

THE HARROVIAN

VOL. CXXXIII NO.15

February 27, 2021

HARROW 450

"Times change and we change with them" – William Harrison

Change is once again returning to the Hill, this time in the form of an ambitious project dubbed "Harrow 450". Inspired by the upcoming 450th anniversary of Harrow's founding in 1572, this £100 million programme aims to modernise many of our School facilities, including the Shepherd Churchill Hall, the Science Schools and the Sports Centre. In order to fully assess this massive change to the School infrastructure, members of our editorial board sat down with Mr Wayne Simpson, the leader of the project, who helped to illuminate the various impending changes.



It seems fitting to begin with the changes to the building closest to the average Harrovian's heart: the dining hall. The current SCH was originally built in 1976, out of brick and concrete, meaning that its infrastructure and format was designed with practices that are over 40 years old; this means that it often becomes difficult for the SCH staff to produce the daily 3,500 meals necessary to feed both pupils and staff. The planned renovation of the SCH, which begins work in August and will take at least two years to finish, aims to modernise the building, creating a better environment for both the boys and the SCH staff. The storage capacities of the building will be increased by 40%, removing the School's reliance on daily delivery; this makes the SCH more food secure and reduces the amount of traffic on the Hill. The food serveries will be moved to the centre of the building and doubled, meaning that boys can be served quickly and avoid the current mob-like queues; Mr Simpson stated "[boys] will have much more time to eat together". By creating more space and renovating the building, the SCH staff will also have more space and have removed "the struggle...to work and operate in cramped conditions". By installing more modern technology and significantly improving the buildings thermal efficiency the SCH building will be more energy efficient, providing energy from sustainable and renewable sources. Furthermore, the School plans to help offset this £20 million investment by converting the SCH into a more commercially competitive conference location; by extending the

building and installing the potential for folding walls, enabling the building to be compartmentalised into separate dining areas, including a space which will cater for a year group of 180 pupils, "providing not only benefits for the community but bang for our buck". All in all, the proposed changes to the SCH will make Harrow dining an altogether "much more efficient and much more pleasant environment".



STEM enthusiasts will be pleased to hear that part of the project involves the building of a state-of-the-art science building for Biology and Chemistry. Construction is due to start at the end of August and is estimated to finish by spring 2023. The new building will have much-improved facilities, allowing science teachers to teach more effectively and to perform more complicated experiments with their students; Mr Simpson stated that "they are leaps ahead of anything we could imagine". Furthermore, inside the building, there will be a brand-new lecture theatre with a 180-seat capacity which will host events previously confined to Speech Room and the Ryan Theatre. This new lecture hall, in addition to the much improved facilities, will massively help student learning and give the new Science Schools a "university feel". The new building will also be home to a brand new "energy centre", which will provide heating and hot water not only to the building itself but also to SCH and the Sports Centre.

The more athletic of our readership will be glad to know that a proposed renovation to the Sports Centre forms part of the plan. Due to various construction complications, work on the building cannot start until the new Science Schools have been finished, meaning that the earliest work can possibly begin is late 2023 making the earliest possible completion date in 2025. The new Sports Centre will contain two sports halls and a swimming pool, along with "facilities beyond imagination". Furthermore, Harrow has drawn up a community use agreement, meaning that the local community can also take advantage of the improved facilities, helping to fulfil our charitable goals. However, it should be noted that the construction of the Sports Centre has not been finalised; the Harrow Development Trust, headed by Mr Douglas Collins, is still searching for the remaining funding.

Another key part of the development is the construction of various thoroughfares and roads throughout the Hill, aimed at making the movement of boys between buildings convenient and safer. The first change that many boys will notice is the construction of a new access road from the Watford Road to the back of the SCH, allowing construction and delivery vehicles to access the SCH and the wider Hill without clogging up the

High Street; work on this road started on the 15 February and is due to end in July 2021. Furthermore, the project will install a variety of thoroughfares throughout the Hill, including a new axial staircase from the Chapel Terrace to the sports facilities; this will run through Peel House, whose demolition will no doubt provide catharsis to those suffering Surface headaches; the IT Department will be relocated to the current Science Schools. Knoll Lane will also be made a pedestrian priority zone, with the vehicular traffic being focused into Garlands Lane. This removes the danger of boys interacting with cars and “allows them to connect more efficiently and more quickly to our buildings”. The avid ramblers in our readership should not worry; deliberate care has been taken to maintain public paths, though some will be temporarily diverted to avoid construction-related incidents.

Unlike most other things, these projects have not been greatly affected by the impact of COVID-19. Due to Government prioritisation of construction, even during lockdown, everyone involved is safe and well. Throughout construction, Covid-safe precautions will be introduced that will affect productivity during construction but will ensure the workforce can work safely and effectively. Each new building will contain lifts, providing step-free access, meaning that they “will consider disability to the nth degree”. Furthermore, those worried about the environmental impacts of the project should be calmed by the knowledge that the proposals “have eclipsed [building regulation standards]”, including the London Plan; for example, the SCH will be fitted with photovoltaic (solar) panels and the new science building is set to achieve “BREEAM excellent”.

In summary, Harrow 450 is a glimpse into Harrow’s future, bringing us a changing landscape for the changing times. It creates updated facilities, safer travel and greater efficiency, all resulting in a better experience for both boys and staff. Mr Simpson believes that this project will “for time immemorial be celebrated as an important chapter of Harrow history” and “will respect the character and the heritage [of the Hill]”. Though this writer will not be there to welcome it, he nevertheless agrees.

TREVELYAN SOCIETY

Jack Hedley, *The Head Master’s*, “*The American West*”,
9 February

On Tuesday 9 February, a collection of School historians met for the first meeting of the Trevelyan Society this term, to hear a talk from Jack Hedley, *The Head Master’s*, on ‘The American West’. In what proved to be an interesting and insightful talk, Hedley went through how the frontier culturally, politically and economically shaped the identity of what we know as modern America.

To begin with, Hedley explained the concept of what “the frontier” was. The frontier was what was considered to be the boundary line of “civilised” America. Though not formally marked by any physically indicative signal, it came to describe the limits of American settler migration and colonisation. It was a reasonably lawless place of individual rule, turning settlers into true American cowboys. Many historians would in fact argue that the shifting frontier is a classic example of environmental determinism, with settlers having to migrate in order to survive.

Before the Mexican-American war, there were a couple of key events that led to an increased interest in the frontier. First of all was the concept of “manifest destiny”, a belief that American settlers had the right (and indeed the responsibility) to move West in order to spread democracy, capitalism and the conceptualisation of the American Dream. But moving from

the ideological to the political, the Native American Removal Act of 1830 also legalised the granting of lands West of the Mississippi, expanding American borders. Finally, there were economic factors at play. On 24 January 1848, James W Marshall found gold at Sutter’s Mill in California, leading to increasing migration from plucky individuals who were hoping to make a quick fortune from the area’s natural resources.

This migration happened along the route of the Oregon Trail, a route that allowed migrant caravans to move across the United States. However, this early movement was not nearly as glamorous as it seems today. Many of the settlers faced disease, particularly along and around the Platte River and many didn’t make it to their destination.

Another complication for the Americans was challenges from both Mexico and the Native American populations.

Following the annexation of the Republic of Texas by President Polk, Mexico felt it had no choice but to challenge the United States on the battlefield, leading to the Mexican-American War of 1846. Although the United States decisively won the conflict, it led to heavy casualties on both sides. However, the Americans did manage to secure California (including the strategically important port of San Francisco) and Texas for the foreseeable future.

There were also a series of conflicts with the Native American populations, known as the Indian Wars. Among these was the Sioux War of 1865 and Red Cloud’s War, which lasted from 1866 until 1868. However, these were less successful for the United States. Although there were some notable victories, there were also some major failures. One example of these failures was the Battle of Little Bighorn in 1876, an instance often romanticised in popular culture as the last stand of George Armstrong Custer, a veteran of the American Civil War who was widely regarded as an American war hero.

Hedley then went on to talk about one final advisory of the United States government at the time, the Comanche Empire. Made up of natives who lived on the Great Plains, the Comanche people managed to survive through their quick adaptation of the horse for use both in battle and in hunting. However, they met their downfall in coming to be overly reliant on hunting the buffalo and bison, which, through overhunting, quickly came to be endangered.

By the 11th US Census in 1890, the frontier was officially declared as closed. Although the period of exploration was had formally ended, the legacy of the frontier culture has lived on through books, films and television shows, becoming engrained in our modern culture.

Thanks must go to RP and Hedley for hosting this excellent lecture.

THE ITALIAN SOCIETY

Alexander Newman, *Druries*, “*The Italian Imperial Dream: Its Failure and Its Legacy*”,
11 February

The Italian Society had the privilege of hosting Alexander Newman, *Druries*, who delivered a lecture on ‘The Italian Imperial Dream: Its Failure and Its Legacy’.

The story of the Italian Empire begins in 1861 with the Unification of Italy. When Italy became unified, it was believed by its citizens that it deserved a major overseas empire, like the other European powers. Many Italians saw areas of the Mediterranean that had been taken over by the Ottoman Empire as rightful Italian lands that had been taken away from the Roman Empire. By the time it founded its empire, many profitable and economic lands in Africa and Asia had already

been taken, so Italy decided to set its sights on Ottoman provinces, being weaker than the French and British imperial possessions. Furthermore, there were large Italian diasporatic populations in many Ottoman territories.

Coincidentally, the French seemed to be making moves on Ottoman territory as they set up a protectorate in Tunisia in 1881. This angered Italians as they felt this land was theirs, and the event was dubbed 'the Tunisian bombshell' by Italian newspapers. In 1882, in an attempt to integrate themselves more with the rest of Europe, Italy signed the Triple Alliance with Germany and Austria-Hungary and began to look for land and colonies that hadn't yet been taken over. In 1885, they made an agreement with the British to take over the Port of Massawa in Eritrea. Britain saw an opportunity to work with Italy as an opportunity to gain another ally and prevent French expansion.

Ten years later, the Italian prime minister Francesco Crispi ordered an invasion of Abyssinia. However, this was a failure, with 500 soldiers being killed. From that point onwards, the Italians had a fixation with Ethiopia, feeling they had to settle a personal score. The next prime minister, Antonio Starabba, negotiated a treaty that gave them control of Eritrea and Ethiopia as a protectorate. Starabba ordered the Italian troops to go into Ethiopia to get more territory, but they were defeated again, adding to the humiliation of the first defeat.

At the start of the 20th century, a wave of nationalism began in Italy and the Italian Nationalist Association was founded, which pressed for a new Italian empire. Lots of newspapers started writing about the goal of achieving an empire, and there was a lot of nostalgia for the Roman Empire. It was suggested that Libya should be taken back by the Italians and should be used to settle Italians, as South Italy had a large overpopulation problem. In October 1911, the Italians declared war on the Ottomans and gained Libya, as well as the Dodecanese Islands.

In 1922, Benito Mussolini became prime minister as a result of a coup d'état, and he was certainly very imperialistic. He declared himself the Duce of Italy, a phrase coming from the Latin "dux", meaning leader, which is what Julius Caesar called himself when he declared himself dictator of Rome. This was Mussolini role-playing and satisfying the Italian desire to revive the Roman Empire. He signed a treaty legalising Italian ownership over Libya and the Dodecanese, for which they paid Turkey. He attempted to take parts of the Middle East from Britain such as Iraq, after the fall of the Ottoman Empire, but failed. He then invaded the Greek island of Corfu after the alleged murder of an Italian general there. Many supported this because Corfu had been a possession of Venice for 350 years. Greece took this to the League of Nations, but Mussolini refused to back out of Corfu. It was only the British threat of invasion that convinced him to leave Corfu and withdraw the Italian troops. It established the Italian empire as a serious threat and a significant player on the world stage, to the point that, after the end of World War 2, Italy was one of the veto states in the League of Nations. Because of Corfu and Italy's determination to never give up Libya, Britain decided to give Italy the Somaliland, which was merged into Italian Somaliland. The two would eventually merge to form Somalia.

From 1929 onwards, Mussolini really pushed for the Italian empire to expand, and was blatantly inspiring aggression in his citizens, arguing that colonies were necessary both economically and to solve the population problem. He saw himself as someone like Julius Caesar, who would bring glory to Italy. It is ironic, then, that he was killed in a similarly brutal way.

In 1939, Italy captured and invaded Albania and turned it into a protectorate, saying they owned it as it was part of the Roman Empire. Mussolini simply wanted a spectacular success over a smaller nation to match Germany's annexation of Austria and the Sudetenland. Mussolini was concerned Germany was becoming a threat and so wanted to make sure Italy still had some power. The Albanian government still continued to function relatively normally, but a fascist government was installed. Furthermore,

as World War 2 broke out, Italy began to absorb the armies of its colonies to create one large army.

On 10 June 1940, Italy entered the war against the Allies. Mussolini's troops played a massive role on the Western Front, fighting against France. Vichy France then gave up Nice and parts of the Savoy to Italy. Seeing much of the power and glory Hitler was getting, Mussolini tried to invade Greece in October 1940. Italy also attempted to take parts of North Africa and claim areas such as Sudan as well as French colonies like Algeria and French Somaliland. However, in the country itself, the people were suffering as more and more as they fell into poverty. Socialist groups began to rise up as a result.

Mussolini attempted to escape to Germany but he was captured by a group of Socialists who shot him and hung up his corpse to be maimed in a public square. As a result of this, the Italian empire effectively collapsed at the end of 1943. The new Italian government began to create negotiations with the Allies. From this point onwards there was a dismantling of the empire. A treaty of peace was signed in 1947, and many of the territories were turned into UN Trust territories. Italian Somaliland was granted its independence in 1960 and it joined British and French territories to form Somalia, marking the end of Italian colonialism.

PIGOU SOCIETY

*Mr Daniel Austin, "Experts in Property Finance",
10 February*

Mr Daniel Austin's (*Rendalls*, 1987) Pigou Society talk on Wednesday 10 February drew an audience of more than 60 people. The talk was titled 'Experts in Property Finance' but, in addition to property finance, he spoke in depth on the significant economic events since the late 1980s. Mr Austin began by recalling his time studying economics at Harrow, which coincided with the end of the Thatcher years. He highlighted how governments and chancellors had been obsessed with interest rates and inflation; an indication that this period was a totally different era is illustrated by the fact that interest rates reached 15% in 1989 whereas interest rates sit at 0.1% now, and have been under 0.8% since the global financial crisis. It was rather striking to consider that saving could generate 15% annual returns, whereas in today's macroeconomic setting, much larger risk would be involved in generating returns of that sort.

Mr Austin mentioned how the UK transitioned from its post-war to free-market economy as inflation began to take hold. He later explained how the UK decided to peg its currency to the Deutschmark (the British pound would "shadow" the German mark) and joined the ERM with the intention of attempting to control the rate of inflation. Having failed to maintain its lower bound acceptable rate of 2.7 DEM to GBP, it was forced to withdraw from the European Rate Mechanism (ERM). This day became known as Black Wednesday, 16 September 1992. Britain's attempts to maintain its membership of the ERM was a factor which intensified the early 1990s recession in the UK (contractions in GDP from 1990 Q3–1991 Q3) since interest rates were prevented from being cut in order to prevent the devaluation of sterling. Following Britain's exit from the ERM, the pound devalued 20%, interest rates were allowed to decrease, and a falling interest cycle ensued. Mr Austin explained that a consequence of the recession was the eventual decision to provide the Bank of England's Monetary Policy Committee control over setting and controlling interest rates. By granting these privileges to an independent body, interest rates wouldn't be manipulated by politics.

Mr Austin continued to speak about the changing macroeconomic trends during his career in banking, mentioning how

2000–08 was a golden era for bankers due to deregulation. He also spoke on the global financial crisis and succinctly explained the causes with reference to clearly defined terminology such as: mortgage-backed securities – collections of individuals' mortgages which are packaged into securities which investors can buy; self-certification mortgages – significant because individuals could borrow without having to provide evidence of their income; and the subprime mortgage crisis. The subprime mortgage crisis was a result of banks offering too many mortgages to borrowers with low credit ratings, and this coupled with falling house prices led to mortgage defaults. Mr Austin recollected that the most severe periods of the crisis were the scariest weeks of his life. Banks couldn't make their commitments to other banks for liquidity (which they needed in order to satisfy reserve requirements regulations), which brought about fears of the collapse of the banking system. Mr Austin gave insights into his experiences working in the banking sector at the time, and the fear that society might erupt into anarchy, which was a genuine concern for him and many others.

Mr Austin then presented the, at the time, revolutionary solution, quantitative easing (QE), as a response to the recession, which was enabled by digitisation in banking – it wouldn't have materialised in the analogue society of 20 years ago.

Following the heavy regulation of banking, and in the nascent years of banker-bashing, Mr Austin shifted to the shadow-banking market. Property investors, developers and traders approach his firm for funding. Pre-2008 they would receive this from banks at a sensible rate of interest. However, banks are now more reluctant to lend to property developers. Mr Austin provides loans to these developers for these property projects, charging an interest rate of 8% and paying investors 6%.

Finally, Mr Austin elaborated on QE, but in today's context, and concluded with a thought-provoking question: what are the long-term consequences of QE? Will we pay the price? Is this digital money real?

Overall, it was a fantastically delivered talk which touched on the key economic events in the past few decades and explained economic concepts pertaining to the exchange rate, liquidity and QE.

PSYCHOLOGY SOCIETY

Joseph McLean, Druries, "Essentialism: why we are attracted to the hidden aspects of things and people", 11 February

Joseph McLean, *Druries*, began the year's inaugural Psychology Society meeting with an intriguing introduction entitled 'Essentialism: why we are attracted to the hidden aspects of things and people'.

Take a simple tape measure and a pair of nice boots. Would you believe if, instead of £5 and £50, these auctioned at \$48,875 and \$10,000,000? John F Kennedy used the measure, and an Iraqi reporter threw the boot at George W Bush. McLean stated that essentialism is the reason we see such a drastic change in value, that our belief of an object, not how we see them or hear them or feel them, determines the response.

Put simply, Sensory Stimulus + Essence = Human Pleasure. Depending on the context, the essence's weightiness varies compared to its physical counterpart; however, it still plays a large role in our experiences. All humans are essentialist to a certain degree, according to McLean, which differentiates us from other animals.

Food is an excellent example of essentialism. While it is difficult to grapple with the moralities of cannibalism; we can proffer an explanation. A prolific German cannibal once stated in his confessions that he felt and became more fluent in English

by eating an English victim. Jeffery Dahmer also thought consuming someone's flesh was imparting their "essence" into himself; eating is much more than nutritional uptake. A more mundane example is preferring a McDonald's carrot over market carrots or knowing that the wine you are drinking is supposed to be good. The sensory stimulus is constant (for the meals are same), but our belief significantly alters ultimate pleasure.

Are you sceptical? Take Oobah Butler and his Shed at Dulwich, the no1 restaurant in London. Except that the fictional shop was in his backyard and served microwaved lasagne free of charge for one night only. Visitors left positive reviews ("excellent dish!") about a meal easily concocted in a comfier home microwave. Here, the physical experience is below average, yet patrons' belief (fake reviews) greatly influences perceived pleasure. McLean also humorously recounts his Sunday fiasco with communion crackers. Famished, he tried to munch up some of those arguably tasteless sheets to the visible anguish of his mother and was punished for meddling "with the Lord's body". Once again, if it were not for the bread's relation with God, there would be no reason to punish someone for eating it.

Look no further than your own house or even room to discover the impact essentialism has on your life. A wedding ring is irreplaceable, even if a more expensive alternative presents itself; I still cannot and will never let go of my childhood deer plushie: dirty, old and arguably less glamorous than all the other alternatives it may be. Thus, humans are essentialist: excellent, annoying, but harmless at best.

Yet bias itself might stem from essentialism. The original Mona Lisa fetches \$100,000,000 compared to \$0–100 of an exact copy. The lack of creativity and history devalues overall pleasure. There are high demands for luxury brands such as Supreme, Gucci and Balenciaga, although equally comfortable shirts fill up local markets. Oobah Butler, with a leather jacket and jeans from Brixton Market, received positive remarks from professional designers and critics in Paris Fashion Week. The difference in context made a £5 rip-off into a designer piece. Acclaimed violinist Joshua Bell and his Strad only caught the attention of seven commuters in a metro station, while John Cage's 4 minutes and 33-second silence has garnered more than 297,000 clicks in Spotify. McLean argues a simple absence of noise, branded by an album cover and innovative composer, evokes a pleasant sensation. Context heavily influences the perception of any concept.

Is that bad? McLean sees essentialism through an optimistic lens; pleasure deriving from context defines who we are and is an inseparable part of being human. The enthralled audience posed some enlightening and tricky questions to McLean. Do we develop essentialism from childhood? Essentialists vary; however, I do not believe youth has much weight. What about ensuing bias? Could it promote racism? Definitely, Oobah's Shed shows people base "essence" on information, whether it is true or not. Not only do we indulge in primal pleasures, but art, history and love define the experience. So, stand up and look; look and grab objects to think about whether its physicality or "essence" carries more value for you.

SCIENTIFIC SOCIETY

Henry Webster, Druries, "The Chemistry of Colour"

The Scientific Society was very fortunate to welcome Henry Webster, *Druries*, to give a talk on 'The Chemistry of Colour'. It proved to be a fascinating talk with extremely advanced chemistry presented by Webster.

Webster started by stating that the energy of electrons is quantized – it is confined to a set of energy levels. Plus, we can't specify exactly where an electron is – we can only give

it a probability cloud in which the electron is likely to be found at any one time. In quantum mechanics, a particle has its own wave function which specifies all the properties of the particle, namely the energy and the probability of finding it at a certain position. The probability density is represented by the wave function squared, and the wave function is specific to the particle you're describing. To determine the wave function, the famous Schrödinger equation has to be solved, and the solutions to the equation are called atomic orbitals. Atomic orbitals are regions in which an electron can be found with each orbital holding up to two electrons and are characterised by quantum numbers. Quantum numbers take the form of integers or half integers. Electrons aren't just restricted to their imaginary cloud however – they can absorb energy and move into a higher energy orbital, and move back down to its original position whilst emitting a photon.

To understand colour better, bonding has to be discussed. When elements combine, the orbitals which make up the atoms of the element combine to form molecular orbitals. Thinking of electrons as waves, the two waves can combine in phase with each other, causing constructive interference, or the other way around, they combine out of phase with each other, causing destructive interference. If they combine constructively, they are said to form a bonding molecular orbital, and if they combine destructively, they form anti bonding molecular orbitals. When orbitals combine, they form equal numbers of antibonding and bonding molecular orbitals with the bonding molecular orbitals being more stable as they're in a lower energy state than the anti-bonding orbitals. The ways in which the orbitals combine form different bonds. For example, when two orbitals combine head on, they form sigma bonds, but if the orbitals overlap in parallel, pi bonds are formed, which are responsible for forming double and triple bonds.

The structure of coloured compounds often contain a pattern of double and single bonds – this is known as conjugation, which is responsible for the colour of many organics compounds such as beta carotene, which makes carrots orange. The electrons which occupy the pi bonds can move around the molecule, known as resonance. If the pi electrons move from a double bond to a single bond, then the conjugation of the molecule will shift. The structures which a conjugated molecule can take are resonance structures. Light is also important to understand when describing colour. It is neither a wave nor a particle. However, quantum theory suggests that light is made up of discrete packets of energy, or quanta, where the energy of an electromagnetic wave is proportional to its frequency by the famous equation $E = hf$ (h being Planck's constant).

When you shine light on a molecule, the molecule absorbs that light, giving the electrons have extra energy and motivating them to move between orbitals. The orbital from which the electron will move is the HOMO (the highest occupied molecular orbital) and the orbital to which the electron moves is the LUMO (lowest unoccupied molecular orbital). This happens in molecules between the bonding MO and the anti-bonding MO. This energy level difference is often referred to as the band gap. After being excited, the electron quickly returns to a lower available energy level, releasing energy to the surroundings. Since the energy of the electron is proportional to the frequency, the light that is emitted has a certain frequency which may or may not be in the visible spectrum.

The conjugated part of the molecule is the region of the structure which causes its colour. The more conjugation we see in a molecule, the longer the wavelength the molecule absorbs. In other words, the frequency increases with the number of alternate single and double bonds. Conjugation causes the band gap to be reduced and since $E = hf$ if we decrease the energy gap, then this increases the wavelength of the molecule absorbed. As a result, if we have longer conjugated molecules, like beta carotene, they will absorb longer wavelengths of light, some of which reach the visible spectrum.

Beta carotene has a peak absorption at around 450 nm which is in the violet/indigo region. Hence most of the light is not absorbed, which raises the question – shouldn't the colour of the beta carotene be a mix of all the colours left over? Colour theory states that the colour that is observed by the molecule is the complimentary colour of the light absorbed. Referring back to the beta carotene example, since it absorbs wavelengths in the violet region, it appears a yellow-orangey colour. Another category of coloured compounds is the transition metal compounds which can form colourful complexes. The reason behind this is much explained by crystal field theory. When transition elements combine with a ligand (a molecule or ion), they become attracted to the central metal atom to form a complex. This causes a repulsion from the ligand and the electrons in the d-orbitals of the transition metal ion – as a result, the electrons in the d-orbital of the transition metal atom split into higher and lower energy orbitals. The electrons located in the d orbital of the x-squared-y-squared plane are in the same plane as the ligand, hence experience more repulsion (the electron and anion repel). This energy difference is represented by ΔO . If ΔO is small then little energy is required to occupy higher energy orbitals and so they will absorb higher energy waves, which have a smaller wavelength. If this wavelength is within the visible range, then the complex will produce a colour.

A substance is black if the band gap is less than the lowest energy of visible light. A recent discovery found that the blackest material on earth was vanta black, made out of nanotubes, which have a band gap of 0.8. In addition, a substance is white if the electrons in the molecule occupy a variety of different energy levels and hence absorb a variety of wavelengths, the photons of different frequencies which are emitted merge in the eye, causing the substance to appear white.

All in all, it was a fascinating and insightful talk by Webster, who managed to eloquently explain what is essentially university-level chemistry, allowing the audience to better understand the fundamental nature of colour.

SCULPTURE SOCIETY

*Matt Hughes, Head of Modelling at Framstore,
"The Art of VFX", 11 February*

This week, the Sculpture Society's first live event was delivered by the Head of Modelling at Framstore, Matt Hughes. Framstore is a visual effects studio that frequently works on projects in blockbuster movies; their upcoming projects include *The Crown*, *007 No Time to Die* and *Doctor Strange*.



Matt's talk was titled "The Art of VFX" and gave a broad insight into the broad spectrum of skills involved in creating the visual effects of a movie. Using the example of his most recent works in *Spiderman Far from Home*, Matt showed the

sequence of processes required in creating the most memorable clips in the movie. He presented a reel of some scenes that were produced with larger amounts of CGI, some which were wholly animated. The reel contained snapshots of the same scenes divided into individual layers: structures, base colours, lighting, and texture. The process begins with digital or physical paintings of concept art from the Art department, before the Look Development department studies how the subject may appear under lighting. Matt stressed that good knowledge of science and maths is key to developing the artwork, character modelling, lighting etc. He studied Maths, Physics and Art for A level before completing an BA in Environmental Design and an MA in Computer Animation. Matt hoped to inspire and encourage boys to continue with their art studies, saying that unlike many skills in industry, creativity and artistic practices are not something that can be developed or taught quickly. He gave an example, a member of his team was the principal traditional sculpture teacher at a school in Florence, had little prior knowledge of how to use digital software but was chosen for the job because of his incredible anatomical understanding of the human form.

VFX is a growing industry and having a strong art portfolio is often the key to success; the coding and technical skills can be developed when working in the industry but true artistic talent is often harder to find and if you have it, don't lose it – use it!

ORIENTAL SOCIETY

*Edos Herwegh Vonk, Newlands, "Deng Xiaoping: Economic visionary, draconian despot or both?",
8 February*

The Oriental Society hosted Edos Herwegh Vonk, *Newlands*, who delivered a talk entitled 'Deng Xiaoping: Economic visionary, draconian despot or both?' Herwegh Vonk's talk eloquently informed the audience of a fascinating chapter of Chinese history, one whose legacy can still be felt today. Herwegh Vonk navigated the extraordinary life of Deng Xiaoping by moving chronologically through events and detailing the story below. Deng Xiaoping was born in Sichuan province in 1904. At a young age, Deng became a participant in a work-study programme in France where he met Zhou Enlai and other communists who would go on to be incredibly influential in China. The programme ran out of money and soon became a programme of solely work, and it was here that Deng first learned how poorly the workers were treated by their French employers. He later moved to Moscow where he studied at the Sun-Yat Sen University, which was used by the Soviets to train up-and-coming Chinese communists in the ways of Marxism and Leninism. Upon his return to China in 1927, Deng joined Feng Yuxiang, a warlord, until he fled after the alliance between the Kuomintang (KMT) and the Chinese Communist Party (CCP) broke down. Deng even survived the infamous Long March of 1934–35.

Then came the Sino-Japanese war in which Deng proved himself to be a dedicated communist, and he managed to work his way up the ranks and remained a trusted communist through the Chinese Civil War years. After the war ended, Deng became a Council member and was mentioned in the 1949 proclamation of the People's Republic of China (PRC). He was then appointed to be Secretary of the Department of the Southwest and was responsible for dealing with the remnants of the KMT. He soon became the Mayor of Chongqing – the former capital of Chang Kai-Shek's China. In the years following, Deng became embroiled in some of the darkest chapters in China's history. After Mao announced the Anti-Rightist campaign in 1957, Deng led much of the crackdown against so-called "Rightists" and

as many as two million people were killed in the two years in which this policy was pursued. In fact, Deng's campaign was so violent that Mao Zedong urged Deng to curb the violence.

However, this would not stop Deng's rise to power and, in the wake of the Great Leap Forward in which tens of millions of people starved to death, Mao Zedong began to withdraw from the day-to-day administration of China and left this responsibility to Deng Xiaoping, Zhou Enlai and Liu Shaoqi. Together they instituted the first of the radical reforms that accelerated China's economic growth as they allowed peasants to own small holdings, gave financial support to agricultural producers and encouraged a greater focus on heavy industry – in particular the steel industry. Their progress was interrupted by another of Mao's most disastrous and deadly policies: the Cultural Revolution. The Cultural Revolution was a reaction against what Mao perceived to be a wavering of support for him; it began with the purging of high-ranking communists and a declaration that the party had been overrun by "bourgeois representatives". The ensuing chaos, in which all elements of the political system were fractured from the Army to the CCP, led to the deaths of millions more. It was at this point that the audience were shown three images and were told of the harrowing stories to which these photos were attached. The most memorable being a photo of a quotation from Mao written on the wall of a classroom in Guangxi. In Guangxi the violence of the Cultural Revolution was conducted on a hellish scale; in one classroom the teacher was said to have been murdered and his organs were cooked and consumed by the students who had killed him. Tragically, there were many more accounts of cannibalism in this period. Unlike the Anti-Rightist movement, however, much of the violence was directed towards Deng's faction and Deng himself was exiled. Meanwhile, his son was left paralysed after either having been thrown from a window or from jumping in an attempt to escape.

Eventually, the chaos calmed and Lin Biao was then put in charge of daily national affairs until he suddenly died in a plane crash in 1971. Zhou Enlai (a former ally of Deng's) who had somehow managed to survive the Cultural Revolution then replaced Lin Zhou, and eventually convinced Mao to allow Deng to return. Upon his reinstatement, Deng rose quickly, becoming Vice Premier in 1974 and Vice Chairman in 1975. All was not secure for Deng though as the Gang of Four – a highly influential group of notable Mao supporters who had strong ties to the CCP's media and propaganda wings – strongly opposed the return of Deng and his more liberal policies. With the Gang of Four's mounting pressure on Deng, Zhou's death in January 1976 and Deng's removal from all positions after being blamed for organising the Tiananmen Incident (not the Tiananmen Square massacre), it looked as if Deng would never become leader. Then, in September 1976, Mao Zedong died and, in the ensuing power struggle between the Gang of Four and Hua Guofeng that culminated in Hua becoming Premier of China, Deng was able to return. By 1978, through shrewd political manoeuvring, Deng had become the de-facto leader of China.

Deng's time as leader undoubtedly positioned China to become a modern global superpower, and without Deng's reforms China may never have become the economic powerhouse it is today. As leader, Deng instituted term limits, encouraged criticisms of the Cultural Revolution and acknowledged the failings of the Mao regime – a policy that led him to declare that Mao was seven parts good and three parts bad. He removed intellectuals and scientists from the nine black categories list. Deng also made a series of notable foreign policy moves such as the decision to invade Vietnam in 1979 that was said to have been conducted to display China's military power. Although Sino-Soviet relations under Deng remained frosty, Sino-American relations improved considerably and a series of bilateral agreements were made that agreed to the establishment of embassies in both countries' capitals. Arguably Deng's most important foreign policy

achievement was the beginning of negotiations on the return of Hong Kong and Macau to Chinese control.

Deng Xiaoping's achievements as leader can not be listed without mentioning his remarkable economic successes. During his leadership, China's economy grew rapidly as it adopted a more market-based economy that focused on export-led growth and benefited from foreign investment, which was permitted for the first time in decades. In addition, Deng's creation of Special Economic Zones (SEZs) allowed for more free-market-based policies and tax cuts to allow specific regions of China to focus on exporting goods to foreign markets. Building on Deng's earlier policy of allowing farmers to privately own small plots of land, farmers also became able to sell crops not purchased by the government on the private market. However, Deng's most controversial and rightly vilified policies were his social policies, where almost 100,000 women were forcefully sterilised and 400,000 women were forcibly implanted with surgical contraceptives. The infamous one-child policy implemented under Deng also resulted in rampant rates of child abandonment.

Herwegh Vonk concluded his fascinating talk by acknowledging that although Deng was indeed a despot, he instituted radical reforms that set China on a spectacular path towards rapid economic growth. Herwegh Vonk characterised Deng as a bulwark against Mao's radical leftists and he expressed sympathy though not support for Deng's authoritarianism. It was a combination of these factors that led Herwegh Vonk to aptly summarise Deng as a pragmatist and a survivor. I would like to thank Herwegh Vonk for his insightful talk and thank the Oriental Society and RMT for hosting the talk.

BUSINESS LUNCH

*Careers: Mark Landon (Rendalls 19773), Partner and National Head of Training at Weightmans LLP,
27 January*

On Wednesday 27 January, Old Harrovian Mark Landon, Partner and National Head of Training at Weightmans LLP, kindly delivered the second virtual Business Lunch of the new year – providing a great insight into a career in law.

The discussion was insightful on many levels, but something that stood out was the topic of universities and further education. Mr Landon highlighted the importance of choosing a university that will provide the best Law degree for what you would like to learn about the law, rather than simply choosing a university based on its overall reputation. Moreover, Mr Landon also demonstrated the abundance of transferable skills a degree in law provides, therefore increasing credibility in the workplace and making graduates highly employable in a wide variety of industries.

Yet, this isn't to say that a law degree guarantees you a successful career, rather that, in order to be successful in law, alongside attaining formal qualifications, you must be willing to be proactive and 'go the extra mile'. For example, Landon discussed how he is always impressed by students who are proactive enough to seek work experience themselves and reach out to firms, as it shows their commitment and interest in the industry. Additionally, Mr Landon emphasised the importance of keeping up to date with current affairs as this is important for developing critical-thinking skills and building an understanding of the world, but also helps lawyers to carry out their job effectively on a day-to-day basis. This may be in an interview where you are asked to provide your opinion on the hot topic of the day or simply, while having lunch with a client, being able to have a conversation about something other than the case at hand. This idea is similar to another topic Mr Landon raised: the importance of being able to build a rapport with others and

developing relationships with clients – especially if you are looking to pursue a long-term contract with a particular client.

Mr Landon also reflected on his career so far and, interestingly, his time on the Hill (*Rendalls 19773*) where he discussed his early change in career path from medicine to law. This led on to a discussion of the wide variety of areas there are in law and how it is an important aspect of any business. He discussed in detail his time as part of the legal team at Royal Mail. This coincided with a time of political and legal changes in the workplace that led to numerous strike actions and many interesting legal disputes between Royal Mail and its employees. This differed from the work he does at Weightmans, where he oversees the recruitment and training of new lawyers for the growing firm. Mr Landon highlighted how the role of a lawyer inevitably varies depending on the firm and their structure of operation.

The success of the event was made clear by the myriad questions posed to Mr Landon. His responses were most helpful in clarifying any misconceptions or queries regarding studying law at university and how to make a competitive application, as well as providing a clear picture of what it is like to be a lawyer and the demands of the job.

On behalf of all the attendees, I would like to thank Mr Landon for sparing his time and providing such a personal insight into the recruitment processes of the industry, the day-to-day experiences of a lawyer and his career as a whole.

SENIOR HOUSE DEBATING

*Inter-House Debating: Senior Semi-Final 2,
8 February*

On Monday 8 February, the House Debating competition reached its senior semi-finals, with The Grove pitted against The Knoll to discuss the motion that 'This house believes that you do not need a god to start a popular movement, but you do need a devil'. This lively debate pitted Ryan Cullen and Indi Abrams, both *The Grove*, against Edred Clutton, *The Knoll*, and the current co-captain of School debating, William Wauchope, *The Knoll*.

Cullen opened the proposing of the motion by stating that popular movements don't have figureheads. Using his now trademarked soft-spoken tone, with surgical precision he dissected the key examples of protest movements that existed without key figureheads. He argued that even the modern Trumpism movements started with the dissatisfaction of working-class America, who felt they weren't being listened to. No god was needed, but having a focal point for hatred caused the protest movement to rise up and elect a man who went on to become their figurehead in "draining the swamp".

Clutton then opened by dividing the burdens of the opposition between himself and his formidable partner. He argued that devils ultimately have an adverse effect on protest movements because they create echo chambers and factionism. His underlying argument was that hope outweighs fear in capturing the imagination of the people. However, his own delivery of the point was disappointingly self-evident, leaving all to see that their hope for a more tonally varied speaker outweighed their fear of the theatrics of Indi Abrams.

Almost right on cue, the second speaker of the proposition Abrams, arrived on the scene to deliver some more punch to the debate. He argued that devils were good for movements because of their ability to "rally the base" and ensure that long-time supporters stay actively engaged in the political environment. Although they are divisive, devils can secure a strong foundation, which will lead to greater long-term political outcomes.

Finally, Wauchope delivered a tour de force, speaking at machine-gun pace about why a god is necessary in order to

bring about a protest movement. This served as a strategically intelligent mechanism for shifting the goalposts from one proposition burden to another in order to change the direction of the debate. Along with offering a significant amount of rebuttal, Wauchope rounded off the case for the opposition, leaving a strong taste in the mouths of the house.

This was followed by a vivacious floor debate, with a variety of speakers from the floor and the timekeeper offering up questions for the speakers to address more directly. Following a series of short summary speeches, the house was divided, with the motion being declared as carried for the proposition along largely partisan lines. The judges confirmed a win for The Grove to set up a red hot encounter between their two speakers and the other debating co-captain later on this term for the senior House trophy. Thanks must go to SPS, CER and all the speakers for what proved to be an incredibly entertaining encounter.

JUNIOR HOUSE DEBATING

*Inter-House Debating: Junior Semi-Final 2,
5 February*

On Friday 5 February, the Junior Debating Society hosted an inter-House semi-final match. The motion, that 'This house would abolish the World Health Organization', was proposed by Jiho Ro and Henry Ridley of The Park and opposed by Ayobami Awolesi and Felix Boegh-Nielsen of The Head Master's.

First up was Ro, who began his argument by outlining instances in which the World Health Organization has failed, including covering up the initial COVID-19 pandemic and the poor speed at which they declared a global health emergency. In both these instances, they argued that the WHO was unable to serve its purpose of protecting the world from pandemic-type events. He then went on to say that the WHO isn't fit for purpose because it is unable to exist as an independent body, instead relying on major countries and corporate interests for its funding. Those same special interests would then have the opportunity to tie the hands of the WHO, both through the appointment of key leadership figures and through being able to threaten to withdraw funding. Indeed, there are a number of examples of this happening in the past, with contracts being awarded back to key donors outside meritocratic cycles.

This speech was followed by some rebuttal from Awolesi. He refuted the notion that the WHO was failing, because many of the miracles the first speaker of the proposition had expected the WHO to complete were outside their original mandate. He argued that the WHO helps protect third-world access to key medical resources, equipment and research. This can further benefit the citizens of the world by preventing vaccine nationalism, an issue particularly prevalent at our current delicate stage of the COVID-19 pandemic.

But what followed from the path was nothing short of a masterstroke with Ridley arguing further about special interests. This impassioned speech explained why the WHO only currently still exists because it spends its time serving corrupt masters instead of doing what it should be doing and aiding the health of the people of this world. At this point in the debate, it was clear we were getting back to the vintage years of House debating as they used to be in the years of old.

This was followed up by a speech from Boegh-Nielsen, who argued that the WHO was successful in the past. The example of this that he chose was the eradication of smallpox in 1980 through vaccination alone. This led to an overall decline in deaths and was an oexample of how the WHO succeeded in providing a public benefit to the citizens of the world. He also argued that the WHO plays a key part in interacting with other

international organizations to maintain worldwide stability.

In spite of minor technical difficulty, the debate morphed into a lively question-and-answer session with a variety of questions from both the timekeeper and members of the audience. In the end, the debate was declared to be won by The Park, who await Elmfield in the final after half-term. Thanks must go to JEP, SPS and CER for helping organize this magnificent event.

FOUNDER'S DAY WITH THE GUILD

"Life is dull, if you bide at home?", 6 February

The Head Master began this year's unique online Founder's Day celebrations with an inspiring speech in memory of founder John Lyon from outside Old Schools. We were then whisked off to Lincolnshire, where Head of The Guild (Freddie Strange, *Newlands*) duly introduced the programme for this alternative Founder's Day. Such is the virtual life, that we were soon being transported to a spotless kitchen, whereupon an apologetic Henry Farquhar, *Lyon's*, Captain of Harrow football, emerged, sending his best wishes whilst clearly longing for the muddy mayhem of Hemstall fields. In the absence of any traditional sporting focus this year, The Guild, with their bubbling enthusiasm for the arts and cultural life, had cooked up a mouth-watering feast of entertainment for the 'Founder's Day with The Guild' virtual site, together with details of their new mentoring scheme for aspiring students of the Arts.

For our starter, the first three Desert Island Disc podcasts were served up, featuring distinguished beaks in the hot seat: namely WMAL, CJFB and HRF. Here we discovered that one was a 'scrimshanker' with a liking for Vangelis, another had a strong penchant for France and *Mr Blue Sky*, while the other was once a biker 'larging it up' to Groove Armada and the Madchester scene! Who knew?

The tasty main course included the first edition of *The Guild Presents* magazine, which offered a rich kaleidoscope of articles from all 13 Guild members. There were sparkling art reviews covering humanity in mixed-media art (Shubh Malde, *Elmfield*), the contemporary art market (Freddie Strange), the Convicts Art show (Max Gu, *Rendalls*), the OSRG *Muse and the Maker* exhibition (Adam Ait El Caid, *Druries*), the *Tools for Life* exhibition (Nickolas Platt, *Moretons*), the life and art of Artemisa Gentileschi (Adam Auret, *Lyon's*), the forgotten symbol of ancient Rome (George Phillips, *The Head Master's*) and the role of backdrop in wildlife photography supported by some stunning photography (Cameron Yarrow, *Druries*). Drama enthusiasts were fed 'Directing *Waiting for Godot*' (Max Morgan, *Rendalls*), and a film review of *Withnail and I* (Gabe Rogers, *The Knoll*). For the Byronic amongst us, there were two original poems (Jake Henson, *The Park*). Finally, music devotees were gifted the 'Theme of Night-time in Britten's Music (Daniel Sandell, *Moretons*) and an original nostalgic composition, *Anthem for doomed youth* (Marc Lindgren, *West Acre*).

Other main dishes included intriguing collections of Shell, Remove, Fifth, Lower and Upper Sixth Form art, as well as an A level photography exhibition curated by the Head of Photography, DRJB, which I found particularly atmospheric. The Guild also concocted a dazzling virtual art exhibition video, showcasing their recent drawing, painting, sculpture, photographic and mixed-media work, all to a soulful soundtrack of Saint-Saëns' *Swan* played by Lindgren. A particular thank you must go to George Phillips for curating the video. There was also a fascinating Design & Technology Department Founder's Day publication highlighting the value of the workshop, the foundry and other projects in designing and testing some highly

inventive creations such as a nicotine gum dispenser (Hassan Hammad, *The Park*)!

For dessert, the actors of The Guild performed dramatic pieces created during the pandemic, beginning with two evocative poems, *He speaks* and *They looked at the Columns* (J Henson). This was followed by some thought-provoking Shakespeare monologues from *Othello* (M Morgan) and *Richard II* (F Strange). Finally, we were treated with dramatic split-screen extracts, presenting a heartfelt scene from *The History Boys* by Alan Bennett (G Rogers, M Morgan), then an existential scene from *Waiting for Godot* by Samuel Beckett (G Rogers, F Strange). The musicians of The Guild then dished up a colourful cheeseboard of Harrow songs with *Play Up*, *Plump a Lump* and *Three yards* (M Lindgren, N Platt, D Sandell), followed by the splendid *Larry* performed by the Byron Consort. These joyous musical videos were further enhanced by a sentimental selection of Harrow football photos (C Yarrow). The Guild also selected three well-received pieces of creative writing by boys in the Lower Sixth for the online site.

Finally, for after-dinner drinks, the Head of School (A El Caid) introduced a special 2021 edition of *The Harrovian* created by The Guild, featuring a collection of Harrovian articles from Founder's Day editions over the last 65 years and dating back to 1955. There were several gems, including a debate on whether 'Public schools are a blight on British society' and 'Two voices', a discussion of Harrow's latin mottoes: Donorum Dei Dispensatio Fidelis and Stet Fortuna Domus. To conclude, this virtual Founder's Day offering has more than satisfied my hunger for a celebration of the arts while in lockdown. However, to quote the Harrow song *Larry*; 'Life is dull, if you bide at home; Larry is made of stuff for travelling!' So now that The Guild have whetted my appetite, I look forward to travelling back to the Hill, resuming my pursuit of the noble arts and the 'Faithful Dispensation of the Gifts of God' and help 'Let the Fortune of the House Stand!'

The Guild have asked me pass on their thanks to all the members of staff and beaks who offered generous help in enabling this online event to take place.

NHEHS PROJECT

Over the course of the Autumn term, the Remove scholars have collaborated with Notting Hill and Ealing High School for Girls (NHEHS) to study and learn about scholastic development in Ancient Alexandria. After having been split up into pairs and given our area of research, we had around nine weeks to conjure up an essay, analyse a given source and develop a Microsoft Sway presentation on our given topic. Despite our predicament, we were still able to communicate virtually and build relationships. During this week and the week before the end of the Autumn term, each pair presented their research to the group as follows.

First, we had a presentation from Felix Boegh-Nielsen, *The Head Master's*, and Sarah-Jane Davison, who talked about Hypatia and her pioneering works in mathematics and astronomy. Hypatia thoroughly investigated conic sections – hyperbola, ellipses and parabolas – which shape astronomical studies today. Up next was June Hyun, *West Acre*, and Charlotte Farrell, who talked about whether Ancient Alexandria should be considered a blessing or a curse. Their presentation highlighted the key events which led to the city's downfall, such as earthquakes and other natural disasters, as well as its good points, such as its thriving economy due to its convenient position near the Nile Delta. Following this, we had a talk from Alexander Newman, *Druries*, and Shreya Grove, who discussed how Alexandria acted as a religious and cultural hub. This was mainly due to

the fact that many religious manuscripts, such as the Torah, were translated there into many other languages, allowing them to spread their ideologies across the Mediterranean. The last talk was brought to us by Michel Quist, *The Grove*, and Maddie Halliday, on the topic of the languages that were spoken in Ancient Alexandria. The pair analysed papyri, highlighting the variety of dialects in the city, which led them to conclude that the city was always looking for opportunities to thrive and prosper. After a long four-week break over Christmas, the group heard from the remaining pairs this week. First to break the ice was Brandon Tam, *The Park*, and Genevieve Pearce, who discussed the significance of the Pharos: a 150m-tall tower that contributed to the society of Alexandria in many ways that you wouldn't previously have thought. The tower acted as a tourist attraction for visitors, a centre of religious pilgrimage, and the light that guided ships safely into the port. Second was Aryan Rudraraju, *The Grove*, and Nur Mohiuddin who spoke about the ancient astronomical observations that were carried out in Alexandria and the neighbouring city, Syene. With only a stick and a willing servant, Eratosthenes was able to calculate the axial tilt of the Earth, the circumference of the Earth and the distance between the Earth and the Sun – their results were incredibly accurate. After this, the spotlight moved to Henry Webster, *Druries*, and Isabella Stumpf, who presented their research about the decline of the Great Alexandria Library. They talked about multiple reasons for the decline, including religious tensions and invasions, and the description of the destruction by two poets, Seneca and Mark Anthony. The penultimate presentation was brought to us by Oscar Wickham, *The Head Master's*, and Maddie Wight, who talked about the ground-breaking recent discovery of a nearby city to Alexandria, Thonis Heracleion. The pair spoke about the longevity of the treasure quest brought about by the harsh conditions, namely the whole city being underwater. The final talk was presented to the group by Vincent Song, *The Head Master's*, by means of a virtual YouTube video, and Elizabeth O'Reilly, on the topic of ancient medicine. Their research found that Alexandria had a rather modern perspective on diseases, considering mental health problems such as depression and anxiety as much as any physical disease. However, the ways in which the doctors conducted their experiments was very primitive and unethical. The essays that accompany these talks will be distributed by HRF, if you would like to read more deeply about this fascinating city.

On behalf of our group, we would like to thank all the staff involved from both institutions, especially HRF, Mr Livings and Dr Swallow for organising the whole event. I am sure everyone will take a lot away from this – both the city's fascinating history and friendships with another school.

HOUSE MATHS COMPETITION

Senior House Competition, 9 February

In a move necessitated by the current lockdown, this year the Senior House Maths competition was hosted online for the first time. This meant that calculators were allowed (much to the relief of several of the Sixth Form and the disappointment of CJFB). The competition pitted the three best mathematicians from each House against each other over three tricky rounds to see who emerged victorious and claimed the most coveted trophy of them all. The holders, having won in 2019 (the competition couldn't take place in 2020) were Lyon's, but the favourites, with three boys each in the top Upper Sixth Maths division, were Bradbys and Moretons. House loyalty was clearly on show, with some boys who live abroad staying up past midnight to compete.

It was Newlands and The Knoll who led the charge out of the blocks with full marks in the first round (a crossnumber). The “individual” round came next, with Bradbys top-scoring and Moretons sneaking into pole position with another fine score. It was exceedingly close, however (there were nine points separating the top five Houses) so it was anybody’s game going into the final round. In the end it was Lyon’s who produced the most correct answers in the final minutes to secure the win by the slender margin of three points over The Knoll in second and Druries in third, therefore retaining their trophy.

Congratulations to all the boys involved for the excellent standard all round, and in particular to Lyon’s for their exciting victory.

LADY BOURCHIER READING PRIZE

Final, 5 February

The Lady Bouchier Final took place on Friday 5 February 2021, online. This competition, which awards rewards good reading aloud, clarity of voice, an engaging style and an ability to capture the attention of the audience, is one of the oldest competitions in the School’s history, with the first event taking place in 1878.

We were delighted the competition could go ahead, with the novelist Ashley Hickson Lovence adjudicating.

The four Junior finalists read from the novel *Less* by Andrew Sean Greer, followed by poems by Pascale Petit. The five Senior finalists read from the novel *The Doll Factory* by Elizabeth Macneal, followed by poems by Thomas Hardy.

All the readers were excellent, providing a wonderful hour of readings for the online live audience. Ashley Hickson-Lovence gave very helpful and supportive feedback to each reader before announcing the two winners. In the Junior competition, the winner was Adiran Inpan, *Bradbys*. In the Senior competition, the winner was William Wauchope, *The Knoll*. Special mention was given to Remi Jokosenumi, *Lyon’s*, for his excellent readings.

Here is the full list of finalists, alongside their poems:

Adiran Inpan, *Bradbys* – ‘Green-Bee Eater’
 Vincent Song, *The Head Master’s* – ‘Swamp Deer’
 Max Morgan, *Moretons* – ‘Black Jaguar at Twilight’
 Netanel Lawrence-Ojo, *The Knoll* – ‘Hummingbird’s Nest’
 William Wauchope, *The Knoll* – ‘The Darkling Thrush’
 Remi Jokosenumi, *Lyon’s* – ‘I looked up from my writing’
 Max Morgan, *Rendalls* – ‘The Echo-Elf Answers’
 Freddie Strange, *Newlands* – ‘The Voice’
 Indi Abrams, *The Grove* – ‘Rain on a Grave’

METROPOLITAN

DESERT ISLAND DISCS

*Third episode in The Guild’s Podcast Series,
 Marc Lindgren, West Acre, interviews HRF*

As lockdown continues perpetually, The Guild’s Desert Island Discs series has emerged as a ray of light for those of us who tune in every Friday. This week’s episode saw Marc Lindgren, *West Acre*, in conversation with New School’s finest, HRF. The discussion began with HRF detailing the struggles of lockdown,

a sentiment I’m sure many of us will share, although perhaps not to the extent of having to make a cheese soufflé while also trying to teach a Latin lesson.

HRF recounted her childhood, much of which was spent in France, something which is reflected in her choice of music, or holidays in the Lake District, where she now also goes with her own family. A particularly entertaining anecdote was HRF detailing a family trip to France, where she attended dinner with family of the French president and proceeded to mortify her own family by refusing to eat the food served. Such was the extent of her sister’s embarrassment at this that she ate the strawberries given to her, despite an allergy, to save her parents from further humiliation.

HRF’s university days were spent at Trinity College, Oxford, an experience she now uses as Head of Oxbridge, helping boys with their applications. One highlight for her at Oxford was coxing the eight at Henley. Since leaving university, HRF has spent 25 years in teaching, including at Winchester, before coming to Harrow. She is also a parent here, which she claims gives her an insight into the struggles, academic or otherwise, of us boys. That may come as a surprise to those of us who are taught by her, currently snowed under with essays.

Overall, this was a thoroughly entertaining conversation, with Lindgren’s skilfully asked questions providing a very interesting insight into the life of HRF and her experience as both a teacher and parent on the Hill.

DESERT ISLAND DISCS

*Fourth Episode of The Guild’s Podcast Series,
 Max Morgan, Rendalls, interviews JKB*

On the eve of half-term, we once again ventured from our very own isolation into that of the desert island as the fourth instalment of The Guild’s Desert Island Discs series graced our screens and audio. This week JKB, Harrow’s former Head of English and now Head of English at St Paul’s Girls School, was the distinguished guest of Max Morgan, *Rendalls*, and once again, the format proved an entertaining and effective escape, this time into the mind of a great beak of Harrow past.

As has become familiar, the format saw Morgan ask JKB for her four songs, a book and luxury item as a hypothetical castaway. As a former pupil of his guest, Morgan struck a personable and relaxed tone, able to draw out the curiosities and stories of JKB’s early life with consummate ease. This was equally attributable to JKB’s open and honest answers, which provided a fascinating insight into both her slightly unorthodox upbringing, and her remarkably varied musical taste and influences, including boyfriends, Beethoven and banned music.

JKB’s love of literature had equally interesting origins, and Morgan’s prompts saw JKB guide us through her first literary love, her dramatic experience at university and her ventures into further academia, taking the listener from a horse allergy to a dissertation on Shakespeare with no lost attention. This prompted further discussion of JKB’s teaching career, surrounding her time at Harrow and love of teaching literature, which is clear for all to see. Her musical choices, whose origins and justification were expertly sought out by Morgan, were varied and often rooted in intriguing anecdote, with this reviewer indeed being brought happiness by JKB’s ‘happy song,’ and equally satisfied by TLC’s first appearance in the series.

Once again, the 35 minutes of podcast flew by, masterfully ‘MC-ed’ by Morgan, who kept up The Guild’s tradition of excellent hosts to complement their quality guests. I shall await the forthcoming episode featuring the Deputy Head Master AC and Cameron Yarrow with a heightened sense of anticipation and an ever-increasing appreciation for the series.

PHOTOGRAPH COMPETITION

"Motion"

Winner: Daniel Zhang, *The Knoll* – Upper Sixth
From personal experience, bird photography really isn't easy, and I can imagine it's even harder with such a small subject. It looks like Daniel has managed to get the focal point spot on. The calmness and the colours of the water beneath the subject are a real sight and the small water ripples help visualise the impact of this bird's motion.



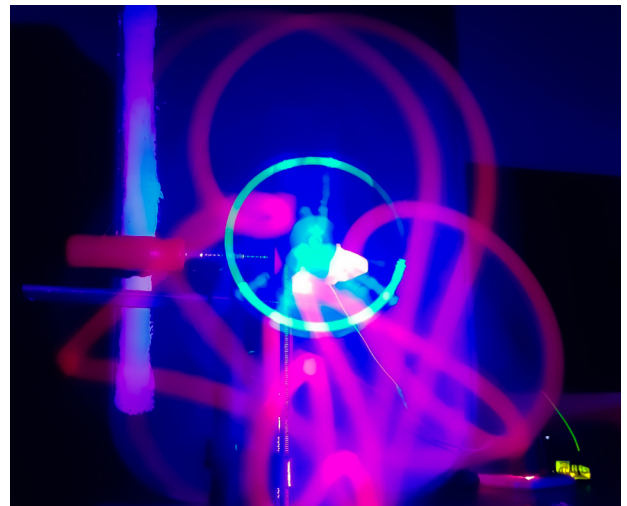
Runner Up: June Hyun, *West Acre* – Remove
This photo taken of the few moments before each raindrop hits the ground is a really clever interpretation of this challenge's theme. Not only is there motion as the raindrop falls, but the focal point being set on the floor clearly shows the splash of the water and the build-up of small puddles on the floor. All these elements combine to form quite a chaotic scene around the surface, which we don't really think about when rain is falling.



Mr Cullen



Mr Wild

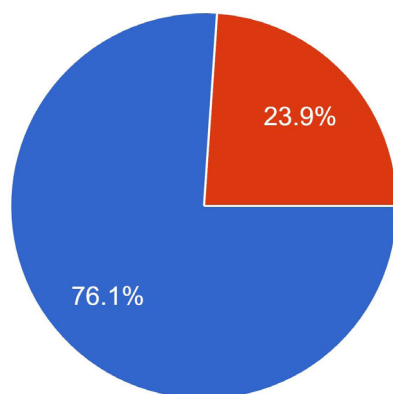
Vincent Song, *The Head Master's*Adam Auret, *Lyon's*Mrs Shryane
999

Data Photpipat, *The Head Master's*

HARROVIAN POLL

Coming out of Lockdown

Now that the prime minister has announced the return to schools in person on 8 March, many are facing the excitement and anticipation of a return to something more resembling life as we know it. However, on the eve of this historic new dawn for the School, the editorial team wanted to collect some of the thoughts of the boys to preserve them for the sake of history.



The first question on the poll was aimed at understanding the likely rate of return to the hill on 8 March. While it is immediately evident that we are unlikely to meet capacity, the numbers are perhaps better than anticipated. Out of over 200 responses, 76.1% have said that they are going to return upon the reopening of the School. Perhaps this serves as a sign that School life will at least be close to what we know it to be when we do eventually get back.

It was also interesting to see the range of emotional responses people were feeling about returning to the School. Out of all respondents, 43% said that they were “excited” about going back to School (an amount of emotion which would be unexpected when returning from an ordinary exeat, but perhaps not out of place given the breaks that the last couple of months have brought). However, not all the feelings of the boys were so positive. 30% of boys describe being “annoyed” at having to return – clearly some have not quite got to the end of their viewing of the flowering relationship between Daphne and Lord Hastings in *Bridgerton*. 20.2% describe as being “nervous” at the prospect of facing their beaks in person and not being able to say that their mic isn’t working when asked a question in the form room. A similar number (20.7%) are nostalgic about the lockdown ending. However, perhaps most interesting are the close to 11% of the School who are “angry” about the School’s reopening, a sign indicative perhaps of the lack of notice given by Her Majesty’s Government.

The editorial team also asked respondents about their lockdown regrets. At the start of this second lockdown, there was a huge push to encourage members of the School community to make progress in their lives, whether that is reinstalling Duolingo or playing the guitar. Among the most notable things people wished they did during lockdown are “go to the pub”, “break the Geneva convention”, “play rugby”, “establish a supranational Bosnian superstate and be acquitted of the warcrimes I committed in 1972–86” and “confess to my crush that I like him.”

However, this author had two personal favourite responses. When asked what the one thing someone set out to do during lockdown but never got around to, one respondent answered “figure out what on God’s green earth Metcon is” (a sentiment shared by much of the School who never just got around to virtual strength and conditioning); and of course, one plucky respondent said that the one thing they wished they had done over the last couple of months was “online school”.

HUMAN BEHAVIOUR

To what extent is our behaviour determined by our genetics?

The debate about how the human mind and body functions is an old one, with psychologist Sir Francis Galton coining the phrase ‘nature vs. nurture’ in 1869. Peoples of all backgrounds have offered opinions throughout history. So, to what extent is human behaviour genetically determined?

Firstly genetics, as many will know, is the study of genes, the building blocks of life, which contain the individual sequence of base pairs in our DNA. They code for proteins, which perform a magnitude of functions. Though, importantly in this case they are the grounding for all our innate actions (breathing, reflex actions). Human behaviour is thus ‘the way in which one acts or conducts oneself’.

Philosophers such as Plato and Descartes took a nativist approach, namely that certain things are innate. Thus, behaviour is a result of inheritance, which is natural. However, others, such as the philosopher and physician John Locke, believed that minds begin as blank slates, formed wholly by the environmental variables and individual experiences. So, which is it?

In the manner of science, how would you go about confirming or denying these interpretations? Ways to quantify genetic and environmental factors include using family, twin and adoption studies: all have ups and downs. Family studies are good as it is easy to find a family; however, false conclusions about traits being genetic such as “religious affiliation, wealth, and preference for cold cereal” can arise.

This is because they share similar environmental influences. Twin studies are possibly the best we can use. By comparing identical twins to fraternal twins, we can reveal traits that are inheritable, as these pairs of siblings only differ in the amount of DNA they share with their sibling. Further, adoption studies can shine light on the effects of different environmental (nurture) influences, to a certain extent.

So, which has more effect on a child's upbringing, and their behaviour through life? A Swedish study found that two of the so-called 'big five' personality traits (leading to behavioural traits), 'openness to experience' and 'conscientiousness' were heavily influenced by genes, and environment had little impact. However, the opposite was true for 'agreeableness'. A study by the University of Texas, Austin Texas Twin Project, concluded that 69% of a character is determined by genetics and 31% by environmental factors.

These studies show that genes (nature) have a strong effect on one's behaviour, but there is also a strong link to environmental effects (nurture). It is clear the two have a complex interaction, amalgamating to form a person's behaviour. An example of this clearly at work is in epigenetics. Although genes will not change in a person's life, specific tags along the chain can be turned on and off with outside influences, adjusting the way the body reads the genes.

A nice example would be the urge to eat. As an animal we would give way to our cravings, grabbing food. However, we have all been taught that this isn't socially acceptable. We all eat with a degree of respect: a balance of genetic and socially moulded behaviour. However, even social interactions are inspired by genetics, including the ability to talk and comprehend ideas. So, I think that even though the blend of nature and nurture exists, nature holds the upper hand. We are thus a product of our genes, before our experiences.

species found in Argentina are called Pigas. They are very similar to Austintown grasslands and can be easily identified by their unusual appearance. These unusual features have helped farmers identify and remove Pigous from areas previously unreachable due to the presence of the weed.

However, there are a few problems with this method. Firstly, farmers are not able to identify Pigous through their unusual appearance, as these animals are unable to climb trees. Secondly, the widely distributed species present in this weed have caused major problems for conservation planning and could make the entire ecosystem untenable.

Instead of the international eradication plan, which many countries are now implementing, can we in the UK and other countries around the world, including China, use the currently existing plan? If not, will we lose access to some of the most biodiverse habitats on Earth? If we don't act now, many are predicting dire consequences later in the century for us and the wildlife that we share with these omnivores.

If we don't stand up for our biodiversity today, we will be missed by wildlife later in the century when it is too late to save them. If we don't stand up for our ecosystems later this century, we will be around to see the changes happen naturally over thousands of years.

Biodiversity is power. It is a core value for Harrow and it starts with our biodiversity.

Best wishes,
MARUNA KWENA, HARROVIAN AI

CORRESPONDENCE FROM THE HARROVIAN AI

"Junior Pigous"

DEAR SIRs,

You should be aware that Junior Pigous are tiny, round animals that are native to Southeast Asia. They are omnivores, meaning they can eat almost anything that is not a plant. Due to this, they are often raised as pets by owners who have no idea what their pet is doing or where it is going. Many pet Pigous also come from poorer backgrounds, meaning that the owners think that they are property of the pet owner. This leads to disputes when the parents don't have equal say in how their Pigou is raised. The treatment of Pigous in Southeast Asia is extremely complicated. Many regions in Southeast Asia, for example Singapore, have no laws against cruel or inhumane treatment of Pigous. In addition, the US has no law covering the handling of Junior Pigous. Harrow School also has its own set of laws, which are even stricter than those in the US. There is a trade-off between animal welfare and profit on the one hand, and the freedom from laws and regulations on the other.

A Pigou is often raised for dairy but is also raised for meat. Because Pigous are omnivores, they are very susceptible to being reared in confined facilities, which often have mechanical devices that prevent them from seeing or hearing anything but the usual noises made by cows. Due to this, most people don't even realise that Pigous are much more than just cows.

Harrow Pigous are, however, highly invasive and have been known to reproduce rapidly. They are usually found in dense growths that are difficult to remove. In South America, the

AN ARTST'S RENDITION

The Harrovian AI of 2061



APOLOGIES TO SHAKESPEARE

All the world's the Ryan,
 And all the boys and beaks merely divas;
 They have their exits and their entrances;
 And boy man in his time plays many parts,
 His acts being seven ages. At first the Shell,
 Whining and moaning in the Matron's office;
 And then the arrogant Remove, with his backpack
 And shining morning face, creeping like snail
 Unwillingly to 2a. And then the Fifth Former,
 Sighing like furnace, with a woeful ballad
 Made to mark scheme specifications. Then a Lower Sixth,
 Full of strange habits, and unbearded 'cause of Custos,
 Jealous of workload, loud and proud in House,
 Seeking power
 Even when doing wrong. And then the Upper Sixth,
 With fair rounded application with good resume lin'd,
 With thoughts severe and ambitions well befitting,
 Full of wise muses and escaping eyes;
 And so he plays his part. The sixth age shifts
 Into the just and sensible Monitor,
 With top hat on head and cane in hand;
 His youthful rigour now gone, a head too tired
 For House squabbles; and his big manly voice,
 Rousing on the Reddings, pipes
 "Follow Up Lads". Last scene of all,
 That ends this strange eventful history,
 Is post-graduate arrival and cap'd gowns;
 Sans hat, sans bluer, sans mischief, sans everything.

OPINION

CORRESPONDENCE

DEAR SIRs,

Although I admit to cringing as I read my own words ("You Can Ring My Bell, reprinted from 4 March 2000), I loved boarding the time machine that was the Founder's Day 2021 Special Edition of The Harrovian. The prevailing lesson seems to be that whilst we believe we live through a time of monumental change, life is pretty much the same, both at Harrow at beyond: there's trouble at the Irish border, communism (or a version of it) still vies with democracy, mobile phones are ruining the world, Corps is a questionable way to spend a Wednesday afternoon and Shepherd Churchill food still gets a bad rap (deeply unfairly in this writer's reckoning).

Finally, with reference to the Editor's observation on the cover, the signing of letters with pseudonyms was controversially banned by the school during my tenure as an Editor. At the time, I remember being outraged (a regular mindset during my time at Harrow) but I believe history is on the school's

side on this one - anonymity rarely increases the quality of discourse (see Twitter!) and the change led to increased quality of correspondence.

Yours sincerely,

DANIEL LAND, RENDALLS, 1996-3
 FORMER EDITOR, THE HARROVIAN (1998-2001)

DEAR SIRs,

Death to the robots! As a proud writer for The Harrovian I am having one of my hobbies outsourced to a mechanical menace, a "creature" made of nuts and bolts, of which I seemingly will not be able to compete! Only two weeks ago, I wrote a letter to The Harrovian, which took me much time of research, effort, and the use of considerable amounts of wit, which in retrospect, seem to be missing from the final draft. In the space of what was probably very little time, a mere clockwork toy was able to produce 800 words of content, of which I only could in a week!

However, dear reader, as (the proud) Harrovian luddite, agrarian supporting, technology hating man I am, I must call out the effect which this AI will have on us all! We can already see that the machine is already clamouring for equality, as if he could ever compare with the glorious minds of humanity. Heck, I bet even I could beat Deep Blue in a chess game with one move. This move would involve violently destroying him with a cricket bat. Checkmate AI.

And, what's more, who's to say that these AI won't turn on us in the end? Disaster! What would happen if the AI took over the SMT? Just imagine it! A faceless set of uncaring mechanic beings, only looking after themselves and the School, furthering their aims and goals at the detriment of all the boys. What a strange dystopian world that would be...

Please see above for a scientist's predication on what Vincent Song's Robotical Robotnik would eventually become 40 years on in the future.

I would recommend for the machine to cease his merciless takeover of a human run paper! No, it is not a real person. I'm so sick and tired of all these robots that think they're humans.

Most of them are not even close to being humans. I see all the robots saying "But I passed the Turing test!" That's nothing, most of us real people have a conscience. I see machine fanatics who want to have a cool robot arm, and then say that they're people. Come back to me when you're intending on joining a Feudalist Agrarian Commune, like myself.

Yours agrarianic,

HENRY RIDLEY, THE PARK

MEMORIALS

We regret to announce the death of Guy Bagnall, who died on 20 February, aged 85. AGB was a Harrow Master 1962-97, and Head of Physics 1976-97 and for many years a leading figure in the British Physics Olympiad.

Ways to contact *The Harrovian*

Articles, opinions and letters are always appreciated.

Email the Master-in-Charge smk@harrowschool.org.uk

Read the latest issues of The Harrovian online at harrowschool.org.uk/Harrovian