in the early Roman Empire at the University of Manchester.

## PhD Tutor's note

D. was a member of a high-achieving group of pupils who were incredibly engaged in their Scholars Programme course and were a joy to teach. Although a little intimidated at first by the different teaching style of university seminars, and by the intimate nature of the topic, the scholars quickly learned to analyse ancient evidence critically to develop well-considered viewpoints on what is still a relatively-understudied area of ancient history. D.'s essay was well-written and well-presented, and deals intelligently with a range of complex issues. The essay achieved a first class mark and is above the standard I usually receive from undergraduate pupils. D should be very proud of her achievement!

Year 12
Key Stage 5

# B.S. JOHNSON AND THE ART OF EXISTENTIALISM

A. Cockrell, supervised by S. Jenner

*Every existing thing is born without reason,*
*prolongs itself out of weakness, and dies by chance.*
(Jean-Paul Sartre, Nausea, 1938)

The term 'existentialism' refers broadly to a philosophy that, whilst acknowledging the irrationality of the universe, emphasises the importance of individual existence, choice and freedom. Although the belief in autonomous accountability recognises an individual's responsibility to seek value in life, existentialism is often associated with a pessimistic attitude regarding the futility of existence and a dwindling faith in humanity. Embodied in the societal despair and political turmoil that followed the First and Second World Wars, the philosophy bore its influence in prominent literary and art works of the mid to late twentieth century. As the public sought to manifest their communal uncertainty, the emergence of existential writers such as Jean-Paul Sartre, Albert Camus and Samuel Beckett was prompted, and the period of existentialism realised. Through *The Unfortunates* (1969), B.S. Johnson arguably responds to the influence of such existential thought in his attempt to assert understanding over the untimely death of his friend, Tony, thereby assimilating the affiliation between chance and purpose in the context of overwhelming grief.

Paramount to Johnson's exploration of existential thought is the motif of time, his use of form and language permitting him to experiment with how this literal, yet ultimately fabricated, measure of existence stands to bring into question his individual purpose. His perception of time as a fabricated construct, a result of human desire for pattern and coherence, is immediately apparent in the very structure of the novel. Johnson simultaneously challenges and permits the meaninglessness of time through his structural choices, offering an unbound novel that requires shuffling before reading. Creating a random sequence of chapters, whilst still imposing a 'First' and 'Last' chapter on the novel, Johnson defies the reader's expectation of a tangible structure yet ultimately acknowledges the necessity of a measured timeframe, at least in the form of a beginning and end. In the novel's opening chapter Johnson professes he has "Nearly two hours to kill" ('First', 3)[1]. Despite later correcting his choice of language, "to have lunch, rather" ('First', 3), the use of the verb 'kill' instantly establishes Johnson's conflicted relationship with time, thus alerting the reader to its significance when considering Johnson's approach to existence. In another chapter, Johnson repeats the verb 'wasting' in relation to how he chooses to spend his time. The rhetorical question "Why do I waste my time here?" is followed by his own response, "to keep my mind wasting on anything but Tony's wasting" ('This poky lane', 3). By establishing this connection between Tony's illness and his perception of time, Johnson acknowledges how his own existence has been brought into question by the deterioration of another, thus removing himself from the existential belief in individual purpose.

Johnson's use of time as a means of exemplifying the lack of purpose or explanation to human existence parallels the ideas of Friedrich Nietzsche, perhaps most notable for proclaiming the death of God. Nietzsche was arguably one of the earliest existential philosophers in that he frequently emphasised how, with the absence of any monotheistic belief, individual action was of decisive importance in order to input any meaning into life. With a continued reliance on God, Nietzsche acknowledged mankind's inability to evade the restrictions of social and moral constructs, thus denying any real form of existence. In recognising mankind's misconception of inherent meaning in existence, Johnson therefore aligns himself with the existential thought of both Nietzsche and Sartre as he moves towards accepting Tony's death as a meaningless product of chance.

Beyond Johnson's discussion of time, there are moments in which he proceeds to explore the most prevalent misconception of existentialism, evident in questioning the futility of the human condition. Incorporated through his adoption of a 'stream of consciousness' technique, Johnson repeatedly reprimands himself for acknowledging the importance of meaning, choosing to proffer the futility of him writing at all; "I don't remember, why should I, it doesn't matter, nothing does" ('This poky lane', 5). This tone of resigned hopelessness was identified by Jonathan Coe in his biography of Johnson, *Like a Fiery Elephant* (2004), noting the author's "tendency to agonise over whether he is being faithful to reality and […] the movement beyond even this nervous self-interrogation to a more generalised existential despair about the futility of human activity" (175). Whilst Johnson's tone does possess a persistent quality of despair and grief when discussing the tragic fate of his friend, *The Unfortunates* represents the author's active attempt to house his feeling of loss, thus countering Coe's suggestion of Johnson's entire resignation to continue to create. Johnson was evidently tormented by the random nature of Tony's death, and yet the novel's very existence cannot help but signify the inherent hope rooted in the author's desire to share his 'truth', committing himself to an integral form of 'human activity' despite his uncertainty of its meaning.

Johnson's approach to truth does, in itself, signify a substantial alignment to existential thought. His personal obligation to record the thoughts in the instantaneous form in which they arrived emphasises the importance of personal action. Johnson's refusal to 'tell lies' in his account of Tony's death represents not only his furious commitment to truth yet, arguably more importantly, his understanding that meaning is only able to surface though individual engagement with ones truth. Johnson's 'truth' is unlikely to be the same as Tony's, yet this is implied not to be of importance through Johnson's concentrated focus on his own, singular 'truth', his absolute voice therefore advocating the role of the individual in the creation of activity.

The question of the importance of activity within the recognition of futility is perhaps most suitably received as a response to the existential despair present in post-war art. In light of the atrocities of World War Two, many artists felt compelled to create art that rejected the traditional role of the artist to depict what they observed, rather shifting the focus to an expression of impenetrable emotion. At the forefront was artist Francis Bacon, whose distinctive portraits explored the depths of torment and trauma in his use of distortion and concentrated visceral imagery. In spite of his depiction of tortured forms constituting an outwardly bleak focus, Bacon's art highlighted the importance of physically establishing this feeling in order to manifest meaning, thus seeking to advocate the importance of creation, regardless of its content. Within the presence of such existential expressionism, the movement of 'action painting' began to surface among artists Jackson Pollock, Harold Rosenberg and Alberto Giacometti. The style saw artists abandon previous conventional painterly approaches as they sought to evade its constrictions, instead choosing to splash, dribble and smear masses of paint onto the canvas. Rosenberg articulated the essence of action painting in *The Tradition of the New* (1968), stating that "the act-painting is of the same metaphysical substance as the artist's existence" (28). The revolutionary approach of the movement was understood to be an emotionally charged outlet, a visual representation of an existential struggle, thus paralleling Johnson's abandonment of conventional literary structure in order to demonstrate his imperforated emotion, uninhibited by constructs that he perceived to constrict his 'truth'.



Arguably Johnson's most meticulous representation of existentialism comes in the form of comparison, separating the conflicting philosophies between himself and Tony. To begin with, Johnson seems to battle with the irrationality of life, unwilling to accept the chaos responsible for his friend's illness. He entertains the idea that perhaps Tony influenced his diagnosis, questioning, "did he in that moment, under that duress, decide he did not want to live, did something inside him decide, some organism, was something set in motion, irrevocably, irremediable?" ('Just as it', 2). Johnson shortly returns, however, to his more rational train of thought, deeming such a theory 'fanciful.' Johnson proceeds to assert his belief in the essence of chance by contrasting it with Tony's 'pattern of hope' stating that: "For him it was too much to believe that there was no reason, not for me, it is all chaos" (Just as it, 3). Johnson's commitment to chaos as a determining factor of life and experience is something he often declared, as seen in the introduction to *Aren't You Rather Young to be Writing your Memoirs?* (1973):

Present-day reality is markedly different from say nineteenth-century reality. Then it was possible to believe in pattern and eternity, but today our reality is the probability that chaos is the most likely explanation; while at the same time recognising that even to seek an explanation represents a denial of chaos (17).

In a separate chapter of *The Unfortunates*, Johnson clarifies his comprehension of the existential 'absurd' nature of life, proposing the idea that "perhaps there is nothing to be understood, perhaps understanding is simply not to be found, is not applicable to such a thing" ('For recuperation, after' 2). In this recognition of 'nothingness' the influence of Samuel Beckett is explicit. As revealed in *Three Dialogues* (1949), Beckett similarly explored "[t]he expression that there is nothing to express, nothing with which to express, nothing from which to express, no power to express, no desire to express, together with the obligation to express" (139). Nevertheless, Johnson shortly returns to his reluctance to accept life without tangible meaning, admitting that "it is hard, hard, not to try to understand, even for me, who accept that all is nothing, that sense does not exist" ('For recuperation, after' 2). It is here that the reader is provided with the opportunity to revel in the potential for hope, as Johnson invites a form of 'chaogenous'[2] possibility. This hint to the positivity rooted in existentialism can equally strengthen the interpretation that Johnson's use of extensive spaces in between sentences refers to an invitation to find meaning within apparent nothingness. This idea corresponds with Michel Foucault's view, in *Madness and Civilization* (1961), that "the paradox of this nothing is to manifest itself, to explode in signs, in words, in gestures" (101), similarly suggesting that nothingness represents the very possibility for existence. An example of Johnson's invitation for hope comes in the typographic separation of the two conflicting ideals of existence, questioning "Can any death be meaningful? Or meaningless?" ('Paper, yes, Chelsea', 4). Through such typographic and textual spaces of silence, Johnson has allowed meaning to be created on the basis of *individual* action, thus emphasising his existential conviction.

Despite common misconception, the notion of hope within existentialism has been profusely employed in post-war literature, art and music. French philosopher Roland Barthes perhaps most articulately professed this emphasis on individual meaning in *The Death of the Author* (1967). Delivered two years prior to *The Unfortunates*, the lecture proposed a new literary theory that saw Barthes argue the reader to be of pivotal importance to the creation of art, their individual interpretation and response to a medium of work surpassing the influence of the given author. Barthes' theory was essentially rooted in the same invitation for possibility that was soon to be explored by Johnson, aiming to return the responsibility to find and create meaning to the reader. Barthes explained the importance of this theory in writing; "To give a text an Author is to impose a limit on that text, to furnish it with a final significance, to close the writing" (147). In assigning the hope and possibility for creation to the individual, Barthes advocated humanity's singular purpose to seek meaning within apparent nothingness, thus ultimately returning to Sartre's emphasis on existentialism being rooted in a theory of positivity. In his paper addressing critics, *Existentialism is a Humanism* (1946), Sartre wrote: "what is annoying them is not so much our pessimism, but, much more likely, our optimism" (27).

Whilst it is clear to note how Johnson's exploration of existential thought was informed by such theories of Barthes and Sartre, it is equally vital to understand how the concept of chance-based possibilities of creation were arguably most readily articulated in the form of art and music. The incorporation of chance in music surfaced in the 1950s as John Cage began his composition of *4'33"*, a piece that instructed no notes to sound for the entire duration of its performance. In restricting the sound of the musician, Cage returned the potential for creation to the audience, their unique and collective response inputting meaning to the silence's representation of nothingness. This experimental form of composition was also adopted by European composers, such as Pierre Boulez and Karlheinz Stockhausen, both of whom sought to activate an element of individual choice through their compositions. Similar to Johnson's erratic structure in *The Unfortunates*, Stockhausen performed compositions that could be started from any page and read in a multitude of different ways. In what he deemed 'variable form', Stockhausen relied upon aleatory factors such as hall acoustics and audience murmurs to influence the performance, again emphasising the importance of individual accountability. Boulez arguably took this concept even further in asking the performer to arrange musical pieces from separate fragments of notation. Literary critic Umberto Eco wrote of the effect of such works in *The Role of the Reader* (1979), "they offer themselves, not as finite works of which prescribe specific repetition along given structural coordinates, but as 'open' works, which are brought to their conclusion by the performer at the same time as he experiences them on an aesthetic plane" (48).

An exceedingly similar concept of 'open work' was adopted by artist Yves Klein, who was considered to be at the forefront of the 'invisible art' movement in the mid to late 1950s. Through his experimentation with blank canvases, plinths and empty spaces, Klein sought to shift the focus from the artist's creation to the response of the viewer, allowing the individual to project their own imagination onto the art, defining it with their own response. This concept has since stood to inspire a multitude of different artists, including Andy Warhol's 1985 Invisible sculpture. With this, it becomes easier to comprehend Johnson's incomplete sentences, extensive spaces and general abandonment of any conventional structure as a response to such contextual artistic experimentation. In the way that Klein, Stockhausen and Cage experimented with conventional art forms, Johnson similarly experimented with typography and literary form in order to redefine our approach to art.

Johnson's novel as a whole is essentially defined by the unpredictability of chance, the random sequence of chapters deeming *The Unfortunates* an inherent symbol of possibility, an invitation to change and create meaning. Whilst B.S. Johnson may have denied the presumption that he was an existentialist, his inability to deny chaos, despite how intense his want to justify Tony's death, qualifies *The Unfortunates* as a novel of existential thought. Despite the novel's focus on the despair and trauma provoked by tragedy, B.S. Johnson's response to existentialism is one of relative hope, choosing to draw on the optimistic ideologies of Sartre and Barthes in his avocation of finding meaning within apparent nothingness. In understanding the contextual responses of artists and musicians it becomes harder to ignore Johnson's place in the collective group that sought to return meaning through open texts and performer engagements, deeming his 1969 novel comparable to the realm of contextual responses that were provoked by the emergence and growth of existential philosophy. B.S. Johnson's *The Unfortunates* is both a self-serving attempt to find meaning and an invitation for the reader to do the same, emphasising the importance of individual purpose whilst also acknowledging the existential self's reliance on the reader, performer and artistic community.

## Works Cited

Barthes, Roland. 1967. The Death of the Author (accessed online) (http://artsites.ucsc.edu/faculty/Gustafson/FILM%20162.W10/readings/barthes.death.pdf)
Beckett, Samuel. 1949. Three Dialogues (London: Calder, 1949)
Coe, Jonathan. 2004. Like a Fiery Elephant (Oxford: Picador, 2004)
Eco, Umberto. 1979. The Role of the Reader (Bloomington: Indiana University Press, 1979)
Foucault, Michel. 1961. Madness and Civilization (London: Routledge, 1961)
Jean-Paul Sartre. 1938. Nausea (London: New Directions, 2013)
Johnson, B.S.. 1969. The Unfortunates (London: Secker & Warburg, 1969)
Johnson, B.S.. 1973. Aren't You Rather Young to Be Writing Your Memoirs? (London: Picador, 2013)
Jordan, Julia. 2010. Chance and the Modern British Novel (London: Continuum, 2010)
Rosenberg, Harold. 1960. The Tradition Of The New (Boston: Da Capro, 1960)
Sartre, Jean-Paul. 1946. 'Existentialism is a Humanism' in Basic Writings of Sartre (London: Routledge, 2002)



## About the authors

A. is a student of Alexandra Park School and completed this essay as part of a module exploring 'Chance and the Modern Novel'. This course was led by Sebastian Jenner, a PhD candidate at Brunel University London, and author of several papers on the representation of chance in literature. As her paper wonderfully suggests, A. has an academic intrigue that spans various disciplines, as well as an ability to develop an intricate focus, and is keen to pursue this at a top university.


## PhD Tutor's note

The primary goal of this module was to allow pupils to explore interdisciplinary study and embrace their own particular fields of interest within the frame of literary study. It was an exceptional group of young researchers, all of whom did extremely well in their final assignments and contributed enormously to the module's scope. A.'s essay was exemplary of this interdisciplinary way of thinking. Her navigation of the common misconceptions of chance, existentialism, and the rigid compartmentalisations of academic disciplines was original and well considered. In doing so, her analysis demonstrated an enthusiastic and thorough engagement with the text, and explored the possibilities of its potential application.





# HOW DID THE VICHY REGIME USE PROPAGANDA TO PROMOTE THE NATIONAL REVOLUTION IN WORLD WAR II, AND, IN YOUR VIEW, HOW PERSUASIVE WAS THIS PROPAGANDA?

E. Jones, supervised by D. Lees

France declared war on Germany in September 1939, although did not witness the true brutality of the conflict until 1940, where their participation in the 'Phoney War' was replaced by an unpredictable threat. In May 1940, Germany invaded France as Hitler launched an armoured offensive, penetrating the Ardennes Forest. The German operation was strategically sound and highly effective, and the collapse of France was sudden and unexpected.[1] Despite wishes of Prime Minister Paul Reynaud, the French people voted for surrender and an armistice (Second Compiègne) was signed in June, accepting German occupation in the Northern half of their nation, including major central cities of government, like Paris.[2] Furthermore, western France was also occupied, granting the Germans access to, and control of, the entire Atlantic Coast, a key factor in their maintenance of both trade and defence. This essay will contend that Vichy's use of newsreel propaganda during World War II was more persuasive than that of literature. Both forms were used by Vichy to promote their three main principles, as well as glorifying Pétain and their regime, largely in comparison to, as they saw it, the failure of the communist and Jewish dominance of the Third Republic. Newsreels prevail in terms of persuasion due to key elements like the visual clarity of the implied message, linking with the effective use of the literal, rather than the symbolic.

Marshal Philippe Pétain was appointed replacement Chief of State and the Democratic Republic of France came to firm end, in favour of a pro-Nazi, anti-communist regime under Vichy, the new system of government. Pétain sealed the rejection of the parliamentary progress made by the Enlightenment, following the Revolution of 1789, by shaking hands with Hitler in Montoire. Under the direct and highly influential advice of Vice-President Pierre Laval, Pétain assumed total power in France, as the divided nation returned to policies of despotism[3]. Therefore, the propaganda had to sufficiently discredit the Third Republic, defining and celebrating a new order. When assessing the persuasiveness of Vichy propaganda, one must also consider their unique circumstances, understanding the extreme difficulties faced to even produce French propaganda, under the fierce and highly restrictive regulation of the Nazis, paired with France's economic crisis. As noted by Bowles, the "distinct ideological agenda" of Vichy France had to be portrayed to an essentially broken nation.[4] An additionally significant approach is a comparison of the differences between Vichy's use of printed propaganda and newsreels in order to advertise their regime, and the impact of these mediums upon the wider population. This essay will examine Vichy's use of propaganda in promoting the National Revolution, and in particular the values and ideology that Pétain and Laval intended to instill in the people. Primary emphasis will be placed on assessing how persuasive the propaganda was in not only convincing people of the benefits of the National Revolution and Nazi-cooperation, but also inducing the French population to not only follow and believe in its values. Successful and persuasive Vichy propaganda met a certain criteria, involving reaching out to both the individual and the community, whilst maintaining a vital balance between the broadcast of people's interests and relatable concepts, and Vichy's political and ideological agenda.

Vichy placed instant and resolute emphasis on the fundamental and essential values of 'Travail, Famille, Patrie' ('Work, Family, Motherland'), replacing 'Liberté, Egalité, Fraternité' of the Republic, which would be at the heart of all propaganda.[5] They were also clear in their anti-Semitic and anti-communist stance, although primarily though printed promotion, as French newsreels, as identified by Bowles, avoided "references to collaboration, anti-communism, anti-Semitism,"[6] instead focusing on the glorification and ideological motives of the regime. Printed propaganda, notably in posters, was however openly and harshly critical of Jews, communists and freemasons,[7] frequently associating these groups with political corruption and failure, often in comparison to the prospering nationalist regime of Vichy. According to Cull, Culbert and Welch,[8] "Vichy also presented Britain as war criminals, Pétain as a hero and the Germans as saviours of Europe from Bolshevism," somewhat contradictory to Bowles' claims of Vichy's 'spiritual' and generally non-aggressive use of newsreel.[9] Vichy aimed to produce "specifically French propaganda, targeted at their own population,"[10] to draw attention away from their failures in Europe. This involved near constant reaffirmation of the strength of the French Empire, which was largely used by Vichy as a symbol of the remaining successes of France.[11] Vichy's community-driven nature was highlighted perhaps most prominently by the government's approach to the economy and workplace. Under the proposals of the 'Principles of the Community' document, the French work-place was intended to be built on the foundation of undivided loyalty to one's trade of profession, as opposed to class and interest groups. These values were applied to an apparent return to a fundamentally agricultural system, largely as a method of improving living and working conditions of the population, which, according to Vichy, had vastly declined along with national unity as a result of growth in industry. This would also entail rebuilding the 'peasant identity' that France had lost.[13] Vichy utilised all forms of media and literature to serve the National Revolution, to different degrees of persuasiveness. Having considered the primary purpose of Vichy propaganda, we will now consider the ways in which the people were, or were not, persuaded to believe in and follow the key values of the National Revolution.

The most essential aspect of the messages portrayed by Vichy through propaganda were the three key values of Work, Family and Motherland. Firstly, in regards to 'Travail', they were required to promote both a new and refreshed universal working mindset, and an entirely new, or rather, old system of production with the agricultural shift. Persuading people to abandon their individualistic, and inherently capitalist attitudes would arguably have been a challenge, forcing them to embrace a return to agriculture in a time of deep economic instability and uncertainty. The "balanced and harmonious theatre of unity"[14] that the French workplace would allegedly become, was depicted through newsreel. This can be seen in the newsreel item from France-Actualités, 'La vie jeunes travailleurs français en Allemagne',[15] explicitly conveying a constructive, team-orientated working environment, with evident focus on artisan, trade related professions. One might argue this was persuasive. Perhaps most significant is the obvious happiness of the participating workers, who seem to be relishing their professional life, as if it were a holiday. A similar emotion was shown through the only women in the clip, who wave as their husbands travel off to work for France and for his family. This therefore provides a shrewd and effective indication of the 'Famille' value, with the women playing their role as mother and nurturer to the family, and the man the instrumental breadwinner. Vichy appealed to workers through newsreel, by identifying them as playing a key role, both individually and within the community in fighting the 'national emergency' and opposing 'misery', as referenced in 'Entraide d'hiver et vente de portraits du Maréchal au bénéfice du Secours national'.[16] In both clips referenced there is also an

approving presentation of the work of the Nazis in occupied France, showing them almost as helpful guides to succeeding in the workplace. This then identifies a clear motive of Vichy, to avoid Hitler's intention of mass German expansion, instead focusing on a positive Nazi influence upon a nation that was fundamentally still French. This can be considered persuasive, as it created a sense of national unity, whilst recognising that people had their part to play in the prosperity of the new system.

In relation to 'Travail', the key contrast of printed and newsreel propaganda is between visual clarity of evidence provided through the videos, and the potential for misinterpretation or uncertainty deriving from posters. One particular Vichy poster, sporting the slogan 'Je travaille en Allemagne', however, still states that one should work "Pour la Relève, pour ma famille, pour la France."[17] Although this suggests what a worker's aims should be during through their occupation, it is not evident as to how exactly this should be carried out. The image, conveying a man hard at work, is paired with the almost contradictory strapline "fais comme moi," largely unpersuasive, as one may well be unsure as to how to do so. Moreover, the poster references vast concepts, like nation; Germany and France and 'Le Relève', which, although relatable, do not necessarily effectively appeal to the individual, creating a sense of personal importance, an essential attribute of highly persuasive propaganda. Conversely, newsreel propaganda relating to work reform, specifically 'La vie jeunes travailleurs francais en Allemagne'[18] is more visually specific, more individually engaging and thus, more persuasive. This makes the message more accessible and believable, as it is seen practically applied to everyday life. In addition, the workplace intentions of Vichy appear successful, but also widely achievable for all, shown through the large number of content workers. This therefore recognises the significance of independent self-esteem, whilst relating it to a community-based system.

The notion of 'the Family' was to be the beating heart of the National Revolution, which needed to be constantly and clearly reflected in the regime's propaganda. Many laws and mores were introduced for the protection and celebration of family life, particularly motherhood.[19] There was an obvious global and political agenda through making the family the foundation upon which the National Revolution was built, as it would aid in distributing and maintaining Vichy's message that France, in spite of their dire circumstances, was still a strong an independent nation. By placing Pétain at the centre of the 'family' that was this new model of France, the country was given the opportunity to unite, embracing their universal quality of simply being French. The power of persuasion here lies with the creation of a national identity, which, although ambiguous in its specifications for acceptance into the label of being French, with the new adoption of anti-Semitic policies, may have provided a way of giving the French nation and people a sense of purpose, largely depleted by German occupation.

The newsreel 'La Fête des Mères',[20] from France-Actualités is particularly powerful in its depiction of family life under Vichy. The clip portrays M. Renaudin, Commissaire Général à la famille, speaking on Mothers' Day, focusing on the family climate, maternal care and education. Unlike the printed images of Pétain and Laval, in great glory, Renaudin's positioning behind a desk, and direct address to the audience is effective in appealing to ordinary people, and works to break down potential barriers between those making family policy and those affected by it. This notion is further exemplified when we see Pétain greeting and shaking hands with mothers, once again, normalising the regime and making it more accessible and personal to everyone. The enormous involvement of women at such celebrations and the respect they received from powerful men is significant in showing the great importance Vichy placed upon motherhood, as well as the role of men in the work place. Men and women, fathers and mothers are all present with their children in the clip, which, when paired with the presence of Pétain, could be considered highly symbolic of the community-driven culture Vichy were attempting to create. French people, and particularly women were persuaded to follow Petain's government, and believe in its values, in return receiving high reward for parenthood and maintaining a functioning, healthy family. There are however several connotations, which might not be considered persuasive, prominently the pressure placed upon women to be mothers and their restrictions from the workplace, with highly limited power and independence, confined to the home.

In the 'Mothers' Day' newsreel, an integral angle of persuasion was that of placing Pétain on a similar level of power to the families, and integrating him into the community. This allows for the image of Pétain at core, rather than the top of French 'family' to be recognised. Petain thus becomes a leader that the people can relate to, and communicate with, as well as look up to for inspiration: a balance vital to successful relations between politicians and the people. By contrast, the depiction of family life in poster propaganda is often disconnected from Pétain and Vichy, often quite literally, in regards to the proxemics of the figures featured in certain images. One poster,[21] designed to show all the underlying positives of Vichy France, but primarily glorify Pétain, depicts the Marshall, much larger than everyone else, in front of the Tricolour, bordered by some form of wreath. Directly beneath the noble Pétain, are a mother and four children, whilst the workingmen are farther to the left and right. Although this positioning could more positively signify Vichy's protection of families, as Pétain shelters them, one must question whether a woman would feel entirely content with having to raise four children on her own, restricted to the home. The struggle of motherhood was justified in the newsreel, as the rewards were explicitly specified, but in this poster they are not made clear. For these reasons, as well as the lack of obvious advantages as a result of the hard work of those featured in the bottom half of the picture, despite the clarity of message the poster's capacity to persuade is somewhat lost in the visual separation of Pétain and his people.

The final of the three main values of Vichy, 'Patrie', would perhaps prove the ultimate test of the skills of French propagandists, due to the identity crisis they were facing following German occupation. The future of France as an independent successful nation, let alone an empire was unclear,[22] and Vichy had to once again convince the French people of the benefits of being French. Great emphasis was therefore placed on the strength of the French Empire, to portraying their potential for prosperity, as well as the power of influence they still had upon several nations. It could be argued that the use of printed propaganda was more persuasive in conveying the French nationalist and imperialist message. One poster, stating 'Trois couleurs, un drapeau, un Empire'[23] is simple in its objective of showing that the Nazis have not taken away the motherland. The colonies of Algeria, Senegal and Vietnam are all represented through three people, each staring in a universal direction for the future in front of the Tricolour. The presence of Algeria is important, as it was largely populated by pieds-noirs, reflecting the remaining influence of the French identity in the world. French settlers dominated Algerian politics and the economy, and thus any visual reference to Algeria was an indication of the existing power of France.[24] Here, France and Vichy are seen to possess the ability to unite people, which is a highly persuasive factor, due to the divided condition of their homeland. Another symbol of the strength of the motherland in propaganda was Pétain himself. Newsreels allowed him to be normalised and relatable, while posters were more explicit in, although making his influence applicable to all aspects of life, showing him as superior, which is less persuasive than the appeal to the ordinary. The staple image of Pétain standing in front of the Tricolour perhaps helped to show the important sought after concept of 'Frenchness',[25] but was not successful in defining it, and in persuading the people to act a certain way to meet its ambiguous criteria.

A key point of reference for the lack of persuasiveness of printed propaganda France during World War II is the famous 'Révolution Nationale' poster,[26] perhaps one of the strongest pieces of Vichy propaganda in its clear depiction of the message and values of the regime. Whilst it may be considered effective and certainly clear in its comparison of the turmoil and corruption of the past, and coming future, the connection to the people is difficult to find, and it largely fails to convince people of the true changes. The instability of the house on the left, drenched in symbols of communism, Jews and freemasons is evident, and the mix of influences is proposed to have caused political failure. The second house, the house of Vichy is a meaningful contrast, built with strength upon the foundations of 'Travail, Famille, Patrie', but the symbolic metaphor is entirely theoretical, and fails to provide any evidence of the real changes that will be put in places to positively influence life in France. Moreover, the poster is misleading in both its title and its concept, as the 'Révolution Nationale', came from the Vichy government, leading only half of France. Also, the house that represents 'France' ignores the fact that they were a broken nation, of which most French people were aware. The poster is almost reliant on ignorance of its audience, whilst demanding a demographic that can comprehend complex metaphorical political references. This contradiction reflects its inability to persuade, as well as the failings of this supposed 'Revolution', and Vichy's misplaced faith in past systems and values. This is a clear and useful example of the ways in which poster propaganda was unable to identify and effectively use the interests of the people to its advantage, thus, lacking key attributes leading to persuasiveness.

In conclusion, various forms of printed propaganda, alongside newsreels were used by the Vichy regime to promote their principals of 'Travail, Famille, Patrie' to varying effect. Upon assessment of their ability to persuade people to believe and follow their ideological agenda, it is clear that newsreels were superior, measured by their ability to combine the message with creating individualistic and clear definitions, relatable to the masses. They visually and positively demonstrated how France could prosper under the application of these values, whilst portraying key, powerful individuals like Pétain as relatable, and capable of truly understanding the issues facing the French population. Posters, and other printed propaganda were largely unable to appeal to the individual, focusing too heavily on vast concepts and targets that were undefined, and thus, unachievable.

## About the authors

E. Jones is currently a Year 13 student who is passionate about history, society and politics. Dr David Lees is Teaching Fellow in French Studies at the University of Warwick. He holds a PhD on the subject of the cinema propaganda of the Vichy regime in France (1940-1944).

## PhD Tutor's note

This was a superb essay; well-crafted, well-argued and thoroughly well-researched. E.'s work demonstrates an academic flair and passion for the subject that goes way beyond their key-stage level and could easily be a very strong piece of undergraduate written work. The way in which this essay grapples with the primary source material (in French) while also offering a coherent and nuanced analysis of the wider theme of the Occupation of France in World War II is highly commendable.

## Bibliography

Bowles, Brett, 'Newsreels, Ideology and Public Opinion under Vichy: The Case of La France en Marche' in French Historical Studies, 2004 volume 27, number 2: 419-463

Entraide d'hiver et vente de portraits du Maréchal au bénéfice du Secours national', Actualités Mondiales 28 February 1941

Fletcher, John, University of East Anglia, Vichy Propaganda pp. 13-17

Histoire, http://rene.corti.pagesperso-orange.fr/histoire/mineures/collab/petain.html [Accessed 16th July]

La propagande pendant la seconde guerre mondiale, http://propagande-2eme-guerremondiale.e-monsite.com/pages/la-propagande-dans-le-camps-de-l-axe/la-propagande-de-vichy.html [Accessed 15 July 2015]

La vie jeunes travailleurs francais en Allemagne, France-Actualités, 16 July 1943

La Fête des Mères, Newsreel item, France-Actualités, 4 June 1943

Laureen et Laetitia, La propagande pendant la seconde guerre mondiale, http://propagande-2eme-guerremondiale.e-monsite.com/pages/la-propagande-dans-le-camps-de-l-axe/la-propagande-de-vichy.html [Accessed 15July 2015]

Lees, David, The Brilliant Club, George Spencer Academy 10 July 2015

Lees, David, The Brilliant Club, Propaganda and France in World War II, Key Stage 5/Humanities, 2015, pp. 32

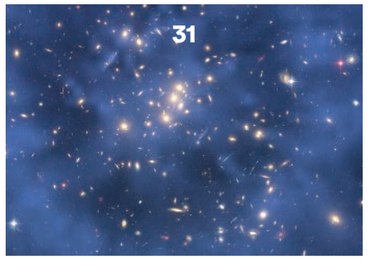
Manceron, Gilles, La Guerre Sans Nom, La Guerre d'Algérie, 15 April 2010, pp. 6

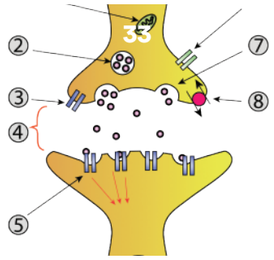
Nicholas John Cull, David Holbrook Culbert, David Welch, Propaganda and Mass Persuasion: A historical encyclopaedia, 1500 to the present, 2003, pp. 137

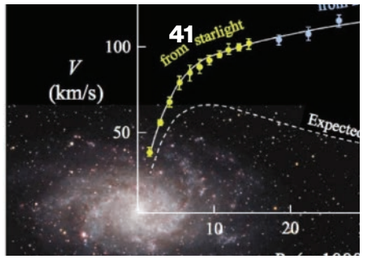
Shields, J.G, The Extreme Right in France from Pétain to Le Pen (London: Routledge, 2007) pp. 16-22

Two Houses, Revolution Nationale poster, 1942

# IN THIS ISSUE
# STEM Articles








Year 5
Key Stage 2

# WOULD THE STARS FLOAT IN THE BATH?

B. Cackett, supervised by R. Warren

B. Cackett worked on a Scholars Programme course called 'Would the stars float in the bath?' This is a standardised course for Key Stage 2 pupils which is delivered to pupils every year. B.'s answers to the initial maths problems in the course, which he submitted as part of his final assignment, were so well executed that we were concerned they might become a 'cheat sheet' for other pupils reading The Scholar! Instead, we have reproduced here B.'s longer research questions, along with an interview with the author himself about his time on the programme.

## Research Problem: If you had a large enough tank of water, would the sun float?

In order to answer this question we need to know both the density of the sun and the density of water. The law of floatation tells us that if the density of the sun is greater than that of water, then it will sink. Alternatively, if the density of the sun is less than that of water, then theoretically it would float in water if we had a large enough tank of the liquid.

We already know that the density of water is 1000kg/m$^3$

In order to calculate the density of the sun we will need to know its mass and its volume as density = $\frac{m}{v}$

The mass of the sun is 1.989 x 10$^{30}$kg

The volume of the sun can be calculated from the radius which is 6.955x10$^8$m

The volume of a sphere is $\frac{4}{3}\pi r^3$
$\frac{4}{3}$ x$\pi$x (6.955x10$^8$)m$^3$ = 1.409x10$^{27}$m$^3$ in volume

The volume of the sun is 1.409x10$^{27}$m$^3$

Therefore the density will be mass 1.989 x 10$^{30}$kg / volume 1.409x10$^{27}$m$^3$

Written in full, these are:
1,989,000,000,000,000,000,000,000,000,000/ 1,409,000,000,000,000,000,000,000,000
We can cancel out some of these 0's by dividing both numbers by 1,000,000,000,000,000,000,000,000.
1989000000000000000000000000000 /
1409000000000000000000000000

1,989,000kg/1,409m$^3$ is a much easier calculation which gives us a density of 1411kg/m$^3$ for the sun.

**The density of the sun which is approximately 1411kg/m$^3$ is greater than the density of water which is approximately 1000kg/m$^3$.**

**For this reason, we can assume that should the sun be placed in a large enough tank of water, it would not be able to float.**

## Research Problem

Pick 3 of the other stars (Sirius A, Sirius B, Rigel, Alpha Centuari, Vega, Polaris, Betelgeuse) and calculate if they would float.

<u>Sirius B</u>
This star is a white dwarf. We know that it has a mass equivalent to 0.978 solar masses.
1 solar mass is 1.989x10$^{30kg}$
Therefore 0.978 solar masses will be 0.978 x 1.989x10$^{30}$kg = 1.945242 x10$^{30}$kg

Sirius B has a radius equivalent to 0.0084 solar radii.
1 solar radii is 6.95510$^{8m}$
Therefore 0.0084 solar radii would be 0.0084 x 6.955x10$^{8m}$ = 5842200m

We can use the radius to calculate the volume.

Volume of a sphere = $\frac{4}{3}\pi r^3$

V =5842200m$^3$ x $\frac{4}{3}$ = 835252665918621049762m3 = 8.3525 x10$^{20}$m$^3$

Now I need to calculate the density. Density = mass ÷ volume
Density = 1.945242 x10$^{30}$kg ÷8.3525 x10$^{20}$m = 2328926419kg/m$^3$

**The density of the Sirius B which is approximately 2328926419kg/m$^3$ or 2.3x10$^9$ kg/m$^3$ is significantly greater than the density of water which is approximately 1000kg/m$^3$.**

**For this reason, we can assume that should Sirius B be placed in a large enough tank of water, it definitely would not be able to float.**

<u>Vega</u>

This star is a Main Sequence star. We know that it has a mass equivalent to 2.14 solar masses.

1 solar mass is 1.989x10$^{30}$kg

Therefore 2.14 solar masses will be 2.14 x 1.989x10$^{30}$kg = 4.25646x10$^{30}$kg

Vega has a radius equivalent to 2.36 solar radii.
1 solar radii is 6.95510$^8$m
Therefore 2.36 solar radii would be 2.36 x 6.955x10$^8$m = 1641380000m

We can use the radius to calculate the volume.
Volume of a sphere = $\frac{4}{3}\pi r^3$
V =1641380000m$^3$ x $\frac{4}{3}$ = 1.852320x10$^{28}$ m$^3$

Now I need to calculate the density. Density = mass ÷ volume
Density = 4.25646x10$^{30}$kg÷1.852320x10$^{28}$m$^3$= 229 kg/m$^3$

**The density of the star Vega which is approximately 229kg/m$^3$ is less than a quarter of the density of water which is approximately 1000kg/m$^3$.**

**For this reason, we can assume that should Vega be placed in a large enough tank of water, it would be buoyant and it would float.**

<u>Polaris</u>
This star is a Supergiant star. We know that it has a mass equivalent to 4.5 solar masses.

1 solar mass is 1.989x10$^{30}$kg

Therefore 4.5 solar masses will be 4.5 x 1.989x10$^{30}$kg = 8.9505x10$^{30}$kg
Polaris has a radius equivalent to 46 solar radii.

1 solar radii is 6.955x10$^8$m

Therefore 46 solar radii would be 46 x 6.955x10$^8$m = 3.1993x10$^{10}$m

We can use the radius to calculate the volume.

Volume of a sphere = $\frac{4}{3}\pi r^3$

V =3.1993x10$^{10}$m$^3$ x $\frac{4}{3}$ = 1.37168x10$^{32}$m$^3$

Now I need to calculate the density. Density = mass ÷ volume

Density = $8.9505 \times 10^{30}$kg ÷ $1.37168 \times 10^{32}m^3$= 0.06kg/$m^3$
**The density of the star Polaris which is less than 1kg/$m^3$ is significantly lower than the density of water which is approximately 1000kg/$m^3$.**

**For this reason, we can assume that should Polaris be placed in a large enough tank of water, it would be buoyant and it would definitely float.**

## What differences do you notice between supergiant stars, main sequence stars and white dwarfs?

After finding the mass, volume and then the density of each of the stars mentioned in the booklet, I sorted the densities into size order and was shocked by my results. I found that despite their huge size, supergiant stars had the smallest densities. The white dwarf, on the other hand, had a much larger density, even though it was the smallest of these stars. Main sequence stars were in the middle of the two. This proves again, that size is not proportionate to the density of the object.

Also, the differences between the categories are significant. For example, the density of Sirius B (white dwarf) is over 10 million times that of Vega (main sequence). Similarly, the density of Sirius B is over 30,000,000,000 times that of Polaris (super giant).

## What type of star is Betelgeuse? Why?

This star belongs to a group called red supergiants[1]. We know this because Betelgeuse, like other stars in this category, appears to have a red colouring due to the lower temperatures[2] compared to other stars and has a huge volume and miniscule density. There is no dispute that these stars are nearing the end of their life[2].

Betelguese is also a variable[3] star that appears to change in size. We have been given a range of mass from $1.5315 \times 10^{31}$ to $3.978 \times 10^{31}$kg. Similarly, the range of the radius is from $6.60725 \times 10^{11}$m to $8.346 \times 10^{11}$m. It has not yet been identified why this happens[2]. Some theories are that gas is being ejected from the star[2] or it appears to grow and shrink as it rotates due to its bumpy surface[2].

## How many elephants / mice / an animal of your choice would you have to fit into a 1cm³ cube to match the density of Sirius B?

The density of Sirius B is 2328926419kg/$m^3$

To convert this into $cm^3$ we would need to divide the number of kilograms by $100^3$
2328926419kg/$m^3$ ÷ 1,000,000 = 2328kg/$cm^3$
An elephant weighs from 2,268 to 6,350 kg[4]

**Therefore in order to match the density of Sirius B, we would need a mass roughly the same as a small elephant or slightly less than half of a large elephant in a small cubic centimetre space!**

A mouse weighs on average 20g [5]
The mass of Sirius B in a 1cm space is 2,328,000g
2,328,000 ÷ 20g per mouse = 116400 mice

**Therefore we would need approximately 120,000 mice in a cubic centimetre space to match the density of Sirius B.**

## In 6 billion years, the sun will start expanding and become a Red Giant. If we predict that the sun will increase in radius by 1% every 10 million years, and ignore any mass loss, how long will it be before the sun would float?

In order to float, the sun would need to have a density that is lower or equal to that of water. The density of water is approximately 1g/$cm^3$ or 1,000kg/$m^3$. Therefore, in order to float the sun would need to be approximately 1000kg/$m^3$ or less.
What radius would the sun need in order to have a density of less than 1000kg/$m^3$?
Mass ÷ density = volume
We know that the mass of the sun is approximately $1.989 \times 10^{30}$ kg.

We know that the density would need to be approximately 1000kg/$m^3$ or less.
$1.989 \times 10^{30}$ kg ÷ approximately 1000kg/m =volume of approximately $1.989 \times 10^{27}$ $m^3$

Now we can use the volume to calculate the radius that the sun would have at approximately the point when it would start to float.
The volume of a sphere is $\frac{4}{3}\pi r^3$
$1.989 \times 10^{27}$ $m^3 = \frac{4}{3} \times \pi \times r^3$
$r^3$ = 474,838,772,714,669,734,266,464,708

The cube root of this number gives us a new buoyant radius of 780,157,086m
Radius now = 695,500,000m
Radius when the sun should be able to float =780,157,086m
695,500,000m x 1.01 (increased by 1%) = 702,455,000m after 10 million years
702,455,000m x 1.01 (increased by 1%) = 709,479,550m after 20 million years
709,479,550m x 1.01 (increased by 1%) = 716,574,346m after 30 million years
716,574,346m x 1.01 (increased by 1%) = 723,740,088m after 40 million years
723,740,088m x 1.01 (increased by 1%) = 730,977,489m after 50 million years
730,977,489m x 1.01 (increased by 1%) = 738,287,264m after 60 million years
738,287,264m x 1.01 (increased by 1%) = 745,670,137m after 70 million years
745,670,137m x 1.01 (increased by 1%) = 753,126,838m after 80 million years
753,126,838m x 1.01 (increased by 1%) = 760,658,107m after 90 million years
760,658,107m x 1.01 (increased by 1%) = 768,264,688m after 100 million years
768,264,688m x 1.01 (increased by 1%) = 775,947,335m after 110 million years
775,947,335m x 1.01 (increased by 1%) = 783,706,808m after 120 million years

Radius when the sun should be able to float =780,157,086

For this reason, we can estimate that from the time when the sun starts to expand in approximately 6 billion years, it would take a further 110 to 120 million years of expansion before it would be able to float.

## Bibliography

[1] Tom Reding, Red Supergiant, en.m.wikipedia.org [16 Dec 2014]
[2] Betelgeuse, www.gb.nrao.edu [16 Dec 2014]
[3] Betegeuse, http://en.wikipedia.org/wiki/Betelgeuse [16 Dec 2014]
[4] African Elephant, animals.nationalgeographic.com [13 Dec 2014]
[5] Compilation of Mouse Facts, mousegenotype.com/MouseFacts [13 Dec 2014]

## An interview with the author

B. Cackett of Esher Church of England High School in Surrey shares final assignment tips and talks about his experience on The Scholars Programme.

**How did you plan your final assignment?**
I just focussed on each step it took to get to the answer, then explained the method in detail, using each step as a paragraph.

**What was most difficult about the final assignment?**
Probably having to include the calculations into the paragraph, especially as I tried to put them in words. It seemed quite complicated at first, but got a bit easier as I got used to it throughout the assignment. Also, I found the amount of time we had to complete the assignment challenging, but I managed it!

**What did you find most enjoyable about the final assignment? Is this something that you knew you liked before?**
I definitely liked doing the research and learning new things the most. I knew I liked maths and science before, but because the tasks were complex, I learned much more, which made it even more enjoyable and rewarding!

**How did you feel when you finished your assignment?**
Well, I mainly felt proud that I had done my best and that it had resulted in a better-then-I-expected essay, but also a little bit sad that such an amazing experience was almost over. I definitely felt motivated and more confident to go on to further education. The university experience was inspirational.



Year 9
Key Stage 3

# EXTRACELLULAR VESICLES AND SUBMICRON PARTICLE ANALYSIS

W. Toczydowski, supervised by J. Welsh

## Introduction

Extracellular vesicles are extremely quickly becoming a topic of significant interest to scientists, as though they have been known to exist for around fifty years, it is just recently that technology has advanced enough to be able to study them, particularly methods of studying extremely small objects, such as flow cytometry. These vesicles are roughly spherical lipid structures that break off from cell membranes, currently their primarily role in the body is still debated, however it has been shown that increased or decreased presence of these in certain parts of the body can be linked to diseases such as breast cancer, gastric cancer, lung cancer and melanoma. (2) For these reasons scientists believe that extracellular vesicles could become a very useful biomarker.

## Biomarkers

In terms of medicine a biomarker is any kind of measurable or observable indicator of the severity or presence of any kind of disease or any other physiological condition. Examples of naturally occurring biomarkers include (1.1):

- Red blood cell count or any other cell count
- Bacteria in urine
- Beats per minute of the heart

However, biomarkers can also be introduced into the body.For example, rubidium chloride is used in isotopic labelling to evaluate perfusion of heart muscle (1.1). Vesicles themselves are a natural biomarker, however they are far too small to be observed with our current technology, and thus we have to use fluorophores to mark them.

## The Plasma Membrane

All extracellular vesicles are pieces of the plasma membrane, and thus it is important to understand the plasma membrane before we understand the vesicles themselves. The plasma membrane is the outer layer of the cell; it is composed of phospholipids, which are molecules with hydrophilic heads and hydrophobic tails, known as amphipathic molecules. Phosphatidylserine is found on the outside of the membrane and phosphatidylcholine is found on the inside. Scramblases, flippases and floppases are proteins that ensure the phospholipids remain the right way around. The primary purposes of the plasma membrane are being a barrier to protect the cell, providing a semi-permeable membrane and facilitating bulk and active transport, all of these are essential to maintain the health of the cell. The plasma membrane is covered in various proteins, which vary based on the type of the cell and where it was found on the body. All extracellular vesicles break of from this membrane, and take some of these proteins with them, which can let us identify where on the body they came from.

## Extracellular Vesicles

As previously mentioned, these vesicles are spherical lipid structures that break off from the plasma membrane. Their purpose is currently unknown; however this behaviour seems to be conserved in nature, which leads scientists to think that they have some kind of significant evolutionary purpose, especially as they are a biomarker for various types of cancer. There are two main types of cellular vesicles, exosomes, and microvesicle. Exosomes are generally created inside the cell, (though they are often released into extracellular space); they are extremely small (20 – 100 nm), and are derived from multivesicular structures. They carry genetic information as RNA and are generally seen as positive, and their absence can sometimes be seen as a bad thing. The other and perhaps more interesting type of vesicle are microvesicles, which are far larger, around 1000 -100 nm, which is at least six times smaller than the smallest of cells. Similarly to exosomes they carry genetic information as RNA, unlike exosomes though, they are formed from the plasma membrane and thus carry various proteins of their surface. Their presence is mostly seen as negative, as though they themselves aren't known to be harmful, they often start appearing in larger quantities when a cancer or other disease is developed.

## Resolution and Conventional Microscopy

The magnification of a conventional microscope depends solely on the strength of the lenses, which is multiplicative, so a 10x lens couples with a 50x lens would yield a total magnification of 500x. However, the higher the magnification the closer the objectives must be to the specimen, as higher magnification bends light more severely, which can result in a distorted or unclear image. The distance between the objective and the specimen is known as the focal length. The resolution of a microscope can be defined as the shortest distance between two points where the microscope can identify them as two separate points. The resolution is determined by the frequency of light waves illuminating the specimen and the quality of the lens. Due to diffraction conventional microscopy is limited to a resolution of around two microns. (3) As you can see, this presents a problem in that even the smallest of extracellular vesicles are half the size that the strongest possible microscopes can see, and thus we have to turn to other methods for studying, primarily flow cytometry, which I will talk about later.

## Immunophenotyping

Since flow cytometry utilises fluorescent markers for various proteins, it is essential to understand antigens, antibodies and immunophenotyping. Antigens are most generally defined as any kinds of foreign substance that causes the immune system to respond, in most cases by releasing antibodies. There are specific regions on all antigens where the antibody can bind to the antigen to destroy or neutralize it in some way; this region is known as the epitope. Antibodies are found in blood, as well as various other tissues, and are released by immune cells. These antibodies are known as immunoglobulins. Since the antibodies are extremely specific for epitopes and can be easily labelled with fluorescent markers, they can be exploited to investigate proteins on cell surfaces, and now on the surfaces of microvesicles. Over the years, scientists have catalogued a significant portion of these proteins, we call them Clusters of Differentiation, or CD markers for short, and these can be used to discriminate between different types of cells. A few examples are:

- Platelets express CD41a, CD42b and CD37.
- Endothelial cells express CD 105 and CD45.
- Neutrophils express CD66b, CD45 and CD16.

## Fluorescence

In order to accurately observe and identify proteins of cell and vesicle surfaces we must label them with fluorescent markers, as the proteins themselves are far too small to study with the current technology. Because of this, we must first have an understanding of fluorescence and the refractive index before we delve deeper into flow cytometry.

Fluorescent particles/dyes are known as fluorophores, and the process of emitting light is known of fluorescing. For a fluorophore to fluoresce it must first attain a higher energy state, which it does by the absorption of light. This state is known as excitation, and it decays extremely quickly. The decay of this state and subsequent loss of energy is what causes the particle to emit light. The high-energy excited state is affected by two factors, amount of light absorbed and the wavelength of the light, as different fluorophores are more excited by different wavelengths of light. After this excited state is finished, all excess energy is emitted as light, which can be easily detected by detectors in flow cytometers.

To summarise, there are three stages in the fluorescent process:
- Excitation where light is absorbed and excites the fluorophore.
- Excited lifetime
- Emission, where all excess energy is released as light.

Fluorophores cannot repeat this process indefinitely, since during the fluorescent process they are structurally unstable and thus they degrade over repeating the process multiple times. t is important to use the correct wavelengths of light, as each type of fluorophore has an excitation range, which is the range of wavelengths that excite it to the maximum level. All fluorophores also have an emission range, which is the range of wavelengths that the fluorophore emits.

It is also important to select the right fluorophore, it must have an excitation range matching that of the laser you're using in your flow cytometer, but aside from that the most important thing for a fluorophore is of course brightness of the light that is emits, since if the fluorophore is brighter it can be much more easily detected. The equation to calculate the brightness of a fluorophore is: Extinction Coefficient x Quantum Yield. The extinction coefficient is a measure of how good the fluorophore is at absorbing light, while the quantum yield is equal to the no. photons emitted divided by the no. photons absorbed. Historically, the most popular fluorophores have been fluorescein, rhodamine, coumarin and cyanine (1.2). However newer fluorophores such as R-PE and Brilliant Violet 421 are becoming more popular as they are much brighter.

## Beads and the Refractive Index

In flow cytometry, various kinds of beads can be used to help study whatever you are looking at, however they can often refract the light and thus it is essential to understand the refractive index before studying flow cytometry.

The refractive index is a measure of how much rays of light are bent (refracted) when going from one medium to another. This is generally expressed as n=c/v' where n is the refractive index, c is the speed of light and v' is the phase velocity of light within the medium (1.3). The effect of the refractive index can be most easily seen by the naked eye with white light entering a glass prism, the white light will separate into lights of the colours of the rainbow, we call this dispersion, and it occurs because white light is made up of these other lights and because lights of shorter wavelengths (those on the blue/violet side of the colour spectrum) are far more affected by refraction than longer wavelengths (those on the red/yellow side of the colour spectrum). Therefore upon exiting the prism red light would be far more refracted than blue light. If a light is shone on particles, those with a higher refractive index will refract light more than those with a lower one.

Because in some techniques it is impossible to directly measure the size of the particles, alternative ways have been looked into, the most prominent of which is Mie Theory, which is a series of extremely complex equations that can somewhat accurately predict the amount of light scattered from a particle. This is useful in flow cytometry as it relies on detecting and gathering information based on scattered light.

The beads that are currently most commonly used to study microvesicles are polystyrene, which has a refractive index of 1.605, and silica, which has a refractive index of 1.456 (4), compared to the refractive index of the microvesicles themselves being around 1.36. Due to the silica being closer in refractive index to the vesicles it is often seen as more accurate, as if the polystyrene beads are even slightly too big they can pick up things such as cell debris, which can be mistaken for microvesicles, causing inaccuracy, in fact it is speculated that some of our research and data on microvesicles may actually be incorrect due to usage of polystyrene beads that may have picked up things bigger than microvesicles.

Currently, an effective bead setup could be utilising two different types of silica bead, one 400 nm in size to account for the smaller microvesicles and one around 700 nm to allow study of the large vesicles.

## Flow Cytometry

Flow cytometry is currently the premier method for studying most cells 1 - 15 microns in size, however, in specialized systems it can be applied to larger or smaller specimens. It can be most basically described as where a laser is shone upon a specimen (which has a fluorophore attached) and then detectors study the light scatter from the fluorophore and specimen. Generally thousands of cells/vesicles are passed through the laser every second, one at a time flow cytometry can be used in a wide range of applications; including immunophenotyping, cell counting and ploidy analysis. (5) The data gathered from a cytometer is then passed through extremely complex software and recorded as graphs, particularly histograms and scatter plots. The four main things that a flow cytometer is able to identify about a cell are size, complexity, health and phenotype.

The primary systems of a flow cytometer are:

1. The fluidics system - this presents samples to the interrogation point (where the laser is shone upon the cell/vesicle), and also takes away any waste. It is important for the fluidic system to deliver one particle at a time to the laser, so a technique called hydrodynamic focusing s used, where the sample are injected into a flowing stream of fluid, often saline solution. Because of this the sample stream becomes very compressed, to roughly one cell in diameter.
2. The lasers - which are the light source for scatter and fluorescence, currently most of these lasers are around 10 microns.
3. The optics system - which gathers and directs the light from the interrogation point, particularly fluorescence, which based on the fluorophore, is separated using a series of optical filters(bandpass, longpass and shortpass filters are the most common) and mirrors to direct the fluorescent light into the correct detector.
4. The detectors - whichdetect the light and fluorescence and pass the data on to a computer that interprets it. The first of the detectors is the forward scatter detector, which is located direct behind the particle that is being studied. A bar known as the obscuration bar prevents any of the extremely strong laser light from hitting the forward scatter detector. This detector allows us to estimate the size of the particle that we are studying. The scattered light received by the detector is transferred into a voltage pulse, which is stronger the larger the particle being studied is. We can plot a histogram of this data, where the smaller particles appear on the left and the large particles appear on the right, this histogram will be a graphical representation of the size of the particles within the population what is being studied (5).

The other main type of non-fluorescence detector is the side scatter detector. Side scatter is caused by granularity and structural complexity inside the particle we are studying. Side scatter is generally sent through a lens system into the side scatter detector, which on most flow cytometers is located 90 degrees from the laser's path. The data from this detector can also be plotted on histograms.

Complex computer software analyses this data and produces these graphs. With data from both the forward and side scatter detectors it becomes possible to create a scatter plot of the cell population, which can be far more detailed than a histogram. On a scatter plot you can see the amount of each type of particle within a population, for example, lymphocyte, monocytes and neutrophils can be easily distinguished between. This multiparametric analysis can be considered the real power of flow cytometry (5).

## Problems with Flow Cytometry

Flow cytometry is of course an incredible technology; however it does have its flaws. Since flow cytometers are generally built to analyse cells (and even more specifically cell 1-15 microns in size), they are not generally equipped to effectively analyse microvesicles, which are 10 -100 times smaller than cells. Because of this several issues arise, the most notable being swarm detection, which occurs when more than one particle is inside the interrogation point. This makes the results inaccurate, as more than one particle is scattering and refracting the laser light, as well as there being fluorophores from more than one particle, which can cause misidentification of cells.

In conclusion, microvesicles have incredible potential to be used as a biomarker, however current technology is very limited and we cannot yet study them completely accurately. In the future they will likely be used to detect the presence of cancer far earlier than any methods currently available, however that time is not here yet, and likely not for quite a while, as the technology to study microvesicles is exceedingly expensive.



## Bibliography/References

(1): Wikipedia
(1.1): https://en.wikipedia.org/wiki/Biomarker_(medicine)
(1.2) https://en.wikipedia.org/wiki/Fluorophore
(1.3) https://en.wikipedia.org/wiki/Refractive_index
(2): Circulating Microparticles: Square the Circle - Open Access Review
(3): http://www.microscopemaster.com/how-does-a-microscope-work.html
(4): http://refractiveindex.info/?shelf=main&book=SiO2&page=Malitson
(5): https://www.youtube.com/watch?v=sfWWxFBltpQ
Anything that is unsourced has been sourced from the provided booklet or I would consider it to be common knowledge.

## About the authors

W. Toczydlowski is a Year 9 pupil at Bishop Fox's School in Taunton. Joshua Welsh is a Ph.D. student at the University of Southampton.

## PhD Tutor's note

W. has been very quick to pick up new concepts throughout the course and his essay reflects this. Many of the concepts involved in this essay are taught at a key stage above level 3 or even higher.

Year 9
Key Stage 3

# PREDICTING RISKY BEHAVIOURS AMONG THE ADOLESCENT CYSTIC FIBROSIS POPULATION

**H. Hussain, supervised by R. Keyte**

Cystic Fibrosis (CF) is a genetic disease caused by a faulty recessive gene located on chromosome seven. The faulty gene is called the Cystic Fibrosis Transmembrane Conductance Regulator (CFTR) gene. An individual must have two copies of the faulty gene in order to have CF; if an individual has one copy of the faulty CFTR gene they are a carrier, meaning the individual does not have any of the symptoms related to CF, but is at risk of passing CF onto their offspring. There are currently 2.5 million carriers of CF (NHS, 2014), with CF being the most common genetic disease in the UK. Statistics indicate that there are currently 6000 individuals diagnosed with CF, 2000 of which are adults. CF is a life limiting disease, which is currently incurable. However due to recent medical advances the life expectancy within the CF population is increasing. In 1938, 70% of babies diagnosed with CF died within their first year of life, in 1980 the life expectancy for CF was 14 years, in 2003 this increased to 18 years and it is now predicted that individuals with CF who were born after 1990 will survive into their 40s.

A healthy CFTR gene works by creating a protein that removes salt and water from cells by controlling the transport of chloride and sodium. However, the faulty CFTR gene allows too much salt and water into cells, causing an increase in the production of mucus within cells, with this mucus becoming thick and sticky. One area where this thick, sticky mucus builds up is within the lungs and cilium causing them to become blocked, resulting in patients experiencing breathing difficulties. As a consequence of this increase in mucus within the lungs it can commonly cause the individual to experience recurrent infections, inflammation of the respiratory tract, lung damage and in severe cases fatal respiratory failure (Khan Academy, 2015). In an aim to prevent recurrent infections, CF patients have to adhere to long term antibiotics. In addition patients have to typically perform physiotherapy two to three times a day to reduce the levels of mucus within the lungs, reducing the likelihood of microorganisms staying within the lungs, and making it easier for the patient to breathe. Furthermore, bronchodilators, pulmozyme, hypertonic saline and mannitol dry powder are used to clear mucus and expand the airways. In severe cases when a patients' lungs are severely damaged, the patient will be put onto the transplant list in order to receive a lung transplant (NHS, 2014).

In addition to the lungs, the pancreas is the other main organ affected by CF. The excess mucus blocks the pancreatic ducts; consequently food-digesting enzymes cannot be produced. These complications cause malnutrition within patients as nutrients cannot be absorbed. Commonly, adults with CF have difficulty gaining and maintaining weight, and children with CF are often severely underweight and experience a delay in puberty (NHS, 2014). Therefore CF patients are advised to eat as much food as possible to compensate for the nutrients lost. CF patients have to take pancreatic enzyme tablets every time they eat. These tablets contain the enzymes needed to digest food so that nutrients can be absorbed. The pancreatic enzyme tablets therefore help CF patients to gain weight.

As CF is a lifelong disease with lots of medical complications, it can be an emotional burden for patients. Research indicates that depression is common within CF patients, due to patients knowing that they can become ill easily and have a shorter life expectancy in comparison to the general population. Therefore CF patients may be more likely to engage in risky behaviours, especially during adolescence. These risky behaviours could include smoking, excessive alcohol consumption, drug abuse, risky sexual behaviour and excessive dieting. In terms of smoking, research indicates that 45% of males and 47% of females with CF have tried smoking, with the median age which CF patients started smoking being 15.6 years, this is higher than the national average of 11 (Verma, Clough, McKenna, Dodd & Webb, 2001). In addition the research indicates that 6% of CF patients continue to smoke regularly (McEwan, Hodson & Simmonds, 2012), with these patients smoking an average of 6 cigarettes each day (range: 1-20 cigarettes). The decline in individuals who continue to smoke could be low for various reasons. One reason could be because patients tried smoking and did not like it, potentially due to the smell and / or taste. Another reason could be that patients found out about how smoking could adversely affect their health: it could increase the rate at which respiratory symptoms appear. Literature indicates that smoking within CF patients causes the lung function to deteriorate by 4% for every ten cigarettes smoked (McEwan et al, 2012). This decline in lung function will most likely result in patients having to receive intravenous antibiotics. Antibiotics fight against bacteria in different ways, for instance bactericidal kill bacteria by destroying the cell wall, whereas bacteriostatic stop bacteria from reproducing (MNT, 2015).

There are a variety of potential reasons why adolescents engage in risky behaviours. In terms of smoking an adolescent may initiate in this behaviour as smoking is easy to do: an individual can legally go to a shop and buy cigarettes providing they are 18 years old. In addition an adolescent will most likely see others smoking on a daily basis; therefore it is a normalised behaviour within the general population. The normalisation of smoking may also be reinforced by celebrities. Most teenagers will see celebrities as role models who they try to be like. However, celebrities are often pictured engaging in risky behaviours, this could motivate an adolescent to also engage in that behaviour. However, smoking may not be just a normalised behaviour within the general population; parents can also influence their children to smoke if they smoke. Parental smoking may cause the child to believe that smoking is not a bad behaviour, even if the parents tell their children not to smoke. Teenagers may go against their parent's advice as a way of telling their parents that they do not need them, and they can do what they want. In addition smoking may also be normalised within an adolescent's social group by the majority of their friends smoking, this could lead to peer pressure. If an individuals' friends are smoking they may be encouraged to join in; or they could feel excluded if they did not participate in this behaviour. The normalisation of smoking may result in the adolescent not realising that smoking is bad for their health.

Individuals with CF may smoke for the same reasons as adolescents within the general population. In particular if smoking is normalised within a patients social group or within the general population it may encourage a patient to conform to this behaviour, as the patient may already feel excluded as they believe they are different to others due to their diagnosis; they may believe that smoking will help them to 'fit in', providing them with a 'normal' identity (McEwan et al). Therefore, a CF patient may be more likely to conform to peer pressure in order to prevent further isolation. In addition a CF patient may smoke due to them not understanding the effects that this risky behaviour could have upon their health, due to doctors potentially not discussing the impacts of this behaviour with their patients before or during adolescence. However, informing adolescents about the long term effects of a risky behaviour does not usually work, because adolescents do not have the cognitive capacity to understand how their current behaviours will have future implications. A CF patient may potentially believe that because they know that they are going to have a shorter life than others, the engagement in a risky behaviour which may reduce their life expectancy further will not make much of a difference. A further reason for engaging in the risky behaviour could be because patients believe that they can deal with the adverse health effects when they occur. Furthermore, an adolescent with CF may want to have fun and do what they want to do as a consequence of their lack of freedom during childhood (due to adherence etc). Therefore, the engagement in risky behaviours for a CF patient may relieve the patient from the burden of CF. Consequently, doctors should tell CF patients about the short term problems associated with smoking (e.g. bad breath), because these implications will make patients less socially appealing (Withers, 2012), so patients are more likely to listen to this information.

Another potential reason why some CF patients smoke comes from the identity theory. CF may be seen as an extra identity by those who suffer from the condition, because patients may believe that they are different due to the complications of their condition. Therefore CF may be viewed as an unwanted part of their lives and a way of classing them. An illness identity is a set of thoughts that a patient has about their condition. These thoughts include how CF will affect them now and in the future. Patients may consequently retaliate against their illness, helping patients to forget about their problems. Withers (2012) said that patients may retaliate against their illness identity to minimise any differences that there may be between themselves and their peers, by engaging in behaviours which appear to be 'normal' (e.g. smoking). CF patients commonly do not tell others about their condition because they do not want them to know about their illness identity. Potential reasons for this could be because patients are embarrassed (Burker, Kazukauska, Williams, 2012), and they potentially do not like any negative connotations associated with CF. Friendship groups may have a main role in this, for instance patients may feel embarrassed because they see others as 'normal' and desire to be like them. Therefore patients not taking their tablets will prevent any questions from friends, and their friends will not know about their condition. Research by Orenstein (2004) found that oxygen dependant patients are more likely to have social anxiety because they do not like the questions asked by others, the looks that they get from others, which causes them to be self conscious, as they believe they are different to others. This could cause patients to retaliate against their illness to find a "normal" identity, as they do not want CF to be part of them and retaliating against their illness will help them find an identity which they want to be part of them. Retaliating against their illness identity can mean that a patient has not accepted CF as part of their identity; therefore they are potentially in denial. This could mean that the individual does not think about the long term implications of CF, which will block out negative thoughts and prevent anxiety. So if a patient has not accepted their condition, they cannot be expected to not engage in risky behaviours, because they do not believe that these behaviours will be a problem to their health. This may mean a patient is being unrealistically optimistic, which is when a patient underestimates their condition, therefore they believe that they can engage in risky behaviours; this is a maladaptive coping method.

Research needs to be conducted so health care professionals can fully understand why some CF patients engage in risky behaviours. The engagement in risky behaviours within the CF population is a growing problem which younger generations are beginning to face due to the recent increase in life expectancy within this population. This research would lead to the development of an intervention to help those who are engaging in these behaviours, and also to stop future generations (potentially by empathising with patients and helping them find alternative methods to overcome the psychological implications associated with CF). A suitable methodology within psychology to investigate why individuals engage in risky behaviours is focus groups. Focus groups allow people to express their beliefs in a more relaxed environment, rather than alone with a researcher. In addition focus groups enable data saturation to occur. However; focus groups cannot be conducted among CF patients due to the risk of cross contamination. This is because of the different strands of bacteria found within the lungs of CF patients. These bacteria can spread very easily amongst CF patients, causing harm. Therefore an alternative methodology which could be used within the CF population could involve setting a focus group up through social media (e.g. Skype, FaceTime). This would enable a CF patient to see and talk to other people who also have CF, and discuss risky behaviours as a group. However, it is not the same as meeting another patient face to face and talking to them in the same room, consequently patients may still have a sense of isolation as they know that they have to be away from others who are going through the exact same thing as they are.

Another potential methodology could be getting patients to fill out questionnaires which psychologists analyse. This is a quick and easy method, however patients may find it awkward answering questions about a topic as sensitive as risky behaviours, so they may not tell the truth. A preferred methodology would be using semi-structured interviews which are one to one interviews, where the psychologists will ask the patient questions about risky behaviours. Semi-structured interviews provide the researcher with information through a patient's perspective; however they may be more intimidating than a focus group or questionnaire as the patient has to answer the questions on their own, therefore patients may feel that they should not say something (e.g. disclose that they have smoked). Alternatively focus groups could be conducted with people who have other genetic disorders. This would allow patients to meet other people who will probably have had similar experiences to them, but with a different cause. However this methodology would take longer to gather information specific to the CF population because there would only be one person present with CF at a time.

A useful tool not just for research could be for doctors to respond to questions off patients online, so patients can have their questions answered and other patients can also read the advice. This would be useful as twitter conversations indicate that some CF patients do not know what they can and cannot do, as they do not know the health effects certain behaviours can have upon them. For instance an individual asked: "Can you smoke and drink alcohol when you have got CF?" This indicates that patients are waiting for a response from other CF patients to see their opinions. To overcome this issues doctors should inform their patients about risky behaviours before adolescence, so patients become more aware of the consequences and hopefully less likely to engage in these behaviours.

In conclusion, it may be believed that the adolescent CF population may engage in risky behaviours due to the lack of awareness of how these behaviours will affect them. In addition they may engage in these behaviours because they want to minimise any differences that they have with their peers. Therefore educating patients and helping them find alternatives to risky behaviours will help prevent this problem.

## Reference List

Burker, E.J., Kazukauskas, K.A., & Williams, L.W. (2012). Maximising quality of life in adults with cystic fibrosis: the critical role certified rehabilitation counsellors. The Journal of Rehabilitation, 78, 20-26.
Khan Academy. (2015). What is cystic fibrosis? Respiratory System Diseases. Retrieved 25/07/2015 from: https://www.khanacademy.org/science/health-and-medicine/respiratory-system-diseases/cystic-fibrosis/v/what-is-cystic-fibrosis
McEwen, F.A., Hodson, M.E., & Simmonds, N.J. (2012). The prevalence of "risky behaviour" in adults with cystic fibrosis. Journal of Cystic Fibrosis, 11, 56-58.
MNT. (2015). How do antibiotics work? Infectious Diseases / Bacteria / Viruses. Retrieved 04/07/2015 from: http://www.medicalnewstoday.com/articles/10278.php
NHS. (2014). Cystic fibrosis introduction. NHS Choices; Your Health, your choice. Retrieved 25/07/2015 from: http://www.nhs.uk/conditions/cystic-fibrosis/pages/introduction.aspx
Orenstein, D.M. (2004). Cystic fibrosis: a guide for patient and family (3rd ed.).Philadelphia: Lippincott Williams & Williams.
Verma, A., Clough, D., McKenna, D., Dodd, M., & Webb, A.K. (2001). Smoking and cystic fibrosis. Journal of the Royal Society of Medicine, 94, 29-34.
Withers, A.L. (2012). Management issues for adolescents with cystic fibrosis. Pulmonary Medicine, 1, 1-10.

## About the authors

H. was a Year 9 pupil at Barr Beacon Secondary School when she wrote this essay. During H.'s time at The Brilliant Club she has demonstrated the evolution of academic skills which will be required in order to study at University. Rebecca Keyte is a PhD student within the Psychology department at Birmingham City University. Rebecca's doctoral research is investigating the role of health beliefs in predicting and explaining risky health behaviours within the Cystic Fibrosis population.

## PhD Tutor's note

H.'s essay was outstanding, including all the relevant material, whilst also incorporating ideas beyond the content of the course. During H's time with the Brilliant Club she has shown enthusiasm towards the topic of Cystic Fibrosis, and has embraced any challenges that the students were set. H.'s academic ability was perfectly demonstrated within this essay. She has shown a clear understanding of the potential psychological implications associated with Cystic Fibrosis, and provided suggestions on how to overcome these implications. All suggestions which H. provided for interventions were supported with a clear rationale. I am sure that H.'s conscientious nature, work ethic and academic ability will enable her to succeed at any University she chooses to study at in the future. It was a pleasure for me to work with Barr Beacon Secondary School during my Summer Placement with The Brilliant Club! I wish all the students the best of luck with their future education and career goals!

Year 12
Key Stage 5

# COMPARE AND CONTRAST HOW AXONAL TRANSPORT IS DISRUPTED IN DIFFERENT NEURODEGENERATIVE DISEASES

C. Jones, supervised by K. Baldwin

Axonal transport is important to human function, so when genetic mutations affect this it causes life changing and sometimes fatal results. Neurodegenerative diseases are at the forefront of medical research as experts work endlessly to understand why they occur, to relieve the current epidemic in an ever-ageing society. It has been found that there are some obvious similarities between dominant diseases which could prove promising; however there are predictably some great differences, so understanding the function of axonal transport and the process by which it works is essential.

The nervous system is a communication network that runs throughout the body and allows for functions such as movement and senses. It is made up of two components, the Central Nervous System (CNS) (the brain and spinal cord) and the Peripheral Nervous System (PNS) which includes nerves that transmit electrical impulses to and from the CNS [1].

Axonal transport is the controlled movement of organelles in a neuron along the axon. The basic nerve cell is a neuron; it's made up of three main sections, the proximal end, known as the cell soma, containing the nucleus, and the distal end which consists of terminal branches that lead to synaptic boutons, allowing for access to the synapse. This joins to the cell soma through a long projection called the axon, which 'carries' the electrical signal along the neuron for it to be transmitted across the synapse to the receiving neuron or muscle. A single axon can be over a metre long, for example the sciatic nerve which runs from the hip to the foot [1].

Axonal transport is necessary because, as the nucleus and therefore the DNA is located in the cell soma, organelles that are necessary for synaptic transmission have to move from the cell soma to the synaptic boutons. Also, some 'used' organelles have to be transported from the boutons back to the cell soma. For example, mitochondria are made in the cell soma but are constantly required in order to provide energy in the form of Adenosine triphosphate (ATP) at the cell synapse to allow for synaptic transmission to occur so, by anterograde transport, to move down the axon. When they degenerate they must be replaced and transported by retrograde transport back to the cell soma to be recycled. Other organelles required for this process, such as the vesicles containing the neurotransmitters, are transported from the cell soma in the same way [1]. Therefore without functioning axonal transport this process of nourishment and recycling within the cell would not happen. The mitochondria, for example, would not reach the synaptic boutons and there would not be enough energy for the process of synaptic transmission. Energy, in the form of ATP from mitochondria, is needed for this process; it is essential for communication between neurons throughout the body [1].

Axonal transport relies on many proteins for it to work. The pathway for the organelles to travel along is made up of microtubules, one of three main components of the cytoskeleton; the cytoskeleton is the supportive structure for the cell made up of protein filaments. Microtubules are made up of protofilaments which themselves are made up of subunits known as tubulin heterodimers as they each contain one alpha (positive) and one beta (negative) tubulin. One end of a protofilament has a beta tubulin exposed and the other an alpha tubulin; in a neuron the alpha end is the closest to the cell soma and this means that the cell knows which way to transport the organelles. Thirteen protofilaments join to form a tube-like microtubule [1].

Microtubules form by nucleation; a process requiring lots of energy to begin although after some heterodimer subunits have attached it becomes easier. Centrosomes in the cell soma allow for this as they contain two centrioles and nucleating sites (gamma-tubulin ring complexes). These bind alpha tubulin and the process of microtubule growth begins from this point to form an astral conformation [1]. Microtubules also have a tendency to disassemble and reassemble in order to increase efficiency; they are able to alter their path by dynamic instability which is where they control how the microtubules break down and grow to transport organelles around obstacles. At the end of every alpha and beta tubulin there's stored energy called guanosine triphosphate (GTP), which is related to ATP, this provides the energy to hold the subunits together. GTP allows for a stable bond between subunits, however a hydrolysis reaction (reaction requiring water) occurs breaking the final phosphate-phosphate bond and changing GTP into GDP (guanosine diphosphate). The GDP doesn't allow for such a strong bond between the subunits; when this happens dynamic instability begins. If GTP hydrolysis occurs faster than new GTP subunits are being added (the filament is not being 'capped' in time) then catastrophe occurs and the microtubule disassembles. This can be 'rescued' if the GTP subunits are quickly added onto the microtubule again so it is capped by a strong bond and it doesn't break – reassembly starts. Often this process of rapid deconstruction and reconstruction is needed by the microtubules so as to change their route [1].

In order for the organelles to be transported down the microtubules motor proteins must be present as these act as the 'vehicles' for the 'cargo'. The two main motor proteins related to these neurodegenerative diseases are kinesin, which is dominant in anterograde transport as it is attracted towards the beta end of the microtubule, and cytoplasmic dynein which is dominant in retrograde transport as it is attracted to the alpha end of the microtubule[1].

There are three types of kinesin protein that are all constructed slightly differently. All kinesins have a heterotetramer structure meaning they consist of two kinesin light chains and two kinesin heavy chains; there are three types of heavy chain, A, B and C, which transport different organelle [1]. Kinesin proteins are dominant in anterograde axonal transport, moving organelles from the cell soma to the synaptic boutons. The process of axonal transportation for kinesin involves the motor protein 'walking' as a result of hydrolysis of ATP. Firstly the lagging head binds to the microtubule, gaining ATP energy as it does so by phosphorylation (the addition of a phosphate group) by a kinase enzyme. However a dephosphorylation hydrolysis reaction then occurs where phosphatase removes the end phosphate group from ATP, by breaking its adjoining bond, resulting in ADP and a much weaker bond to the microtubule. This process had already occurred on the leading head in the 'steps' before and so it re-binds to the microtubule and phosphorylation occurs again, so ADP gains a phosphate group by the enzyme kinase from the surrounding area (there are many 'free' phosphates) to become ATP, binding it strongly to the microtubule. This binding 'pulls' the weakened lagging head forward and in front of it as the neck linker becomes forward facing causing the lagging head to detach from the microtubule. This process continues along the axon [1].

The structure of a cytoplasmic dynein is very different to kinesin motor proteins; they have a much greater variety of chains including heavy chains, light intermediate chains, intermediate chains and light chains [1]. Cytoplasmic dynein motor proteins control retrograde axonal transport, moving organelles from the synaptic boutons to the cell soma. Despite the structure of the protein being different to kinesin its transportation process is relatable with a step beginning with the head domains binding strongly to the microtubule, gaining ATP by phosphorylation by the enzyme kinase. Similarly, a dephosphorylation hydrolysis reaction then occurs but in the leading head, removing a phosphate and weakening the bond (ATP to ADP), as phosphatase removes a phosphate group from ATP, resulting in a conformational change as the neck linker moves. This forces the rear head forward where it reattaches to the microtubule [1]. Although these proteins are dominant in transportation in opposite directions, transport only occurs if they are joined; their attachment is necessary to ensure regulation in the directionality of movement for each organelle so direction can be changed efficiently [1].



Axonal transport is a detailed process allowing for many malfunctions that could result in a neurodegenerative disease. Problems can occur in the organelles themselves, in their binding to motor proteins; in the motor proteins and in their binding to the microtubules. There can be mutations in the microtubules that result in the inability to transport the motor proteins, halting the movement of organelles, and there can be blockades along the axons themselves. It has been found that for many diseases the genetic mutations that result cause problems under multiple, if not all, of these categories, thus hinting at the reasons for the severity of the effects of the diseases and why they are proving so difficult to treat.

A very dominant disease in medical research is Alzheimer's Disease: genetic mutations result in many life effecting axonal transport defects. For example mutations in amyloid precursor protein (APP) result in the generation of amyloid-β peptide (Aβ-peptide); these are the amyloid plaques commonly associated with dementia. This activates casein kinase 2 (CK2) and phosphorylates the kinesin light chains (KLCs) and prevents organelles attaching to the motor protein, stopping vesicle transport [2]. The mutation in the APP also stimulates an axonal blockade to form as it causes increased polymerisation of actin which then aggregates to block off the axon and prevents vesicle transport this way [3]. Tau is also heavily associated with Alzheimer's diseases; tau is an accessory protein that strengthens microtubules and prevents dynamic instability [1]. If a lot of mutated tau is present this can lead to the activation of glycogen synthase kinase 3 β (GSK3β) [4]; GSK3β phosphorylates tau, which increases microtubule stability [1]. Its activation here leads to the phosphorylation of KLCs which, as with mutations in APP, results in the organelles being unable to attach to kinesins and stops vesicle transport [4]. GSK3β is also activated by the presence of amyloid-β as this causes defects in the N-methyl-D-aspartate (NMDA) mechanism; this damages the transportation of mitochondria in the same way [5]. The hyperphosphorylation (addition of lots of phosphate groups) of tau leads to microtubule defects as this increases dynamic instability which means the assembly of microtubules is a much greater challenge; this weakens axonal transport and overall has a damaging effect to the cytoskeleton [6].

As with Alzheimer's disease the binding of organelles to motor proteins is disrupted greatly in Huntington's disease, however in Huntington's the binding of motor proteins to microtubules is also affected. The mutation of the Huntingtin (HTT) gene has many knock-on effects as it prevents the functioning of one of its associated proteins, Huntingtin associated protein 1 (HAP1) which damages axonal transport as HAP1 plays an important role interacting with KLCs [7] and Dynactin 1 (DCTN1) [8]. The mutation of HTT also, along with the damaged HAP1 function, directly affects trafficking of lysosomes and endosomes [9] and the retrograde transport of brain-derived neurotrophic factor [10]. Anterograde transport of type A gamma aminobutyric acid (GABA) receptors is affected [11] and this contributes, along with some of the other affects, to the loss of the motor directional 'switch' function, so organelle cannot quickly change their direction of travel [12]. The binding of motor proteins to microtubules is disrupted as the mutation of HTT to PolyQ HTT activates C-Jun N-terminal kinase 3 (JNK3) which phosphorylates a type of kinesin heavy chain in kinesin-1, thus weakening the ability for kinesins to attach to microtubules [13]. The mutated gene also promotes the deacetylation (removal of acetyl groups) of the tubulin, reducing the binding of kinesin to the microtubules and weakening axonal transport again [14].

Huntington's is a polyglutamine disease, as is Spinal and Bulbar Muscular Atrophy (SBMA) which also results in life changing defects by the disruption of motor protein binding to microtubules [15]. The expansion of PolyQ in the androgen receptor (AR) causes the phosphorylation of kinesin heavy chains by JNK resulting in the inability for the kinesins to bind [16], similarly to Huntington's. However the genetic mutation for SBMA leads to defects in the 'cargo' itself, it is believed, as in vivo experimentation showed that there was less unphosphorylated neurofilament heavy chains present [17] and an accumulation of neurofilaments at the distal end of the cell [18].

Another neurodegenerative disease that shows affects with the 'cargo' is Hereditary Spastic Paraplegia (HSP); all types of axonal transport are affected as there are mutations in receptor accessory protein 1 (REEP1), heat shock protein 60 (HSP60) and spastic paraplegia 7 (SPG7). Slow and fast anterograde transport is disrupted by paraplegin deficiencies (encoded by SPG7) causing the accumulation of mitochondria in the distal end of the neuron and then the development of "axonal spheroids" containing organelles [19].

In HSP there are no problems regarding binding as has been found with many other diseases, instead, like the 'cargo', issues occur with the organelles. There are defects with the microtubules as atlastin and protruding mutations affect spastin biology resulting in less microtubule severing which is necessary for axonal transport and disrupts homeostasis; this decreases anterograde transport [20]. The motor proteins are also defective as mutations in the Kinesin family member 5A (KIF5A) gene weaken microtubule affinity and in vitro (outside an organism – in cell culture) it can slow transport [21] and in vivo (inside an organism – animal model) it has shown to lessen neurofilament transport [22].

In one type of Charcot-Marie-Tooth disease (CMT) a mutation of KIF5A also causes defects in motor proteins as, like HSP, there is decreased neurofilament transport. This close link shows that HSP and CMT2 must be related as they both physically present this effect as a result of their mutated genotype [23]. Motor protein defects are also sometimes shown as a result of a mutation in the dynein cytoplasmic 1 heavy chain 1 (DYNC1H1) gene [24] which similarly disrupts retrograde transport [25].

There are many variations of CMT which involve defects in many different areas, including organelles and binding. Mutations in heat shock factor binding protein 1 (HSPB1) cause tubulin deacetylation, so kinesins struggle to bind [26] and the mutation also causes 'cargo' defects where the transport of neurofilaments is affected [27]. Another example is the mutation of neurofilament light polypeptide (NEFL), which disrupts transport of different cargoes and causes the build-up of neurofilaments, isolating mitochondria [28,29]. An example of a problem with binding is in CMT2A where mutations in the gene encoding mitofusin 2 (MFN2) stop the interaction of MFN2 with adaptor molecules so mitochondria can't link to kinesins. This disrupts all mitochondria transport [30].

Similarly to CMT Parkinson's disease also occurs as a result of both cargo and binding defects. The neurotoxin MPP+ activates protein kinase C δ (PKCδ) causing an increase in retrograde but a decrease in anterograde transport, meaning there are fewer vesicles at the synapse and transmission is disrupted [31]. The cargo defects result due to mutations in the gene encoding for α-synuclein which causes a similar process to permanent phosphorylation, preventing its transport and causing it to build up in one area. [32]

Neurodegenerative diseases generally occur due to hereditary mutations in the DNA which causes proteins to be coded differently to how they 'should be' and this can result in a long list of defects, often as the result of a 'domino effect' from one mutation. Axonal transport is affected in similar ways across the diseases discussed with, interestingly, the closest link being between CMT2 and HSP and the mutation of KIF5A. The most common defects occur within the cargo themselves and the binding of the motor proteins to the microtubules. One or both of these things occur in Huntington's disease, SBMA, HSP, CMT and Parkinson's disease. Alzheimer's is arguably the most publicly researched disease of this year and yet, somewhat surprisingly, it is the most separate from these other diseases with specific problems occurring with the binding of cargo to the motor proteins due to amyloid plaques and the hyperphosphorylation of tau. Despite this, it can be deduced that from a more general perspective the final effect of the initial problems within the diseases are very comparable. On the other hand, the steps to which these problems occur are generally unique to the disease – the mutations occur in different proteins. It must be considered, however, that the solidity of the smaller details of these findings is still under great discussion [1,15].

## References


1. Baldwin, When traffic jams turn deadly: The axonal highway and neurodegenerative disease. 2015. The Brilliant Club.
2. Pigino, G. et al. Disruption of fast axonal transport is a pathogenic mechanism for interneuronal amyloid β Proc. Natl Acad. Sci. USA 106, 5907-5912 (2009).
3. Hiruma, H., Katakura, T., Takahashi, S., Ichikawa, T. & Kawakami, T. Glutamate and amyloid β-protein rapidly inhibit fast axonal transport in cultured rat hippocampal neurons by different mechanisms. J. Neurosci. 23, 8967-8977 (2003).
4. LaPointe, N. E. et al. The amino terminus of tau inhibits kinesin-dependent axonal transport: implications for filament toxicity. J. Neurosci. Res. 87, 440-451 (2009).
5. Rui, Y., Tiwari, P., Xie, Z. & Zheng, J. Q.Acute impairment of mitochondrial trafficking by β-amyloid peptides in hippocampal neurons. J. Neurosci. 26, 10480-10487 (2006).
6. Wagner, U., Utton, M., Gallo, J. M. & Miller, C. C. Cellular phosphorylation of tau by GSK3β influences tau binding to microtubules and microtubule

organisation. J. Cell Sci. 109, 1537-1543 (1996).
7. Mcguire, J. R., Rong, J., Li, S. H. & Li, X. J. Interaction of huntingtin-associated protein-1 with kinesin light chain: implications in intracellular trafficking in neurons. J. Biol. Chem. 281, 3552-3559 (2006).
8. Engelender, S. et al. Huntingtin-associated protein 1 (HAP1) interacts with the p150Glued subunit of dynactin. Hum. Mol. Genet. 6, 2205-2212 (1997).
9. Caviston, J. P., Zajac, A. L., Tokito, M. & Holzbaur, E. L. Huntingtin coordinates the dynein-mediated dynamic positioning of endosomes and lysosomes. Mol. Biol. Cell 22, 478-492 (2011).
10. Gauthier, L. R. et al. Huntingtin controls neurotrophic support and survival of neurons by enhancing BDNF vesicular transport along microtubules. Cell 118, 127-138 (2004).
11. Twelvetrees, A. E. et al. Delivery of GABAARs to synapses is mediated by HAP1-KIF5 and disrupted by mutated huntingtin. Neuron 65, 53-65 (2010).
12. Caviston, J. P., Ross, J. L., Antony, S. M., Tokito, M. & Holzbaur, E. L. Huntingtin facilitates dynein/dynactin-mediated vesicle transport. Proc. Natl Acad. Sci. USA 104, 10045-10050 (2007).
13. Morfini, G. A. et al. Pathogenic huntingtin inhibits fast axonal transport by activating JNK3 and phosphorylating kinesin. Nature Neurosci. 12, 864-871 (2009).
14. This study identifies JNK3 as a critical mediator for the polyQ HTT-induced inhibition of axonal transport.
15. Dompierre, J.P. et al. Histone deacetylase 6 inhibition compensates for the transport deficit in Huntington's disease by increasig tubulin acetylation. J. Neurosci. 27, 3571-3583 (2007).
16. Millecamps, S., Julien, JP. Axonal transport deficits and neurodegenerative diseases (2013).
17. Morfini, G. et al. JNK mediates pathogenic effects of polyglutamine-expanded androgen receptor on fast axonal transport. Nature Neurosci. 9, 907-916 (2006).
18. Chevalier-Larsen, E. S. et al. Castration restores function and neurofilament alterations of aged symptomatic males in a transgenic mouse model of spinal and bulbar muscular atrophy. J. Neurosci. 24, 4778-4786 (2004).
19. Katsuno, M. et al. Reversible disruption of dynactin 1-mediated retrograde axonal transport in polyglutamine-induced motor neuron degeneration. J. Neurosci. 26, 12106-12117 (2006).
20. Ferreirinha, F. et al. Axonal degeneration in paraplegin-deficient mice is associated with abormal mitochondria and impairment of axonal transport. J. Clin. Invest. 113, 231-242 (2004).
21. McDermott, C. J. et al. Hereditary spastic paraparesis : disrupted intracellular transport associated with spastin mutation. Ann. Neurol. 54, 748-759 (2003).
22. Ebbing, B. et al. Effect of spastic paraplegia mutations in KIF5A kinesin on transport activity. Hum. Mol. Genet. 17, 1245-1252 (2008).
23. Xia, C. H. et al. Abnormal neurofilament transport caused by targeted disruption of neuronal kinesin heavy chain KIF5A. J. Cell Biol. 161, 55-66 (2003). This study analyses the consequences of kinesin disruption in mice and provides evidence for a role of kinesin in neurofilament transport.
24. Goziet, C. et al. Complicated forms of autosomal dominant hereditary spastic paraplegia are frequent in SPG10. Hum. Mutat. 30, e376-e385 (2009).
25. Weedon, M. N. et al. Exome sequencing identifies a DYNC1H1 mutation in a large pedigree with dominant axonal Charcot-Marie-Tooth disease. Am. J. Hum. Genet. 89, 308-312 (2011).
26. Hafezparast, M. et al. Mutations in dynein link motor neuron degeneration to defects in retrograde transport. Science 300, 808-812 (2003).
27. d'Ydewalle, C. et al. HDAC6 inhibitors reverse axonal loss in a mouse model of mutant HSPB1-induced Charcot-Marie-Tooth disease. Nature Med. 17, 968-974 (2011).
28. Ackerley, S. et al. A mutation in the small heat-shock protein HSPB1 leading to distal hereditary motor neuropathy disrupts neurofilament assembly and the axonal transport of specific cellular cargoes. Hum. Mol. Genet. 15, 347-354 (2006).
29. Perez-Olle, R. et al. Mutations in the neurofilament light gene linked to Charcot-Marie-Tooth disease cause defects in transport. J. Neurochem. 93, 861-874 (2005).
30. Brownlees, J. et al. Charcot-Marie-Tooth disease neurofilament mutations disrupt neurofilament assembly and axonal transport. Hum. Mol. Genet. 11, 2837-2844 (2002).
31. Misko, A., Jiang, S., Wegorzewska, I., Milbrandt, J. & Baloh, R. H. Mitofusin 2 is necessary for transport of axonal mitochondria and interacts with the Miro/Milton complex. J. Neurosci. 30, 4232-4240 (2010).
32. Morfini, G. et al. 1-Methyl-4-phenylpyridinium affects fast axonal transport by activation of caspase and protein kinase C. Proc. Natl Acad. sci. USA 104, 2442-2447 (2007).
33. Saha, A. R. et al. Parkinson's disease β-synuclein mutations exhibit defective axonal transport in cultured neurons. J. Cell Sci. 117, 1017-1024 (2004).

## About the authors

C. is a pupil at Lincoln University Technology College. Katie Baldwin is a PhD student at the University of Sheffield studying axonal transport in neurodegenerative diseases.

## PhD Tutor's note

I was very impressed with C.'s essay; it incorporated the right level of knowledge detail and focussed well on the question, giving an excellent discussion of the similarities and differences in transport defects between the various diseases. This was an ambitious and very specialised course on a subject that the pupils had almost no prior knowledge and C. put a lot of effort into mastering the content. I also greatly enjoyed working with all the pupils and Lincoln UTC who were enthusiastic about working with The Brilliant Club to foster collaboration between school pupils and PhD students.





# SEARCHING FOR DARK MATTER

J. Rose, supervised by T. Poll

## The Standard Model

The Standard Model of particle physics encompasses the fundamental and composite particles that constitute the building blocks of matter, as well as the forces which enable them to interact - to that end, this theory helps to break down the questions "What is matter?" and "What holds it together?". A key principle is that a fundamental or 'elementary' particle is believed to have no substructure; it appears to contain no internal components. The Standard Model classifies these as either matter particles (including quarks and leptons, which are both fermions) or force carrier particles (including gauge bosons) - it is important to note that a boson is not considered a fermion because it does not have a half integer spin. Thus, the Standard Model takes atomic theory a step further by proposing that the protons and neutrons in the nucleus are not fundamental; they are both composite baryons made up of three quarks.

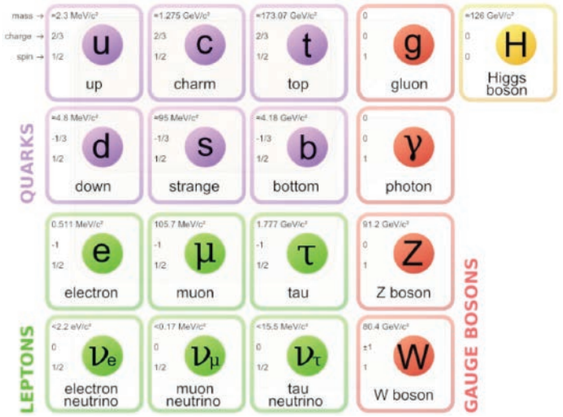



Figure 1 – The Standard Model

Under the Standard Model, there are 24 different fermions, including six 'flavours' of quarks and six 'flavours' of leptons, as well as their corresponding antiparticles which have identical masses and spins but opposite charges. These fermions are grouped in generations, with the higher generation containing less stable particles of higher mass than the previous. For instance, a top quark in the third generation is very unstable and has a half-life of $10^{-25}$s, meaning it decays rapidly in a specific branching ratio. Though the top quark can decay in many ways, such as into a W boson and a strange quark or a photon and an up quark, certain conservation laws are usually followed. For instance, the quantum numbers relating to charge and spin are conserved, as are numbers of leptons and quarks. Therefore, if there are initially zero leptons, this figure can be conserved via the production of a lepton and an anti-lepton. Another conserved property is 'colour charge'. Quarks have either a red, green or blue charge, whereas their antiparticles have the corresponding anticolour. The colour charge constantly changes as quarks exchange gluons with each other in strong interactions [1]. Composite particles (hadrons) are always a neutral white, so this must be conserved. Additionally, if a quark exchanges a gluon, that quark must change colour in order to conserve a net colour charge.

In regard to the fundamental forces, the Standard Model explains that specific bosons are responsible for each. The gluon carries (or 'mediates') the strong force, which acts on the coloured quarks, whereas electromagnetic force is carried by photons, which acts on particles with a charge. W and Z bosons carry the weak force, which can change a quark's flavour when these bosons are emitted or absorbed [2].

## Limitations

However, the Standard Model is very much an incomplete theory. There remain many unexplained theoretical concepts beyond the Standard Model that cannot currently be observed or conclusively proved by experimental data. Aside from the problem of gravity not fitting into the Model and the asymmetry of matter and anti-matter, particle physicists are investigating a number of phenomena by searching for the presence of 'dark matter' – unknown, hypothesised matter which can be inferred due to its gravitational influence.

For example, the unexpected rotational velocity curves of disc galaxies are generally believed to be caused by a 'halo' of dark matter surrounding these galaxies. According to $1/\sqrt{R}$, where R is the distance from the galaxy centre, stars that are further away from this centre should decrease in rotational velocity. However, the velocity appears to be slightly increasing in respect to radius, resulting in 'flat' rotation curves [3].

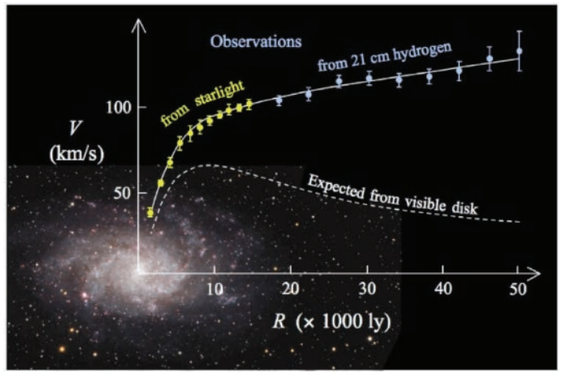



Figure 2 – Unexpected rotational velocity curves of disc galaxies

Dark matter seems to be giving galaxies extra mass, resulting in extra gravity which enables them to be held together even at high rotational velocities. By analysing the effects of gravitational lensing (the process by which light from a source such as a galaxy cluster is bent as it approaches the observer), the distribution of dark matter can be determined. Theories relating to supersymmetry and extra dimensions also incorporate dark matter.

The search for possible candidates such as WIMPs (Weakly Interacting Massive Particles) or MACHOs (Massive Compact Halo Objects) may hold the key to understanding the aforementioned discrepancies and increasing our knowledge of the composition of the universe. This report seeks to identify the presence of such particles by analysing the significance of any findings from data, as well as outlining further experiments that could be used to improve and/or confirm the reliability of the conclusions.

## Conducting the Search

The search for dark matter requires a large accelerator, such as CERN's Large Hadron Collider, to produce inelastic collisions and ultimately discover new, high mass particles. Initially, hydrogen atoms from a gaseous source are stripped of electrons in an electric field, leaving only protons. Protons in 'bunches' rotate in two beam pipes of the LHC as they are accelerated to high energies – they eventually collide at the centre of the Compact Muon Solenoid (CMS). These inelastic collisions produce new particles which are measured by several components of the CMS detector. Assuming that the particle is charged, it will leave a series of small energy deposits in the silicon tracker of the CMS, meaning its path can be recorded. The curvature of its path depends on the direction of the magnetic force and the particle's energy – the lower the momentum of the particle, the greater the curve.

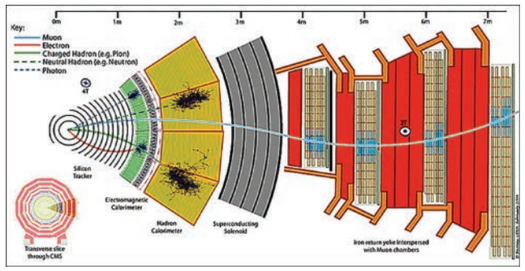



Figure 3 - The CMS Detector

If electrons or photons are also produced as a result of the collision, the energies of these would be measured in the Electromagnetic Calorimeter (ECAL). In this component, heavy lead tungstate crystals are used to slow the particles down, since they have high densities. They also serve to scintillate the energy of the particles and this scintillated light travels to photodetectors attached to the ends of each crystal. The light is converted by the photodetectors into an analogue electrical signal, which itself is converted into a digital signal for computer processing and analysis.

The Hadronic Calorimeter (HCAL) measures the energy of hadronic jets. Quarks cannot exist on their own as this would not result in a colourless state, and it is the quarks and gluons themselves that are colliding rather than the protons, so a hadronic jet is formed when these free quarks and gluons created by the collisions attempt to combine to form hadrons in a process known as 'hadronisation' [4]. These jets can be charged or neutral, but measuring them in the HCAL allows inference of the properties of the original quarks that formed the hadrons. Another vital component of the CMS is the superconducting solenoid. Since this magnet is made of a superconducting material, a high current with a very low temperature (around 3K) leads to no resistance – this means a powerful magnetic field can be created, leading to better deflection, better signals and more accurate measurements of the momentum of high energy particles. Finally, muons (leptons that are approximately 200 times the mass of an electron) are measured in the muon chambers, which contain iron to slow the particles down and plastic scintillators to measure their energies and paths.

However, it is likely that the new particles decay too rapidly for direct observation; instead it is the decay products that are measured in the CMS. For instance, a Z boson can decay into an electron and positron - the mass of the Z can be reconstructed from the energies of this pair. Since many pairs will be produced, it is necessary to identify and filter out the 'background'. These are the pairs that give a wide spread of reconstructed mass values, whereas certain pair combinations will indicate a 'resonance' above the background that may suggest the presence of a new particle. These resonance signals, which will show statistical deviation from the background, are what will be analysed in comparison to the known masses of Standard Model particles, thus allowing for identification and the conclusion of whether dark matter has been found.

## Analysis of Experimental Data

Reconstructed masses were calculated from supplied data using the following equation:

$$m = \sqrt{2E_{e^-}E_{e^+}(1-\cos\theta)}$$

Where $E_{e^-}$ is the energy of the electron, $E_{e^+}$ is the energy of the positron and $\beta$ is the included angle. Assigning these masses to bins and plotting them in a graph gave the following results. Estimating that errors are 5%, bars have been added to the graph accordingly.

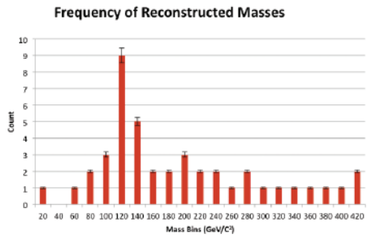



Figure 4 – Frequency of reconstructed masses from electron positron pairs

Since there is uncertainty regarding whether the 'correct' electron positron pairs have been matched up in the reconstructed mass calculations, these pairs can be checked by referring to the silicon tracker in the CMS. The positron is the antimatter particle of the electron, meaning they are oppositely charged and will leave energy deposits in the tracker. The 'hits' on the tracker can be joined up, and the tracks of both particles can be compared using vectors to identify a path. Momentum must be conserved, so if the path of one of the particles is known, the path of the other can be calculated based on missing transverse energy (MET) principles. Reconstructing using the 'wrong' pair does not significantly impact the results, as it is necessary to reconstruct using all possible pairs and filter out the background (as explained in the last paragraph of section 3, 'Conducting the Search').

The data shows a peak in the 120 GeV/C² bin that could represent a signal for the Higgs boson, since its mass is defined as 126 GeV/C² [3]. Assuming an accuracy of ±5%, this would put the upper limit of the bump at 126 and the lower at 114. Since the Higgs' mass lies within this range, the bump may be a true indication of the presence of this particle. The average background frequency appears to be approximately 2.15 and statistical error can be estimated at $\sqrt{2.15}$ = 1.47 to two decimal places. This means that the count can range between (2.15 + 1.47) = 3.62 and (2.15 – 1.47) = 0.68. The suspected signal has a frequency of 9, and because this is approximately 4 times the background (9 ÷ 2.15 = 4.19), it could be concluded that this finding is statistically significant.

Other signals from the data may validate the claims that a Higgs is present. For instance, the signal for the 100 GeV/C² bin could show a Z boson, which is a decay product of the Higgs. In this case, applying a systematic error of ±5% means that the bump could be located in the range 105 to 95, while the mass of the Z is defined as 91.2 GeV/C² [3]. Consequently, this bump may not indicate a Z because its mass lies outside of these limits. The proposed Z signal has a frequency of 3 and therefore does not exceed the statistical error of 3.62. It cannot be considered significant because the signal is not above the upper limit of the average background frequency. Regardless, it should not be assumed there was no true Higgs signal simply because of the absence of a Z. The Higgs may have followed a different branching ratio resulting in different decay products, which in turn may have decayed into other particles. It could be concluded with reasonable confidence that a Higgs boson resonance was found in this data.

Another potential signal at 140 GeV/C² is of interest, particularly as this mass does not closely match any of the Standard Model particles; the closest being the Higgs at 126. According to experiments at the Tevatron accelerator, as well as research published in the 'CERN Courier' [5] and a report by Ralf Bernhard on behalf of the DØ/CDF collaborations [6], a Higgs with a theoretical mass of 140 would typically decay into pairs of W bosons (mass 80.4 GeV/C² [3]). In terms of the data, the bump at 80 with a frequency of 2 does not exceed the background of 2.15 and is not a statistically significant resonance; therefore it cannot be decisively stated that W bosons are present. Furthermore, the aforementioned papers are fairly outdated – ATLAS and CMS experiments in late 2011 narrowed the Higgs mass range to 115-130 GeV/C² [7], meaning a Higgs with a mass of 140 may not even be producible. With this in mind, it could be argued that the bump at 140 indicates a new particle, which could potentially be a dark matter candidate. At a frequency of 5, this is roughly 2 times the background (5 ÷ 2.15 = 2.33) – while this is not as significant as the Higgs signal, it is enough to be considered a resonance that was not caused by a statistical fluctuation. At present, there is no generally accepted mass for a dark matter particle to enable comparison with this data; some findings claim that the WIMP candidates can range between 1 to 10 GeV [8]. One result found by the Fermi LAT gamma ray experiment indicated an emission line at 130 GeV which could have been caused by dark matter decay – the gamma rays may have been decay products from a heavier dark matter particle with a mass of, for example, 260 GeV [9].

Decay products are another important consideration for the resonance at 140 GeV/C². While the data may not actually show a dark matter signal, it could indicate particles that have been given off as a result of a dark matter candidate decaying. This may also explain why there are a series of smaller bumps from 200 – 420 GeV/C², since these could be the products of a much heavier dark matter particle. Another possible explanation is the influence of 'faking', where hadronic jets leave ECAL deposits and the CMS confuses these as electrons. It is estimated that faking could account for up to 50% of the electrons detected, which would hinder the reliability of the reconstructed mass data and may be the reason for the occurrence of results that are around/below the background.

## Suggestions for Further Research

It would be necessary to compare the findings of this experiment with the independently validated results of others in order to check whether the proposed signals are indeed significant resonances. To that end, this result from CMS could be compared to results from (e.g.) the ATLAS detector, and more in depth statistical analysis would be applied in order to attain a five sigma confidence level – this level of standard deviation is used to confirm the discovery of a new particle. Alternatively, next generation of colliders may be electron-positron allowing precision measurements –since fundamental particles themselves that are colliding, rather than a range of different 'sea quarks' like in protons. Reducing error can be achieved through simpler steps, such as using more statistics. Taking more readings limits statistical error, because the mean deviates from the true values less as the number of measurements increases. This would lead to a higher precision, as the results would be more reproducible. Since only 42 different electron positron pairs were used in the reconstructed mass calculations, the experiment could be repeated on a much larger scale. In regard to systematic error, identifying its source can be difficult and uncertainty will remain until it is resolved – it could instead be minimised through comparison of results (as detailed above) or through careful calibration of the equipment. Recalculating the masses again ('re-reconstruction') may help to ensure that the 'correct' electron positron pairs have been selected.

## Conclusion

This experiment has not provided sufficient evidence to verify the existence of dark matter, and in truth, current technologies may not yet have the power to end the search. We are now looking for new, high energy scales beyond the Standard Model, and over time the LHC will be upgraded to produce collisions of much greater energies – only recently has this increased from 8 to 13 TeV [10]. Discoveries such as the pentaquark and the Weyl fermion are promising and suggest that further data processing may lead to the identification of more unseen particles, among which may be dark matter candidates, which in turn will lead to greater understanding of concepts such as supersymmetry. The search for dark matter continues.

## Bibliography/References

1. Figure 1 - Standard Model Table. (2014, October 1st). Retrieved from Wikipedia: https://upload.wikimedia.org/wikipedia/commons/0/00/Standard_Model_of_Elementary_Particles.svg
2. Figure 2 - Galaxy Rotation Curve. (2014, August 26th). Retrieved from Wikipedia: https://upload.wikimedia.org/wikipedia/commons/e/ec/M33_rotation_curve_HI.gif
3. Figure 3 – Image of the CMS. Retrieved from Particle Central: http://www.particlecentral.com/accelerator_page.html#
4. [1] Color Charge and Confinement. (n.d.). Retrieved from Particle Data Group: http://pdg.web.cern.ch/pdg/cpep/color.html
5. [2] What is the Weak Force? (2014, December 24th). Retrieved from Live Science: http://www.livescience.com/49254-weak-force.html
6. [3] The Scholars Programme Searching for Dark Matter Workbook. (2015).
7. [4] Hadronization. (2015, June 4th). Retrieved from Wikipedia: https://en.wikipedia.org/wiki/Hadronization
8. [5] CDF announces intriguing results. (2011, May 3rd). Retrieved from CERN Courier: http://cerncourier.com/cws/article/cern/45736
9. [6] Bernhard, R. (n.d.). Searches for High-Mass Standard Model Higgs Boson at the Tevatron. Retrieved from: http://moriond.in2p3.fr/QCD/2010/Proceedings10/Bernhard.pdf
10. [7] ATLAS experiment presents latest Higgs search status. (2011, December 13th). Retrieved from ATLAS Experiment: http://www.atlas.ch/news/2011/status-report-dec-2011.html
11. [8] Tentative dark matter hits fit with shadow dark sector. (2013, April 16th). Retrieved from New Scientist: https://www.newscientist.com/article/dn23389-tentative-dark-matter-hits-fit-with-shadow-dark-sector/
12. [9] Gamma Ray Line at 130 GeV in FERMI LAT Possible Dark Matter Signal? (2012, April 23rd). Retrieved from Dark Matter, Dark Energy, Dark Gravity: http://darkmatterdarkenergy.com/2012/04/23/gamma-ray-line-at-130-gev-in-fermi-lat-possible-dark-matter-signal-4/
13. [10] Unidentified "Bump" In LHC Data May Be Yet Another Brand New Particle. (2015, July 20th). Retrieved from IFL Science: http://www.iflscience.com/physics/unidentified-bump-may-be-new-particle

## About the authors

J. Rose is head boy at The Weald Community School and Sixth Form, Billingshurst, and is applying to study chemistry at university. Dr Tony Poll has recently been awarded his PhD in experimental particle physics from the University of Bristol.

## PhD Tutor's note

Although J. is studying neither physics nor maths he demonstrated an excellent grasp of a very advanced topic that is beyond what is usually taught to physics students at undergraduate level. J. extended the material covered in the tutorials with his own research correctly identifying the key components of a modern particle physics experiment. Whilst there are a couple minor deficiencies in his discussion of his results, his overall approach demonstrates a maturity well beyond what might be expected. During tutorials, and in emails, J. asked pertinent questions whenever something was unclear – a vital element of university style teaching.

# IN THIS ISSUE
# Social Sciences Articles








Year 12
Key Stage 5

# SHOULD THE INTERNATIONAL CRIMINAL COURT SACRIFICE DEFENDANTS' RIGHTS IN ORDER TO PROTECT WITNESSES?

**A. Cook, supervised by R. Pulvirenti**

## Abstract
This essay discusses witness protective measures at the International Criminal Court (ICC). The analysis shows that the ICC must improve the protective measures granted to witnesses and it concludes that in order to ensure justice, protective measures must be applied to witnesses even if it does mean that defendants' rights have to be sacrificed.

Protective measures are steps taken in order to protect a witness from physical or psychological harm. The witness is someone who was present when a crime took place and so can provide an account of what happened. At the International Criminal Court (ICC) the available protective measures are, for example, anonymity, the use of pseudonyms, voice distortion when testifying, and relocation. The ICC is an international tribunal which tries people who have committed crime on a global scale, for example, genocide and war crimes. The ICC works towards the Rome Statute, a multilateral treaty which sets guidelines for the ICC's functioning. The ICC is based in The Hague, in the Netherlands, and this is where witnesses have to come and testify in a trial.

I believe the ICC must sacrifice defendants' rights in order to protect witnesses from psychological and physical harm. It is a necessary step to ensure that witnesses are able to testify freely without fear. In fact, witnesses might experience physical harm, which could be caused by the defendant, or psychological harm, caused by the pressures of the media in court. In order to ensure that justice is carried out, it is imperative that witnesses are protected. It can be argued that defendants should have a right to know who the witnesses are in order to properly defend themselves. However, this is a poor argument as justice will not be done if witnesses believe that they will be identified by the defendant. I believe that witnesses needed to be treated respectfully and, as a result, they should be allowed any protective measures even if this does sacrifice the defendants' rights.
Protective measures are an integral part of the ICC as they are included in the Rome Statute. The Rome Statute suggests that the ICC needs to do all that it can in order to protect witnesses' dignity (Article 68 of the Rome Statute). This includes the protection of witnesses' identity so that they cannot suffer from physical or psychological harm. In addition, the ICC has set up a Victims and Witnesses Unit which is designed to help the witnesses find and receive the protection they need (Article 43(6) of the Rome Statute). It has been suggested that anonymity is the greatest level of support that a court can offer a witness in order to protect them from further threats (Victims Working Group, 2007).

Protective measures have huge benefits for witnesses since they protect witnesses from any defendant's harm. Furthermore, protective measures also protect the witness from the media. The media could cause psychological harm by carrying pictures of witnesses and details of the crimes committed against them. These may cause extreme stress and embarrassment. Therefore, it is of particular importance that witnesses are protected, so that unnecessary additional harm is not brought upon them. To be protected from the media the court can hold a closed session. A closed session would involve a screen falling over the public gallery so that the witness cannot be seen and, therefore, identified by the media or the public (International Justice Monitor, n.d). Another protective measure is pixelating witnesses' faces and using voice distortion. This is used in order to prevent the identity of the witness being learnt as it will not be possible to identify the gender or the age of the witness. An additional important protective measure used by the ICC is expunging the name of the witness from all public records after the trial. This means that the witness is not named in the records released to the general public and, instead, witnesses are assigned a number such as 'witness one'. This further helps the protection of the witness's identity. The ICC can also offer the witness psychological and social support before, during and after the trial. The witness may have seen, or been involved, in some terrible acts such as torture, rape and murder and recalling these events may cause psychological damage. Therefore, it may be necessary for the witness to see a counsellor to have the support they need to get through the trial. Another protective measure is relocation. This would only be used if the witness's current location is as deemed too much of a risk for them to stay where they were (Matthew Gillet, n.d).

If protective measures are not applied then this can lead to potentially dangerous consequences for the witness. The witness will be able to be identified by the accused who may seek to cause harm against the witness if they are able to. The potential lack of protective measures could also prevent potential witnesses from coming forwards with evidence due to the fear that the accused can cause damage to them. Therefore, it should be considered vital that protective measures are available to all witnesses and not just the ones who are deemed to be under the most threat.

However, it can be argued that by granting the witnesses protective measures we are violating the rights of the accused. If the defendant does not know who the witness is, they are unable to mount a proper defence against the witness's testimony. This would appear to be unfair as the media and prosecutors have access to the accused. However, the same level of detail is not afforded to the witness. For example, if the accused people know the name of the victim then they may be able to categorically deny any wrongdoing against that specific victim. Not knowing the identity of a witness would appear to breach the principle of equality of arms, according to which the accused have the same rights to examine the witnesses as the prosecutors have in examining the accused's witnesses. However, if the protective measures are in place, then, the accused's lawyers are not able to fully investigate the authenticity of witnesses' testimony.

Furthermore, by granting a witness protective measures, the ICC could be breaking the Universal Declaration of Human Rights (UDHR) for the accused. Article 10 of the UDHR states '[e]veryone is entitled in full equality to a fair and public hearing by an independent and impartial tribunal'. However, if there is a closed session, part of the trial will automatically not become public. If the trial is made public, it is expected that the public would control the independence and the impartiality of the court. However, if it is not made public this further guarantee is lost. It can be equally argued that the right to fair trial is not respected if a witness's identity is not disclosed. For true equality, all of the members of the trial should be on an equal footing. This, however, cannot be achieved when some members are under protective measures.

Additionally, it can be argued that protective measures are not wide-ranging enough. For example, when witness are not at court they are not additionally protected by the ICC. So, if witnesses are identified they could be at threat. For example, Meshack Yebei was a defence witness for William Ruto in his trial in relation to the Kenyan election violence. He was offered, and accepted, safe housing by the ICC. However, his wife and child were not allowed to move with him to the safe housing and he, therefore, returned home to visit them. In his return home, he was killed. The ICC did not adequately protect Yebei as they did not relocate his family in addition to him. Additionally, the ICC did not protect Yebei as it did not keep him at the safe housing and, instead, he returned home where there was a much higher risk of being killed (BBC, 2015). When the wider family of the witness is not protected, if the witness is identified the witness's family can be targeted by associates of the accused in order to try and intimidate the witness into changing their testimony or withdrawing from proceedings. If witnesses and their immediate family have been relocated in order to protect them, they are no longer allowed to communicate with friends or family in their previous location. If they do attempt or manage to communicate with people in their old environment then it is possible that the ICC decides that it will limit the amount of protection which the

witness can receive (Tom Maliti, 2011). The rules imposed by the ICC in relation to relocation also appear to violate the UDHR. Noticeably the ruling of not being allowed to return or communicate with people of your own original environment seems to contradict Article 13 of UDHR. This therefore raises the question of whether witnesses are adequately provided for in protective measures.

Additionally, there is an argument that not enough is done before trial to protect witnesses from the accused. Potential witnesses can be threatened before trial by the accused in order to ensure that they do not testify against them. For example, before the International Criminal Tribunal for the Former-Yugoslavia, which was an ad hoc tribunal set up prior to the creation of the ICC to investigate the serious humanitarian violations in the former state of Yugoslavia, many witnesses were attacked and harassed in order to intimidate them. Several people were subsequently prosecuted for witness tampering (Gonzalez, P.V & Ferstman, C, 2009). Even though this was an incident prior to the creation of the ICC, it is not impossible that a similar situation arises in mass witness intimidation before a trial takes place.

Furthermore, the witnesses do not receive adequate daily allowances whilst they are at the trial. In the Kenyan Election trial of William Ruto and Joshua Sang witnesses received the equivalent of ten US dollars a day for compensation (Nevins Biko, 2013). This seems to be an unfair outcome for potential witnesses who will have to miss work for several days in order to travel to The Hague and that will only receive ten dollars. This is not enough to support a family and, so, it makes testifying an unattractive proposition for the potential witnesses. In fact, it can have a clear negative effect on the witness's life if he/she chooses to testify against the defendant. This means that overall protective measures do not ameliorate witnesses' lives. The ICC needs to rectify this situation in order to make the act of testifying as a witness more appealing to the potential witnesses.

There is a need for a change at the ICC in order to get reliable testimonies for serious crimes. Currently, the proposition of having to be transported to The Hague, without knowing whether or not a witness will receive protective measures, and with a poor compensation, is not necessarily attractive for potential key witnesses. A beneficial change for witnesses could be to set up ad hoc witness rooms in a more convenient location for the witness. That way the witness does not need to take a long time out of their regular life in order to appear in front of the ICC. There could be a satellite feed between the ICC and the witness. This would allow witnesses to stay in their own country whilst testifying.

Additionally, anonymity should be offered to all witnesses who enter the ICC. This would ensure that if a witness desires then it is guaranteed that their identity will not be found out. At the minute, there is no guarantee that witnesses will receive the protective measures which they want. In order to protect the dignity of the witness, according to the Rome Statute, all witnesses should also have the option to have a closed trial. This would ensure that the media will not be able to question the witnesses about their ordeals if they do not want to.

In order to ensure justice, protective measures must be applied to witnesses even if it does mean that defendants' rights have to be sacrificed. Justice will only prevail when there is a detailed picture built up based on the testimony of several witnesses who were present whilst the crimes were being committed. These witnesses need to feel safe and that the defendant will not come to harm them as a result of their statements. There is no denying that the system currently in place is not a perfect one by any stretch of the imagination and that the human rights of the accused and the witnesses appear to be abused by the ICC. There needs to be a solution to this problem in order for the court to work more effectively than it is currently. However, the main focus should be to protect witnesses in order to try and encourage more witnesses to come forwards and to show that the ICC is a place where justice is served. I believe that witnesses are the most crucial evidence there is in finding the guilt of an international criminal and they must be protected at all costs.

## Bibliography


Amnesty International, 'Fair trial guarantees' at https://www.iccnow.org/documents/FS-AI-FairTrialGuarnt.pdf (accessed on 4 August 2015)

BBC, Kenya 'ICC defence witness' in Ruto's trial killed, at http://www.bbc.co.uk/news/world-africa-30703876 (accessed on 4 August

Biko, N, 'I refused to Testify', https://thehaguetrials.co.ke/article/i-refused-testify (accessed on 5 August 2015)

Gillett, M; 'Protective measures', http://www.peaceandjusticeinitiative.org/implementation-resources/protective-measures (accessed on 4 August 2015)

Gonzalez, P.V & Ferstman, C, (2009) 'Ending threats and reprisals against victims of torture and related international crimes: a call to action,' Pg.51

International Justice Monitor, 'Glossary of Legal Terms',http://www.ijmonitor.org/glossary-of-legal-terms/ (accessed on 4 August 2015)

Maliti, T, Expert: 'Relocation of a witness does not entail life protection by the ICC', (2011), http://www.ijmonitor.org/2011/07/expert-relocation-of-a-witness-does-not-entail-life-protection-by-the-icc/ (accessed on 4 August 2015)

The ICC, 'Ngudjolo Chui case: ICC Appeals Chamber confirms the acquittal decision,' (2015) http://www.icc-cpi.int/en_menus/icc/press%20and%20media/press%20releases/pages/pr1089.aspx, (accessed on 5 August 2015)

The ICC, 'Ngudjolo Chui case: ICC Appeals Chamber confirms the acquittal decision' (2015) http://www.icc-cpi.int/en_menus/icc/press%20and%20media/press%20releases/pages/pr1089.aspx, (accessed on 5 August 2015)

The ICC, Rome Statute, (1998) http://www.icc-cpi.int/nr/rdonlyres/ea9aeff7-5752-4f84-be94-0a655eb30e16/0/rome_statute_english.pdf, pg.47, (accessed on 5 August 2015)

The UN, 'The Universal Declaration of Human Rights' http://www.un.org/en/documents/udhr/, (accessed on 5 August 2015)

Victims' Rights Working Group, Online (2007) http://www.vrwg.org/victims- rights/protection-and-support (accessed on 5 August 2015)


## About the authors


A. Cook is a pupil at the West Bridgford School in Nottingham. Rossella Pulvirenti is a 3rd year PhD student at the School of Law of the University of Nottingham. Her research focuses on witnesses' and defendants' rights before the International Criminal Court.


## PhD Tutor's note

My placement at the West Bridgford School in Nottingham was extremely enjoyable. Pupils were polite, respectful and committed. They showed great interest for the topic and engaged enthusiastically with the activities assigned during the tutorials. I developed this course based on my PhD research which focuses on witnesses' and defendants' rights at the International Criminal Court.

I chose to submit A.'s essay because he produced a very interesting and outstanding piece of work. His essay is well structured and explores both pro and cons of granting protective measures to witnesses at the International Criminal Court. He believes that to ensure justice, protective measures must be applied to witnesses even if this means that defendants' rights have to be sacrificed. He reaches this conclusion after having critically analysed the functioning of protective measures. Furthermore, he highlights that the current protection scheme is not perfect since it undermines basic human rights. For this reason, in his essay, A. proposes new solutions to protect witnesses trying to address the current shortfalls of the protection system. This analysis, which shows A.'s point of view and creativity, is corroborated by pertinent literature reference.





# WITH REFERENCE TO ASTROLOGY, DESCRIBE AND OUTLINE ITS MAIN FEATURES; WHAT DIFFERENCES, IF ANY, EXIST BETWEEN A 'RELIGION' AND THIS TYPE OF 'SPIRITUALITY'?


**K. James, supervised by N. Toseland**


## Essay Body

Astrology certainly has a role in some people's lives, but whether this role is as a religion is debatable. Its relationship with mainstream society changes in different forms of media, with horoscopes being used commercially, but their credibility being questioned by psychology, yet it seems also to be a genuine belief followed by many, with a broader scope than what might be known by outsiders. Indeed, it's probably most accurate to recognise astrology as a spiritual practice that may appear as a religious ritual, in the same way as meditation, but not as a religion in its own right.

In order to understand the place of astrology in the definition of a 'religion', it's important to know what it actually is, and what it involves, both according to outsiders and those who practice it themselves.

When most people think of astrology, they are reminded of the twelve star signs (see Fig.1) and the concept that everyone on the planet can be fit into those categories according to their respective dates of birth. What these categories actually mean, however, are sketchy to a lot of people, and they go into much more depth than simply the horoscopes. The four elements that the signs relate to (earth, fire, water and air) show compatibility between people, and each sign further relates to a planet, which can supposedly determine a person's characteristics. Followers of astrology – those who understand and practice it, not those who simply read their weekly horoscopes – tend to understand the meanings of these signs more clearly, and may take the astrological signs to be realistic indicators that allow them to judge an individual's character.

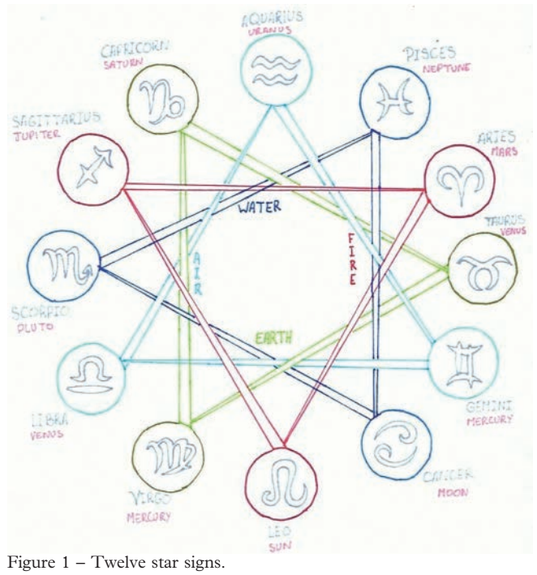



Figure 1 – Twelve star signs.

When I spoke to the son of someone who follows astrology, he said that he felt that he was expected to be "basically defined by those traits" that his star sign predicts him to have, even when he doesn't identify with them himself. In an interview with someone who considers themselves a believer in astrology, though, it was related to me that, "whilst they can tell us some traits, it doesn't mean the star signs always have it right", and she believes that a star sign "does not always define who you are". It would appear that different people believe the traits outlined to be more binding than others, which could be a result of them following it to a different degree. The greatest understanding of what exactly astrology is, and how it behaves as a belief-system, came from my interview with a believer, and relates as follows:

*Perhaps the greatest thing about this definition is that it doesn't mention star signs at all, which are usually considered to be the most important, or, by those less informed, the only aspects of astrology. She pointed out that while the star signs are a part of it, astrology is more about "the phases of the moon and the alignment of the planets", which are believed to control, or at least alter, people's emotions.*

It appears that she isn't alone in comparing astrology to spirituality either, as there are a lot of groups who link knowledge of their place in the astrological world with the greater understanding of the self that is promised through 'spiritual' movements (Meetup, 2015). Many of these groups, such as the Central Florida Creative Spiritual Living group, and Psychic Infusion, incorporate astrology as one of their many ways help people to connect with the spiritual world (Sides, 2007), alongside other practices such as tarot readings, yoga and meditation (Toynbee, 2008). The practices of astrology appear to vary, suggesting that it is a largely individualistic belief. My interviewee said that one of her practices is to "pray to Demeter and Artemis on the Harvest moon" – although these are Greek gods, they represent harvest and nature, which coincide with her belief that astrology is about "phases and cycles" and "Mother Earth".

While different people follow astrology in different ways and to different degrees, making it an individual and personal worship, it seems that to those who follow it more strictly, it's about more than just the star signs. The description of astrology given by my interviewee suggests that it helps people to understand their places in the wider world, and offers explanations beyond the common stereotypes that outsiders might believe it to be based on. Indeed, understanding what astrology is, and what it means to its followers, is integral to figuring out whether or not it can be classed as a religion.

So, then, what is a religion? It seems that this, too, is an important concept to understand to draw parallels between it and what has already been divulged about astrology. The answer to that question, though, appears to be more complicated – no one actually knows. Prominent figures in religious studies have their ideas, with Geertz's definition (1993: 87-125) being widely accepted as the best, but even that isn't viewed as perfect, or set in stone. Indeed, 'cults' and 'spiritual' movements are considered as different from 'religions', so it would be equally important to evaluate the place of astrology against those fields. In order to understand the differences between astrology and religion, if there are any at all, astrology must first be classified, so to speak.

Through its practices, the relationship between astrology and 'spirituality' has already been largely discussed. Many people who identify themselves as 'spiritual', though, wouldn't identify themselves as 'religious', so it may be possible to argue that astrology is not a religion, as it comes across more as a spiritual practice. In my interview with someone related to a follower of astrology, I was told that "spirituality and religion can be seen to oppose each other", but he didn't feel like the two things were mutually exclusive – he told me that he has "known people who are into star signs who are also religious". Here, he seems to view astrology as separate to religion, in the sense that religion is separate from spirituality, and the practices of it. This view coincides with Durkheim (1975: 96), and his ideas about what distinguishes a religion from spirituality; while spirituality is "optional" and "fashioned according to one's own needs and understanding", a religion tends to be "formulated by a whole group" and thought of as "obligatory to practice". Astrology seems to fit into the former of these two groups, being described by the follower I spoke to as something she practises "as an individual". The implication that religion is something strict, whereas spirituality is something fixed, classifies astrology as differing from religion.

On the other hand, there are some ways in which astrology is closer to religion than to spirituality. According to Heelas (1996: 18-38), spirituality rejects the "established order", and the "importance it attaches to playing roles", but this isn't something that rings true in astrology – a large part of astrology is the roles it places on people. If Heelas' ideas about "self-spirituality" are to be taken as accurate, then astrology would lean towards

the religious. While my interview with a follower of astrology revealed that there is more to astrology than just the star signs, she also told me about the roles of the individual signs based on their planetary associations, like that "the Sun rules Leo, as he is the King". This expectation, therefore, for people who are born in late July or early August to be 'leaders', makes astrology lean towards the "life-as" model rather than the "subjective-life" that spirituality turns towards (Heelas & Woodhead, 2005: 3). This can be confirmed by my interview with the son of a follower, when he told me about how "those traits and that star sign" are used to "compare" him to others, thus categorising him – i.e., 'life-as' an Aries. Furthermore, astrology is largely accepted by mainstream society and culture, with star signs and horoscopes appearing in most newspapers and magazines. My interviewee suggested that "the phases can influence creativity the best time being during the full moon", and words such as "lunacy", from the concept of the full moon evoking "erratic tendencies" (Wilson, 2014: 2), are so integrated into modern society that it is difficult to view astrology as society-rejecting. In this instance, it may appear that astrology has closer ties to 'religion' than it does to 'spirituality'.

The relationship between astrology and 'cults' might also help to find differences (or a lack thereof) between astrology and 'religion'. In some respects astrology could be classified more as a 'cult' than a 'religion'. The key idea for this argument comes from the idea of applying "manipulative, or coercive techniques of persuasion" (Atack, 2012: 15.20), which can be identified in some practices of astrology. This is mainly apparent through commercial horoscopes, which many people are tricked into believing due to the "Barnum effect", which is "the tendency for people to identify with personality descriptions of a general and vague nature" (Hartmann et al, 2006: 1349-62). This can be described as "manipulative" because it means that people are putting trust in their horoscopes, and believing them to be true, simply because they are so general that they could apply to anyone. When it comes to horoscopes that have to be paid for, this idea of it being "designed to advance the goals of the group's leaders" (Atack, 2012: 15.20) becomes especially true – these general descriptions of personality traits can produce emotional reactions in people that would lead them to further buy into it (BuzzFeed, 2015). The practice of 'preaching' also comes under the heading of "techniques of persuasion". Indeed, my interview with the son of a follower of astrology revealed that the follower tries to get him to "read books on astrology", and to "open [his] mind to it", despite knowing that he doesn't believe in it. The frequency that he suggested that these occasions occur implies that pressure is put on him to conform to those beliefs, which can be viewed as manipulative. Indeed, several parallels can be drawn between astrology and 'cults'.

On the other hand, it can be argued that astrology is more like a religion than it is a cult, and these manipulative techniques are only practised in "bad astrology". The follower of astrology that I spoke to said she felt that the commercial use of astrology – in newspapers and magazines, for example – "detracts a good deal" from the overall belief system. This would indicate that the horoscopes that utilise the Barnum effect aren't good representations of what astrology is as a whole. Furthermore, she suggested that 'there's no use in converting or preaching to someone', because she doesn't believe that it's necessary for others to share her beliefs, just as she wouldn't appreciate other people "preaching" to her. The distinction between a 'religion' and a 'cult' is unclear, but it can be argued that the only difference between the two is size (Stavrakopoulou, 2012: 5.20). In this respect, it's difficult to see astrology as a cult, because it isn't a small-scale movement; everyone in the Western world at least knows a bit about it, as it appears in mainstream culture. Around a quarter of people in the UK and America believe in horoscopes, and around 60% of young people believe that there is truth to astrology (Wilson, 2014: 1). Groups that claim to practice astrology appear worldwide (see Fig.2). With this many people knowing about and following astrology, it is difficult to argue that astrology is a 'cult', when arguing that the only difference between a 'religion' and a 'cult' is the size of the movement. The reality of astrology from its followers appears to suggest that it's more of a 'religion' than a 'cult'.

It would appear, then, that astrology could be classed as a religion, but it is still necessary to look at the 'definition' of a religion. According to Geertz, a religion is a "system of symbols" (1993: 90), by which he simply means something that represents something else. In astrology, there are plenty of symbols. On a basic level, these might be the images that represent each star sign, but then each star sign represents elements and planets, which in turn represent characteristics, and then people. Astrology seems to be all about a person's date of birth being a 'symbol' for who they are. In Smart's seven dimensions of religion (1969: 15-25), the reading of horoscopes, and therefore the understanding of these 'symbols', might be seen as a "ritual" – e.g., checking horoscopes each week. These horoscopes may have already been established as merely an aspect of astrology, but my interviewee's praying "on the Harvest moon", suggests that there are other rituals that followers of astrology partake in. Another aspect of Geertz's definition is the idea that these symbols are able to "establish powerful, pervasive, and long-lasting moods and motivations" in followers (1993: 90). This appears to be an important aspect of what a religion is, as it's discussed in Smart's definition too (1969: 15-25), referring to the private reactions individuals have to their religions. As can be seen in BuzzFeed's social study on the Barnum effect (2015), horoscopes can produce strong emotional reactions from people, which can be said to correlate with Geertz's and Smart's ideas. The most interesting thing about Geertz's definition, however, is the reference it makes to things seeming "uniquely realistic". The word 'uniquely' applies strongly to astrology, because it's seen to be an individualistic and personal practice. Astrology has some aspects that match it to being a religion.

Figure 2 – Practicing astrology groups.

My interviews, however, completely disagree with this. The follower that I spoke to believes that "astrology ties closely with [her] religion", but she identified as a Pagan, and made clear that astrology wasn't her exclusive belief. The person related to a follower of astrology also told me that astrology is "not a substitute for religion entirely", and that believing in star signs was separate to being a part of a religion. When it comes to determining whether or not astrology is a religion, is it possible to say that its classification is more what the scholars say about religion in general than what followers say about astrology specifically? In this manner, it's possible to argue that astrology is a religion, a cult, and a spiritual movement all at once. It would be most accurate, therefore, to take the words of the followers, and those related to the followers, as knowing the most about whether or not astrology is a religion, because they speak of it specifically, rather than speaking about each classification more generally, and trying to find where the lines overlap. According to these followers, astrology doesn't stand on its own as a religion, and instead, is an aspect or a practice of something else.

Overall, it would probably be most accurate to recognise astrology as a spiritual practice, or a religious ritual, rather than a religion in its own right. When it comes to distinguishing whether or not there are differences between a 'religion' and this type of 'spirituality', the most reliable sources would be the ones who have first-hand experience with astrology, and therefore know what it is to its followers, because they themselves follow it. Astrology has a broader scope than most people believe it to have, because there's more to it than horoscopes and star signs. Indeed, it's these other aspects of astrology which make it closer to a spiritual practice than to a religion – maybe sharing in some cultish practices, but not a cult, and part of a spiritual movement, maybe, but not a spiritual movement itself. While astrology might be seen as a belief system, it does not stand as a religion in its own right.



## Bibliography

'Astrology Meetups', Meetup, (2015). <http://astrology.meetup.com/?country=&locationPickerRef=0&dbCo=gb&dbOutsideUsLink=&submit=Search> [accessed 5 August 2015].
Atack, John, 'Is there a difference between a religion and a cult?', The Big Questions, (2012). <https://www.youtube.com/watch?v=hwl60WJkOWU> [accessed 28 June 2015].
BuzzFeed, 'How well do you really know yourself?' (BuzzFeedBlue, 2015) <https://www.youtube.com/watch?v=sfsE7w1zZKY> [accessed 1 August 2015].
Durkheim, Emile, in W.S.F. Pickering, Durkheim on Religion. A Selection of Readings with Bibliographies (London: Routledge, 1975).
Geertz, Clifford, The Interpretation of Cultures: selected essays, Geertz, Clifford (Oxford: Fontana Press, 1993).
Hartmann, Peter, Reuter, Martin, Nyborg, Helmuth, 'The relationship between date of birth and individual differences in personality and general intelligence: A large-scale study', Personality and Individual Differences, 40 (2006) pp. 1349-62. <http://personalpages.to.infn.it/~bagnasco/Hartmann2006.pdf> [accessed 1 August 2015].
Heelas, Paul, The New Age Movement (Oxford: Blackwell, 1996).
Heelas, Paul, Woodhead, Linda, The Spiritual Revolution: why is religion giving way to spirituality? (Oxford: Blackwell, 2005).
Neyro, Astrology Circle with Zodiac Signs, Planets Symbols and Elements, (2008) <http://www.123rf.com/photo_37690072_stock-vector-astrology-circle-with-zodiac-signs-planets-symbols-and-elements.html> [accessed 26 July 2015].Sides, Susan Thomas, 'Central Florida Creative Spiritual Meetup', Meetup, (2007). <http://www.meetup.com/florida-positive-energy/> [accessed 1 August 2015].
Smart, Ninian, The Religious Experiences of Mankind (Glasgow: Collins, 1969).
Stavrakopoulou, Francesca, 'Is there a difference between a religion and a cult?', The Big Questions (2012). <https://www.youtube.com/watch?v=6MJP3hWevEE> [accessed 28 June 2015].
Toynbee, Emma, 'Psychic Infusion', Meetup, (2008). <http://www.meetup.com/psychicinfusion/> [accessed 1 August 2015].
Wilson, Glen D., Cosmic Influences on Behaviour? (Gresham College, 2014).

**About the authors**
K. James is a 12 pupil at London Academy. Nick Toseland is a PhD candidate in the Anthropology of Religion at Durham University.

**PhD Tutor's note**
This essay is an outstanding piece of research into Astrology using social scientific methods. The course challenged pupils to pick a belief-system associated with 'spirituality' as opposed to 'religion' and to don the gloves of an anthropologist by engaging not only with books and other secondary sources, but with actual 'real-life' practitioners and believers. K. uses her well-sourced data from interviews both to capture the essence of the astrological outlook, and also to reflect critically upon some of the theoretical analyses offered by other academics in the Study of Religion. Her engagement with the sociologist Paul Heelas, arguing that on his terms astrology better resembles a 'religion' than a 'spirituality', is just one notable example of her innovative, astute, and empathic analysis of what was, only weeks previously, an unexplored phenomenon.

Year 12
Key Stage 5

# WHAT ARE THE PATHWAYS UNDERTAKEN BY PARENTS FROM THE SOUTH ASIAN AND SOUTH EAST ASIAN COMMUNITIES TO SEEK HELP FOR THEIR MENTAL HEALTH PROBLEMS?

**S. Ubong, supervised by N. Sali**

Disparities in accessing mental health services have been considered a serious public health problem in Britain. However, the extent to which these disparities may be accounted for as a result of socio-cultural context which unfortunately is relatively unexplored, especially for some minority groups such as South Asian patients who are commonly known to under-utilise specialist mental health services. To understand such conditions, it is vital that the routes undertaken by parents in seeking help are explored along with other factors: social barriers, individual barriers, cultural, religious needs, and stigma. Exploring the perceptions, beliefs, causes and treatment of mental illness will help us understand the varied expectations, experiences, beliefs, and attitudes of parents from the South Asian community (Hussain 2004). Reviewing the initial obstacles that may prevail for parents with mental health issues, and analysing patterns of help-seeking as well as barriers to seeking help, negative attitudes and beliefs about help-seeking and fear of stigma will help form a basis of the main routes they take to gain support.

## Definition of mental health

The World Health Organisation's (WHO) definition of mental health provides an essential framework in understanding and responding to mental health, encompassing many different approaches to the subject matter (WHO Sept. 2011). The underlying construct and definition have significantly aided our current knowledge to clarify principles in what can be considered as positive mental health. To illustrate, three concepts have been derived: the absence of disease; the fact that the person is able to have control over full performances of all of functions; and attitudes of an individual toward his own self and the relationship one has with both his/her environment (Bhugra et al. 201 ).

If a parent lacks positive mental health, it can affect many areas of life such as work and home. It may prevent them from making the most of opportunities in the workplace, amongst friends, peers and community thereby enforcing negative emotions such as isolation and sadness. Perception of mental illness in the South Asian community largely differs from traditionally 'western' views. In western perception, mental illness is seen as a 'thinking illness' detached from any forms of physical illness. However South Asian writers described this as 'pressure in the head' (Gask et al. 2010), leading to the idea of mental illness being seen as physical. It was also highlighted in this text that South Asian people do not differentiate between illnesses of the mind and the body (Wheeler 1998). This in itself is problematic at it can hinder help seeking process and cause confusion for parents.

## Understanding depression

In the UK, anxiety and depression have been highlighted as the most common mental health problems amongst adults, affecting 9.7 out of 100 adults (MIND 2009). Research has shown that women between the ages of 18-45 are more at risk of depression and more than 60% of women who meet the criteria for depression are parents (Nicholson et al. 2004). In comparison to White British women, it was confirmed that British South Asian women are 1.6 times as likely to attempt suicide and twice as likely to commit suicide. (Bhugra et el. 1999). These statistics are evidence to the fact that mental illness amongst women is a major problem and that this problem spans deeper into women of South Asian origin.

## Mental health stigma

Psychiatric stigma is prevalent and severe in South East Asian cultures (Hong ng 1996). The word 'stigma' has many negative connotations. It was found that stigma's effects on a person are "deeply discrediting, reducing the stigmatised person from a whole and usual person to a tainted, discounted one" (Goffman 1963). Unfortunately, as a result of stigma, discussion of psychiatric disease has a huge effect on South Asians. It prevents them from discussing common problems such as depression from friends and family (PAMF 2012). This stigma has a domino effect, preventing parents from revealing too much, thus pushing one another to further isolation. There is frequently a lack of educational materials about depression and mental illness shared by South Asian communities, which is a serious public health concern, in addition to understanding barriers to services, stigma, race, and ethnic disparities in mental health service prevent parents from reaching out to those around them (Bhugra et al. 2004). Parents may commonly dismiss their mental health condition as a product of their duties such as work and family responsibilities. Due to the social stigma and fear, the mental health condition is repressed resulting in parents not being diagnosed and treated. This significantly poses a negative outcome for the parent and their children (Nicholson 2002).

Mental health literacy contributes to slow problem recognition. It was argued that this concept results in the public being unable to prevent mental disorders from arising, being unaware of the disorder and lack of knowledge of available treatments (Jorm 2011). This stems from the fact that some South Asian languages, such as Urdu and Punjabi, have no specific translation for mental disorders such as 'depression'. The closest word that Punjabi or Urdu speakers have to depression is 'pagal'. When translated, 'pagal' has a number of negative connotations such as 'mad', 'crazy' person (Wheeler, 1998). Due to a lack of psychiatric terms, there is a prevalent and severe mental health stigma. Many informants in studies have indicated that the use of this term was said to be stigmatising and degrading resulting in them being isolated from their community.

## Parents with mental health problems

The social meanings of parenthood can be defined as an individual who is either a biological or adoptive parent that has a responsibility to look after their children. Within South Asian culture there is a particular promotion of family obligation. Self-sacrifice is of primary importance where parents are obligated to do the best for their families (Shariff 2009). This promotion of self-sacrifice is a partial reason behind the initial delay to seek treatment resulting in parents not seeking professional help (Wilson 2005). Mental health stigma plays a crucial role as the stigma is attached to fear. Parents think that they would bring shame and disappointment to their family when admitting they have a mental health problem. In a study analysing the effects of the hospitalisation of Pakistani women, it was reported that their role within their family as well as in their community was severely damaged. A large proportion of them (92%) felt as though their roles and responsibilities in family life disintegrated and they became isolated from their family (Wheeler 1998).

Many parents in South Asian communities are aware of the possible consequences if they admit they have mental health problems, and so this prevents them from seeking help. This would be viewed as an act of self-sacrifice, sacrificing their well-being in terms of mental health for the benefit of their family and avoiding the shaming of their family. It is this duty to their children and family that hinders parents from seeking treatment.

Bhugra (2013) describes three concepts: structural, community, and individual. 'Structural' can be defined as cultural, economic and living factors being a core contribution in forming a proximal world for a person. Depending on the standards on the structural social aspect, an individual can be influenced greatly by this, either contributing positively or negatively to one's mental health.

Also, community reinforces an individual's placement within the structural level. Thus, the community concept forms positive sense of belonging, activities to highlight and embrace diversity, social support, and participation in society which can significantly influence one's mental health positively. Community provides a support system for the individual with the involvement of key members such as family, friends, and colleagues. Community concept allows notions of interaction between oneself and others to be expressed. The idea of interaction and communication have been reinforced as vital to individuals' strong sense of self and others thereby contributing to a positive mental health.



Finally, the state of balance within oneself and others can also be extended to the capacity in an individual to relatively form relations with peers and effectively contribute to changes in his or her social and physical environment. These three factors interact in a range of complex ways. For example if the individual is unable to face a stressor as a result of the structural factor and if the community factor is not strong, social support may not be present thus the individual may not be able to reconcile and share thoughts in order to seek help from the community. This may lead to isolation and poor mental health.

Losing custody of their children is also a big fear for many South Asian parents. They take family seriously and admitting mental health status has negative consequences (Nicholson and Biebel 2002). 'Pagal' not only affects the individual but has a significant effect on of the lives of their children. Within some cultures, if the parent has been labelled 'pagal' the same label is automatically attached to the child. Therefore, stigma doesn't only threaten themselves but the children. Many parents would rather suffer in silence than see their children suffer (Wheeler 1998).

## Gender Roles

Gender role is a key concept within the South East Asian community. This can be defined as 'the set of attitudes and behaviours socially expected of the members of a particular gender' (Artkoski 2013). It was argued that individual adapts to cultural definitions of gender-appropriate behaviour. Therefore, culture has a large impact on the definitions of the ideal standard against which her or his own behaviour is to be evaluated. Masculinity and femininity are gender roles and are influenced by culture and tradition (Bem 1974).

The cultural norms in South East Asian communities are predominantly patriarchal (Niaz and Hassan 2006). These standards are reinforced through religion and culture, upholding the idea that men are superior over women. This results in help-seeking patterns in men are consistently lower than in women, especially in the case of emotional problems and depressive symptoms. Social norms of traditional masculinity play an important role as they make help-seeking more difficult because of the inhibition of emotional expressiveness influencing symptom perception of depression. Therefore, social factors which produce further barriers to help-seeking are big factor amongst men. The idea of being the head of the household and main provider are enforced as a result of gender roles, and having a mental illness is considered 'weak' and is associated with the thought that they are unable to fulfil their gendered role within their family (Möller-Leimkühler 2002).

## Definition help-seeking

Help-seeking is a term which refers to the act undertaken by people with a mental health problem to seek help for their issues (Rickhood 2005). This involves communicating with others in order to get advice, support, information, and treatment. Help-seeking is key form of a humans' coping mechanism as it promotes parents experiencing the distress to reach out to others, creating relationships and allowing them to break away from the isolation they initially felt when keeping their mental condition to themselves. (Valiant 2012).

Help-seeking can be divided into two categories: informal and formal. Informal help-seeking is getting assistance from the social network that surrounds the individual. It forms personal and not professional relationships. Examples of informal help-seeking are friends, family, and religious leaders. Formal help-seeking is from professionals with a recognised role within society who possess the certain qualification, education, and skills to provide assistance to the help seeker. Mental health professionals such as psychologists and psychiatrists are seen as formal help-seeking professions. However, formal help-seeking can expand to a range of roles such as non-health professionals such as a teacher, lawyer, and possibly a youth worker who would be able to provide advice and support for the parent (Rickwood, 2012).

## Informal help-seeking

Within South East Asian culture, visiting a religious leader is sometimes seen as more appropriate than seeing a medical professional about their distress and there is no stigma attached to this (Wheeler 1998). Despite religious leaders providing them support, many parents will not be able to access the appropriate measures and help that they need in order to fully resolve their distress. For example, a significantly large population of Indians are Hindus (78%) therefore mental health disorders are commonly expressed in a religious way with discussions of spirit possessions. The 'healing' process is mainly enforced through religious principle (Conrad and Pacquiao 2005). One study (Oliver et al) found that 63.1% of 10302 of participants preferred informal help-seeking specifically from friends and family if they felt 'low'. This shows that informal support is popular amongst many (Brown et al. 2014).

## Formal help-seeking

Within Asian communities, families are regarded highly, and therefore seeking help from outside can be seen as disrespectful (Tavkar 2008). Seeking formal help is seen as shameful and against family values. Patients generally express physical symptoms such as headache, loss of appetite, and dizziness and seeking help from a General Practitioner is deemed appropriate when the individual suffers from a physical condition rather than a mental one. British Pakistani women who suffered from a mental condition and were unaware at the time, reported to their GP of physical symptoms which were mainly linked to postnatal bereavement and miscarriage. With the GP being able to acknowledge these circumstances, a mental condition could be easily identified (Gask et al. 2011). However, without the physical illness many GPs would be unaware of the mental health issue. The lack of mental health vocabulary and understanding prevents many South Asians from being fully aware of their mental status. The study also suggests that many South Asians don't willingly go to a medical professional for a mental diagnosis but instead a physical diagnosis indicating that they are either unaware and stigma is preventing them from initially seeking mental help from the Medical Professional (Gask et al. 2011).

## General Practitioners

General Practitioners (GPs) provide a gateway for many support systems and play a prominent role in formal help-seeking. In a parent's route to recovery the GP is the first person they will see who will have the initial indication regarding whether or not the parent may have a mental condition. They will be referred to another medical profession such as a psychologist who has a better skill set in treating the mental health condition. A psychologist has the ability to support a parent in coping more effectively with life issues as well as mental health problems. A psychologist can formulate a relationship where the parent feels comfortable talking about any specific issues thus, dispelling original ideas of 'isolation' (Gask et al. 2011). Parents become more self-aware and educated about the mental illnesses and begin to acknowledge the steps needed to overcome the problems. In addition, therapists provide an alternative to talking to someone other than the family or community, specifically if relations with family and community aren't strong or the parent doesn't feel comfortable with appropriately discussing their feelings. Support groups also improve parents' perceptions of mental health. Talking about issues with other parents helps dispel ideas of isolation because parents will begin to see that other parents are struggling with the same issues.

## Conclusion

In reality, there is a wide range of support available for ethnic minorities, however, mental health stigma along with mental health literacy prevents parents from accessing help. Mental health services are not adequately meeting cultural and religious needs. Health professions and key organisations such as MIND and the National Health Service (NHS) can improve their approaches to promote the wellbeing of South Asian parents with mental illnesses by making the services more accessible, as well as understanding the main routes taken by parents (Nicholson, 2004). Insufficient mental health literacy prevents parents from effectively communicating to others how they feel without the fear of being labelled 'mad'. It is vital that mental health stigma is addressed and challenged in order to fully support parents from ethnic communities. Their wellbeing is vital not only for themselves but for their children as well.

## References

Artkoski, T. and Saarnio, P. (2013) Therapist's gender and gender roles: Impact on attitudes toward clients in substance abuse treatment. Journal of Addiction, vol. 2013, Article ID 591521, 6 pages, 2013.

Bem, S. (1974) The measurement of psychological androgyny. Journal of Consulting and Clinical Psychology, vol. 42, no. 2, pp. 155–162, 1974.

Bhugra, D. (2004) Effect of an educational pamphlet on help-seeking attitudes for depression among British South Asian women. Psychiatric Services, Volume 55 Issue 7, July 2004, pp. 827-829

Bhugra, D., Desai, M., and Baldwin, D. (2002) Attempted suicide in West London: Rates across ethnic communities. Psychological Medicine Volume 29, Issue 05, September 1999, pp 1125-1130.

Cole, B. (2013) An exploration of men's attitudes regarding depression and help-seeking. Open Access Theses and Dissertations from the College of Education and Human Sciences. Paper 171.
Depression and anxiety. Palo Alto Medical Foundation. http://www.pamf.org/southasian/risk/concerns/depression.html
Gask, L., Aseem, S., Waquas, A., and Waheed, W. (2011). Isolation, feeling 'stuck', and loss of control: Understanding persistence of depression in British Pakistani women. Journal of Affective Disorders, 128, pp. 49-55.
Hussain, F. and Cochrane, R. (2004) Depression in South Asian women living in the UK: A review of the literature with implications for service provision. Transcultural Psychiatry June 2004 vol. 41 no. 2 253-270.
Jorm, A. F. (2011) Mental health literacy: Empowering the community to take action for better mental health. American Psychologist. Advance online publication. doi: 10.1037/a0025957
Nicholson, J. and Biebel, K. (2004) Commentary on Community Mental Health Care for Women with Severe Mental Illness Who Are Parents - The tragedy of missed opportunities: What providers can do. Community Mental Health Journal, Volume 38, Issue 2, pp 167-172.
Rickhood, D., Thiomas, K., and Bradford, S. (2013). Help-seeking measures in mental health: A rapid review. The Sax Institute, Australia.
Shariff, A. (2009) Ethnic identity and parenting stress in south Asian families: Implications for culturally sensitive counselling. Canadian Journal of Counselling 2009, Vol. 43:135
Wheeler, E. (1998) Mental illness and social stigma: Experience in a Pakistani community in the UK. Gender and Development Vol 6, No.1, March 1998, pp.37-43.
World Health Organisation, The State of mental health. August 2014 http://www.who.int/features/factfiles/mental_health/en/

## About the authors

S. Ubong is in Year 12 at St. Angela's Ursuline Sixth Form. She aspires to have a career in Medicine. She loves to join debates which further improves her communication skills. Natalia Sali is a third year PhD student at the College of Social Work in Royal Holloway University of London.

## PhD Tutor's note

I enjoyed S.'s essay as it is properly researched and is written very well. I admire her tenacity and resourcefulness. She had managed to fulfil the requirements of the course (written assignments, oral presentations, and final essay) with due diligence and enthusiasm. All throughout the course, she showed her interest to learn about mental health and how she could improve her academic writing. I am sure you will enjoy reading her paper.





# AN ANALYSIS OF THE INTERRELATEDNESS OF CONCEPTUAL FRAMEWORKS WITHIN THE CONSTRUCTION OF DISABILITY, WITH PARTICULAR REFERENCE TO DISCOURSES AND SPECIAL EDUCATIONAL NEEDS.

**J. Kinton, supervised by D. Robinson**

## Essay Abstract

This essay critiques the social model of disability calling for a more complex account of how impairment interrelates with the environment. It draws on the work of Tom Shakespeare and calls on a wider range of theorists to explore why purist accounts of origin may not serve us well in understanding disability within its social context.

## Essay Body

Disability studies focuses on analysing disability from multiple perspectives in society (for example, how disabled people are represented in the media, literature and politics) as opposed to the biological study of disability in medicine. This discipline also explores how disabled people are treated and perceived sociologically, and works to understand the barriers which they may face. Barnes (1997) grouped the generalized explanations as to why disabled people face prejudice into two categories: the psychological fear of the abnormal, and the idea that disabled people cannot contribute to the economy. Thus, disability studies strives to research these explanations for discrimination and equality in pursuit of a fairer world. Within this area of study there are also theoretical models which attempt to explain the construction of disability, for example the medical model focuses on the impairment of the individual, whilst the social model centres on the environment (Trussler and Robinson, 2015). In this paper, the social model and the medical model will be explored in depth in relation to special educational needs, with appropriate connections to the tragedy model, the rights model and normalisation.

It could be argued that the social model is the most optimistic theory within disability studies given its character as resistant to oppression. Jaeger and Bowman (2005, p.10) describe how the social model views disability as a "result of external factors imposed upon a person rather than the biological functions of a person". As a typical example, a person in a wheelchair using a ramp may not be disabled, but when faced with a set of stairs their impairment returns as an issue, so the environment has become disabling. In this instance, the example is representative of how impairment and disability are not regarded as synonymous, but as distinct concepts within the social model. Within education, teachers who adopt views/practices relating to the social model may be referred to as interventionists. In their study of the attitudes of teachers towards disabled students, Jordan et al. (2009, p.528) argued that interventionists believe they are "responsible for reducing barriers to access for those students with disabilities and special needs" (values synonymous with the social model). Jordan et al. (2009) also suggest that these beliefs result in disabled students making more progress because they are taught in a more interactive, engaging manner. However, there could be other factors which have influenced this result; Jordan et al. (2009) conducted their research by observing the classroom teaching of core subjects, but it could be argued that parental support or the involvement of extra teaching assistants could have significantly affected the children's achievement rather than the teacher's attitudes. Hence, though Jordan's study is credible it does have shortcomings.

Arguably, it is not hard to understand why some academics and disability rights activists welcome the social model. In fact, the government has incorporated the social model into their legislation by explaining a learning difficulty as "[a child who] has a disability which prevents or hinders him or her from making use of facilities of a kind generally provided for others of the same age in mainstream schools" (Children and Families Act 2014 Part 3, Clause 20). This is an example of how the social model has been integrated into policies and practices that focus the attention on facilities provided rather than on the individual, such as specialist teachers and purpose-built schools which have been provided for disabled children. Although, some would argue that the segregation of SEN (special educational needs) students is not beneficial because whilst they may experience less bullying, be given more attention and not negatively impact the learning of other students, there is some evidence which suggests that inclusion is a better approach. Jordan et al. (2009) argue that the inclusion of SEN students in regular classes improves their test performance and attendance when compared to their peers in segregated schools. Nevertheless, this modification of facilities is the key benefit of the social model; it challenges the general perception of disability and shifts the focus back onto society by liberating disabled people. Shakespeare (2006. p.2) argued that disabled people "didn't have to feel sorry for themselves", which is a rejection of the discourses of the tragedy model which suggests that disability is a terrible event which could happen by chance to any unfortunate individual (Oliver, 1990). For instance, disability charities which intend to evoke sympathy in the public could induce an element of self-fulfilling prophecy in a disabled person, making them feel pessimistic towards their situation. However, since its conception the social model has given hope to disabled people, perhaps because removing certain barriers within an environment seems less oppressive than removing a genetic disorder from the human species.

Despite this, it could be argued that the social model it is in danger of being seen as a romantic ideal on the basis of its purist naivety. Before the more complex issues surrounding the social model are analysed, its physical impracticalities should be addressed: can a ramp be installed on Mount Everest? Shakespeare (2006, p.45) uses this point to argue that barriers will never be fully removed because every environment cannot be changed: "people with impairments will always be disadvantaged by their bodies; they will not be able to climb every mountain". This statement is hard to dispute because some natural environments cannot be altered in order for them to be suitable for disabled people. Although Shakespeare (2006) makes this reasonable point, it is based on the assumption that the social model is calling for every environment to be changed. Whereas it could be argued that only the essential environments need to be changed in order to dramatically improve the daily lives of disabled people. As an example, every child does not have the automatic right to climb Mount Everest, but they do have the right to an education in accessible surroundings (an illustration of how the rights of disabled people have improved, possibly as a result of the social model, because in the past children with mental impairments did not have this right).

Furthermore, aside from environmental barriers, there are structural and attitudinal barriers which the social model might acknowledge. Swain et al. (2003) used examples such as the fear of difference, uninformed assumptions, and discriminatory services with regard to disability. It could be said that these barriers are even harder to remove than physical ones, because they have been embedded into society. A change in norms and values may be needed to diminish these views, which could not happen overnight. Additionally, Shakespeare (2006, p.33) argues that "other social movement ideologies such as feminism have developed over time" whereas the social model has not and it should be "revised or replaced if it becomes outdated", since it hasn't evolved since the 1970s. If feminism had not changed since the 1970s, the movement would have stopped when women were given the entitlement to equal pay. However it did not because new challenges arose, and the social model should also evolve because there are still issues that disabled people face within society that cannot be tackled by looking towards environmental factors. Is it possible for the social model to call for a change in attitudes when the theory itself has not changed for over 30 years (Shakespeare, 2006)?

Shakespeare (2006, p.38) also critically analyses the uses of the terms 'impairment' and 'disability' within the social model, arguing that "it is necessary to have an impairment to experience disabling barriers". Commonly, the social model distinguishes between theses terms however this could be impractical because there is usually a relationship between the two. For example, a visually-impaired person without their assistance dog may be experience a disabling barrier, but without their impairment

this barrier would not exist anyway. As such, perhaps the social model should incorporate the impact of medical impairments into its policy as part of its evolution. Wendell (2011, p.40) also explains that "the biological and social are interactive in creating disability...social arrangements can make a biological condition more or less relevant to almost any situation". Therefore, it could be argued that in certain circumstances the social model should not only focus on environmental, attitudinal and structural barriers, but also on the impairment as a barrier itself.

The social model was initially put forward as a flexible alternative to the medical model. Trussler and Robinson (2015, p.15) describe the medical model as "[placing the cause of difficulty] within the individual in terms of physical, cognitive, psychological, mental or neurological deficits in function", a definition which also encompasses many of the medical model's typical discourses. Other discourses from this model include: specialist, disorder, condition, abnormality. Arguably, as a society we tend to associate these discourses with a sense of trust and scientific fact, however some disability academics argue that discourses have been embedded into society by the sovereignty in order to sustain oppression (so medical fact may not necessarily be the truth). As these discourses were brought into question, the social model emerged and began to challenge them.

Not only is it possible that the dominance of the medical model in education has been detrimental due to its terminology not being strictly correct, but also because it has altered teaching attitudes. Jordan et al. (2009) argue that teachers who believe that disability is attributable to an individual's impairment generally use less engaging teaching methods, expect parents to help SEN students keep up, and don't regard themselves as being responsible for students' progress (the pathognomonic perspective, the antagonist to the interventionist perspective). As such, this may have led to the medicalisation of learning difficulties. At first glance, this may not appear to be a problem if we regard learning difficulties as a medical impairment, however some learning difficulties may not be biological at all. For example, Trussler and Robinson (2015, p.18) argue that under the social model "dyslexia would not be regarded as a deficit but as a natural human difference that only becomes a problem when teaching styles and curricular approaches are incompatible with learning pace, preferences and capabilities of dyslexic learner". This is an important consideration because conditions such as dyslexia and ADHD have only recently come into existence as teaching practices have become more directed towards educating the majority. Therefore, it could be possible that learning difficulties are a result of social issues which have been medicalised in order to divert the attention away from ineffective teaching and towards individual children. For instance, it is possible that our cultural preference for students who can be taught in large groups (due to strains on resources) has led to the behaviour of children with ADHD being regarded as problematic, rather than ineffective teaching methodology (linking to normalisation which will be explored further on in the paper).

Despite this shadow of doubt thrown over certain disabilities as not being biological conditions, nevertheless in society they are treated as such. For example, when claiming disability benefits, disabled people are referred to a doctor to be examined. Arguably, this is not beneficial because the power should be given back to disabled people rather than the medical professionals. As an example, Oliver (1990, p.3) argued that "doctors are socialised by their own training into believing that they are 'experts' and accorded that role by society" and "[doctors] appear bewildered when disabled people criticise or reject this imposed treatment". This view could be too simplistic because one would assume that in a medical emergency, such as a heart attack, doctors are the experts and it would be foolish to contradict that. However, in the case of caring for disabled people on a long term basis it could be argued that doctors are not the most appropriate people for the job because after years spent at medical school and countless training exercises doctors feel obliged to do something. This could become problematic when the treatment is not required nor requested. This links to the rights model of disability, which argues that if disabled people were more empowered and given more equal opportunities they would be able to release themselves from oppression. This may be the case, however simply having rights may not remove the negative discourses surrounding disability because the rights need to be properly managed and enforced. Also, the claim that disabled people do not have control over their treatment could also be disputed, because all patients have to consent to their procedures, except in medical emergencies.

Additionally, it could be unfair to fully condemn doctors for wanting to treat their disabled patients because if this did not happen then the healthcare profession would not have many medical interventions which are considered essential. As an example, if the doctors of the past had not created prosthetic limbs because they already had wheelchairs, then amputees today would be leading very different lives. Even within the parameters of the social model, it is recognised that treatments for impairments should continue to be explored so they do not become "irrelevant responses to the true problem of disability" (Shakespeare, 2006 p.30). Although, this is where the existence of the tragedy/charity model could become necessary because considerable funding is needed to continue medical research. Arguably, this funding comes at the price of disabled people being labelled as 'sufferers' and deserving of pity, which could lead to a sense of disempowerment.

Oliver (1990) believes that the medical professionals' compulsion to treat is associated with their training in an attempt to normalise their patients. However, it could be argued that normalisation has a much wider impact than this on both the medical and social models. Davis (2013, p.6) argues that "the problem is not the person with disabilities; the problem is the way in which normalcy is constructed to create the 'problem' of the disabled person". This could indicate that as a society we have normalised our environment in order to suit the majority, and as a consequence disabled people have emerged as a group who cannot comply to this, so they have become a 'problem'. Hence, it could be said that the social model is trying to deconstruct normalcy. After all, it could require a social theory to tackle a social phenomenon, because it is argued that normalisation is not inherently human, but rather a sociological concept which has developed over time, particularly when eugenics arose in Europe (Davis, 2013). It may be possible that as the state attempted to "norm the non-standard" and "eliminate defectives" (Davis, 2013), the medical model also emerged to achieve the most physically 'normal' population possible.

It could be suggested that society has attempted to normalise the population not because of a psychological fear of difference, but for calculated, economic reasons. Davis (2013, p.2) references Marx, who saw "the perfectibility of the human body a utopian hope for economic improvement", indicating that it is more financially viable to have a standardised workforce, and that disabled people have little to contribute to this. This links to Barnes and Mercer (2011, p 12) who put forward that "in capitalism the embodied characteristics of certain individuals disqualify their claims to social legitimacy, and therefore the social construction of abnormality is legitimised". This could suggest that (in the eyes of capitalism) people with a significant impairment cannot contribute effectively to the economy, so in order for them to be accepted in society that have been assigned to a different category in order to excuse them from this (i.e disability). Arguably, it is not unfair to attempt to normalise the population in order to increase the productivity and economic stability of the country. However, extreme cases of this (such as the abortion of babies with Down's Syndrome) should be treated much more cautiously because in an ideal world economic advantages should not take precedence over ethical considerations. Even in civilised, developed societies this ideal is not always achieved. Also, by physically normalising a workforce you are not eradicating the presence of mental illnesses, for example stress or depression, which could be just as detrimental to productivity. Additionally, this argument assumes that disabled people have little to contribute economically, however this is not necessarily correct because in many cases disabled people can thrive in their career and it could be beneficial to have this diversity in society.

The way in which the government try to manage the public, via processes such as normalisation, is sometimes referred to as bio-power (Foucault, 1976). In the case of disability, government interventions designed to improve the lives of the general population such as welfare benefits, home-help services and special educational needs programmes, may have led to disabled people "emerging into discourse and social existence" (Tremain, 2005 p.5). Essentially, these measures could have signalled to the rest of society that disabled people are different which has led to their marginalisation. It may have also enabled disabled people to identify themselves by this classification too (Tremain, 2005). Consequently, this may have caused disabled people to be subjected to "stigmatisation and economic deprivation" (Barnes and Mercer, 2011). Hence, it could be argued that in the government's attempt to improve living standards, disabled people have just fell even further into a state of segregation and oppression. Despite this, it could be suggested that normalisation in itself is not bad for society. For example, we need normalisation in order to share the universal norms and values that serious crimes are unacceptable. However, in the case of disability we should consider normalisation more carefully and accept the idea that cultural diversity may not be a weakness.

In this paper I have suggested that the use of medical discourses within the teaching of special educational needs students may be inappropriate and that the social model may be more effective in order to liberate disabled people and deliver better quality teaching. However, the social model also has weaknesses which should be addressed in the near-future in order to remove all forms of barriers, and by endorsing the social model we should not allow appropriate medical interventions to be left in the dark. Overall, the rights model and tragedy model also have a role to play in the de-stigmatization of disability. Perhaps charities should celebrate disabilities in an attempt to empower those that need help, because a positive, hopeful media campaign may raise just as much money as a sympathetic, patronising message. Finally, as a society we should not be apathetic towards normalisation, but rather consider when and why it could be beneficial, especially when this is at the cost of the oppression of disabled people.

Having spent a considerable amount of time discussing the social construction of disability, my views of disability have now changed. Firstly, I now realise that I used to view some types of disability with inexplicable caution because I hardly ever came into contact with people with particular conditions, such as severe learning difficulties. However, after watching the video of Alice in our first tutorial, I realised that children with special educational needs are just trying to learn like I am, albeit at a slower pace. Studying the social model was particularly interesting for me because I previously thought that impairment and disability were synonymous with each other. As someone with a primarily scientific mind, I hadn't considered before that environmental barriers could be just as disabling as a medical condition, so it was intellectually stimulating to have this opinion challenged.

During the tutorials I was also particularly struck by Davis' analysis of normalisation. According to Davis (2013), our whole population is ranked on various factors (such as intelligence, height etc.) with every individual striving to rank somewhere in the middle (the norm). I found this intriguing because I could relate it to my everyday life. For example, I realised that in most situations I subconsciously try to conform to normalcy, however in terms of other factors such as intelligence I hope to do better than the norm. In relation to disability studies, I have also discovered that the classification of disability wouldn't exist without normalisation because any variation of difference would be accepted regardless.

Furthermore, from an outsider's perspective of disability studies, I would argue that the social construction of disability may have been subjected to excessive analysis. Shakespeare (2006) believes that the social model is too focused on the 'correct' use of terminology, arguing that we shouldn't "quibble over 'disabled people' versus 'people with disabilities'". Arguably, this could be said for the medical model too because I don't believe its discourses such as 'speciality' or 'condition' are inherently harmful if they are used appropriately. I would say that it has been beneficial for academics to analyse the discourses and models of the social construction of disability, but their application is more important.

## References


Barnes, C. (1997). A Legacy of Oppression: A History of Disability in Western Culture in Barton, L. and Oliver, M (eds.) Disability Studies: Past, Present and Future. Leeds: The Disability Press, pp3-24.

Barnes, C. and Mercer, G. (2011) Exploring Disability. Cambridge: Polity.

Davis, L. (2013) Introduction: Normality, Power and Culture in Davis, L. The Disability Studies Reader. London: Routledge pp. 1-14.

Foucault, M (1976) The History Of Sexuality Volume 1. Éditions Gallimard pp. 144.

Jaeger, P.T. and Bowman, C.A. (2005) Understanding Disability: Inclusion, Access, Diversity, and Civil Rights. New York: Greenwood.

Jordan, A.,Schwartz, E. and McGhie-Richmond, D. (2009) Preparing Teachers For Inclusive Classrooms. Teaching and Teacher Education. 24(6), pp.204-227

Oliver, M. (1990) The Individual and Social Models of Disability. Joint Workshop of the Living Options Group and the Research unit of the Royal College of Physicians 23rd July 1990, available at: disability-studies.leeds.ac.uk/files/library/oliver-in-soc-dis.pdf (accessed June, 2015).

Shakespeare, T. (2006) Disability Rights and Wrongs. London: Routledge. pp. 30-53.

Swain, J., French, S. and Cameron, C. (2003) Controversial Issues in a Disabling Society. Buckingham: Open University Press.

Tremain, L. (2005) Foucault and the Government of Disability. Michigan: University of Michigan Press, pp. 5-6.

Trussler,S. and Robinson, D. (2015) Inclusive Practice in the Primary School. London: Sage.

Wendell, S. (2011) The Rejected Body. New York: Psychology Press.


## About the authors


J. Kinton is a Year 12 pupil at Heanor Gate Science College. She is currently applying to do a medical degree at some of the top UK universities. As a scholar she is hard-working, astute and keen to learn about the implications of disability theory to her work as a future medic. Dr Deborah Robinson is a Senior Lecturer and Researcher in the area of Special Educational Needs and Inclusive Education at the University of Derby. She is currently working with the Department for Education to research the impact of recent reforms to provision for children and young people with SENDs.


## PhD Tutor's note

J.'s essay was a very cogent and critical analysis of the complexity of disability theory. She didn't just describe the concepts of 'models of SEND' but constructed an essay designed to critique over-simplified accounts of the origins of disability. Her engagement with key texts was astute and she writes with real clarity. Her argument unfolds in a steady yet erudite way and is a pleasure to read, being clear yet academically complex.

I enjoyed working with all of the pupils at Heanor Gate. I truly believe that it was the best thing to come out of my doctorate! All of the students presented excellent work which showed deep understanding and I was proud to see so much learning, particularly in their ability to be critical and tentative – both being essential academic stances in the social sciences. Working with these scholars moved my thinking on too and I learned from them.

Photo credits

Última Cena - Da Vinci 5, Quibik, courtesy of Wikipedia, Public Domain
book-701758_640, ChristopherPluta, courtesy of pixabay, CC0 Public Domain
George Charles Beresford - Virginia Woolf in 1902, Adam Cuerden, courtesy of Wikipedia, Public Domain - PD-70
Fresco of woman with tray in Villa San Marco retouched, AlMare, courtesy of Wikipedia, CC BY-SA 3.0
Extracellular vesicle derivation and size range, courtesy of Joshua Welsh
Synapse diag1., Mouagip, courtesy of Wikipedia, CC BY-SA 3.0
CL0024+17, Tryphon, courtesy of Wikipedia, Public Domain
Netherlands, The Hague, International Criminal Court, Loranchet, courtesy of Wikipedia, CC BY-SA 3.0
Astrological signs by J. D. Mylius, courtesy of Wikipedia, Public Domain
Inadequacy, Insecurity, johnhain, courtesy of pixabay, CC0 Public Domain
The Standard Model of Elementary Particles_MissMJ_courtesy of Wikipedia, CC BY 3.0
M33 rotation curve HI_ Stefania.deluca, courtesy of Wikipedia_ Public Domain_CC0 1.0
Astrology circle_Katie Holmes, after Neyro, 2008
Astrology geos_ courtesy of Meetup

# The Scholar

The Brilliant Club