

THE HARROVIAN

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FOX TALBOT PHOTOGRAPHY COMPETITION

It was with marvellous excitement that the prestigious Fox Talbot Competition, an anticipated highlight of our Arts Calendar, was to go ahead this year in person, summoning boys and beaks alike from all corners of the Hill. Generously sponsored by Richard Petty, this display of photographic talent across the School was extremely impressive, especially because of the peculiar complications of the last 18 months (it seems even a pandemic couldn't stop the epic escapades of many lucky Harrovians). We were particularly fortunate to be hosting three distinguished judges – tasked with adjudicating a convincing cohort of 130 entries.

We were joined by Clive Barda (OBE), famous for his work with the Royal Opera House, the Royal Shakespeare Company and the National Theatre. His initial reaction to the exhibition spoke highly of it's 'tremendous variety'. We were also lucky to welcome Clare Park (MA), a portrait and fine art photographer, whose work has been exhibited at the National Portrait Gallery as well as the V&A Royal Photographic Society Collection. We were also very pleased to be accompanied by Genevieve Stevenson, a London-based artist with the ability to capture her subjects in a dream-like and ethereal way, who has worked with designers such as Halpern, Phoebe English, Ryan Lo, Richard Malobe and many more. The Granddaughter of a Harrovian, she expressed how 'behind every photo is a thought process, searched and chosen by an individual'; it was with this in mind that she explained her excitement to once again look 'through the eyes of student'.



Senior Winner – James Gibbons, *West Acre*, 'Two Faced'

Following the introduction from the icon that is DRJB, Head of Photography, the Pasmore Gallery fell quiet in anticipation of the winners and runners up which were to be announced in both the Senior and Junior categories. Achieving first place in

the former was James Gibbons, *West Acre*, with his spectacular photograph *Two Faced*. This terrific family portrait, and deserving winner, featured his father and sister and was both striking and intriguing, a superb hyper-reality image which is a fine example of a successful montage. The judges commented on the 'intensity of the family bond' between the two subjects, reflecting how it evokes the experience of many in lockdown in the UK due to COVID-19.



Senior Runner Up – Rufus Hunter, *Rendalls*, 'Looking Out'

The theme of lockdown was continued with finesse by both the runners up in this category. Rufus Hunter, *Rendalls*, was commended for his photo *Looking Out*, a poignant black and white image of his sister sitting on a windowsill, gazing outside. The composition communicated a sense of hope that was utterly captivating.



Senior runner Up – Harry Tack, *Newlands*, 'Escape'

Similarly, Harry Tack's, *Newlands*, photo *Escape*, a self-portrait montage, equally commanded attention. Tack sought to explore how 'by reading, someone can be transported away from

reality into a new world'. The powerful sense of movement in the image also contributed to the way in which the subject appeared to be having an otherworldly experience. Before moving on, the judges praised Hugo Heffer, *Elmfield*, for his dramatic photograph *Pigeon*.



Junior Runner Up – St John Smith, Newlands, 'Evening Sunset'

In the Junior Category, St John Smith, *Newlands*, rose to victory for his mature entry *Evening Sunset*. The judges felt transported by what they described as a 'visual poem', amazed by the combination of everyday life with the magical sunset. The almost supernatural lighting and blossom, coupled with the simplicity of the garden, created a beautiful stillness providing a somewhat inspirational atmosphere. This was a strong submission from a Remove, showing promise for the Photography Department in years to come.



Junior Runner Up – Daniel Eldridge, The Grove, 'A Day in London'

The first of two runners up in the Junior Category was Daniel Eldridge, *The Grove*, who's photograph *A Day in London* attracted recognition from the judges for its excellent framing of the focal tree in the bottom of the frame. The disappearing horizon and enormity of the buildings within the image conveyed

the sheer scale of urban London, simultaneously highlighting the splendour of nature. The judges were curious as to whether the photo would have been taken had the magnificent tree not been there, which they suspected was the key to the stunning photo's success.



Alexandros Aldrich-Blake-Ouzounis, West Acre, 'Polzeath'

Gaining similar plaudits, also being awarded runner up, was Alexandros Aldrich-Blake-Ouzounis, *West Acre*, for his image *Polzeath*. This glorious landscape captured the wonder of Cornwall many a Harrovian will be familiar with, specifically the wonderful Polzeath Beach. The drone shot included some incredible colours, and no doubt demanded some intelligent piloting skills.

Salutations must go to all the individuals who received awards, each offering very strong photographs. While only a few were able to be given such titles, the judges were keen to make known how impressed they were by each and every entry. The writer of this article would also like commend to the following for entries of note: from the seniors, Cameron Yarrow, *Druries*, Marc Lindgren, *West Acre*, Shubh Malde, *Elmfield*, Roger Litton, *Newlands*, Freddie Gregory and Hugo Gaffey, both *Moretons*. From the juniors, he would also like to commend Arsene Cherpion and Elliot Taylor, both *West Acre*.

Finally, thanks of course must go to all three of the judges for kindly agreeing to take part in this event. As a leaving word of wisdom, Clare was keen to share with any budding photographers three quick tips: 'don't dismiss the obvious, keep it personal and look from every angle'. Thank you also to DRJB and to the Art and Photography Technicians for both organising and making the event take place.

TEAM ENIGMA & COMPUTER SCIENCE SOCIETY

Vincent Song, The Head Master's, "Natural Language Processing", 20 May

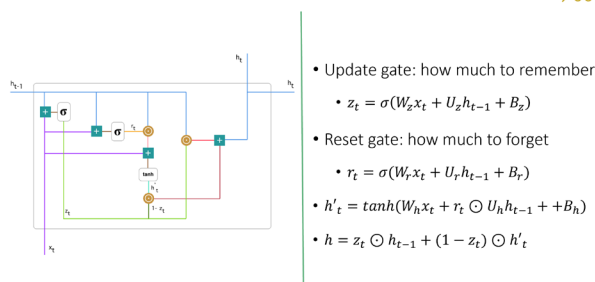
Following a successful lecture on the fundamentals of artificial intelligence, the Computer Science Society was eager to attend Vincent Song's, *The Head Master's*, second lecture in the three-part AI lecture series from the School's AI group, Team Enigma. As before, Song eloquently explained the models and mathematics involved in the natural language processing field of AI, which deals with the manipulation and comprehension of human text by machines. The lecture was accompanied by an exhilarating practical session, where participants coded a recurrent neural network that produced Shakespearean verse.

Song began by offering examples of algorithms that engage in natural language processing. Joking that boys studying foreign languages would be all too familiar with applications like Google Translate, Song also introduced more cutting-edge algorithms,

such as one use of the GPT-3 model that produces programming code to match a user's text input. Applications like Gmail now use natural language processing to try to complete sentences for the user, predicting their next words. Song explained that today's lecture would focus on similar algorithms, which generate text by repeatedly predicting the next word.

As computers cannot actually read human text, words must be converted into 0s and 10, which are more suitable for them to work with. How exactly to transform these words poses an interesting problem: the sentence needs to be accurately conveyed and the computer must be able to form meaningful relationships between words. One approach, a 'bag of words', simply tells the computer whether each word in the dictionary came up or not. Unfortunately, this does not allow the computer to meaningfully understand the sentence.

GRU: GATED RECURRENT UNIT



However, a truly ingenious solution does exist: 'word embedding'. By training itself on large data sets of text, the computer can formulate representations for each word in vector space, putting similar words in geometrical proximity, and letting certain vectors sum to create others. For example, words like 'charger' and 'battery' may be geometrically close together, whilst a short horizontal vector may always connect countries and capitals. Short diagonal vectors could represent a switch from a masculine to a feminine noun (e.g. King to Queen), and other vectors may consistently connect the different tenses of the same verb. This innovative approach allows the AI to form meaningful relationships between words and genuinely progress towards understanding human text.

Of course, producing an artificially intelligent model that can work with these vectors is another challenge altogether. A typical neural network would not be able to deal with long-term dependencies, such as when a sentence refers back to an earlier part of the text. Furthermore, typical neural networks, as explained in Song's last lecture, would not be able to share parameters: the 'top' neuron in the first layer may learn the beginning of sentences and the 'bottom' neuron the endings, but this would prevent the AI from deriving the same meaning from "I ate dinner last night" and "last night, I ate dinner".

Song fielded input from the audience on potential solutions, discussing various alternative models. Ultimately, he revealed the most effective contemporary model: a recurrent neural network. This takes in text one unit at a time and maintains a 'hidden state', which it uses to aid computation of the remainder of the text. This 'hidden state' functions much like a human's short-term memory, giving the computer insight into more complex sentences.

As described in his last lecture, the model is fine tuned by calculating the 'loss': how far off the algorithm's results are from the desired output. One can then determine how changing a specific neuron's weights and biases impacts the final result by taking a partial derivative for each step back from the end. However, taking so many partial derivatives results in an expression that keeps growing smaller, resulting in a 'vanishing gradient' problem, practically preventing the first few layers of neurons from receiving meaningful information that they can use to fine tune themselves. A solution arises in the form of a

'gradient highway': whilst the earlier explained hidden state is usually passed through many operations, a gradient highway removes these barriers and allows the AI to more effectively regulate the internal flow of information, getting around the vanishing gradient problem.

Song explained that the introduction of these recurrent neural networks proved to be a major breakthrough in machine learning and was the catalyst for the dramatic take-off of the natural language processing field. However, he argued that another breakthrough, 'attention', is the real gamechanger. In the case of AI, 'attention' enables an AI to directly refer to earlier parts of a text, directly accessing specific information rather than relying on the hidden state to provide context. For example, this could allow 'it' to check what the word 'it' in this sentence specifically referred to.

Having thoroughly explained the theory behind natural language processing recurrent neural networks, Song directed the audience towards an online shell of the code, inviting them to solve a puzzle by arranging the model correctly so as to fit the presented structure. Participants watched as the AI performed billions of calculations to learn from the sample Shakespearean drama and noted its constantly decreasing 'loss' or ever-improving accuracy. Finally, the audience enjoyed entertaining samples of text the AI produced, crafting Shakespearean verse with society members as characters:

'DUKE VINCENTIO:

*It is not my consent,
To whom they are bestowed by conceal's cheeks
Proceed: the winds of his most chief,
I'll straight thee to the duke:
In the day, speak thou, from this rage,
Provoked by this caparison,
Have I not believe my state.*

GLOUCESTER:

*But I have been as piercing thus and the
Second bethinks with care, by the name of wice:
I' the devil' the king at me,
My sighs reconceded at season that she
shall have murderer thee to the substituting
Master slew my face the father.*

PETRUCHIO:

*Why, then I should lay thee of this garden,
Is not the world turn thou the fire,
I am content: if in this cause
Of graceful friar so in all the edit.'*

Song is to be thanked for his engaging and informative presentation, explaining a major contemporary application of AI. Thanks also go to CMC for organising the talk. Boys interested in getting involved with artificial intelligence projects are invited to join the School's AI group, Team Enigma, and are advised to contact Vincent Song.

PSYCHOLOGY SOCIETY

Sam McGougan, Bradbys, 'The Myers-Briggs Type Indicator: A study of ourselves', 13 May

This week, the Psychology Society welcomed Sam McGougan, Bradbys, to deliver an intriguing talk on the MBTI (Myers-Briggs Type Indicator). This was a very fascinating introduction to personalities and how each type differs from another.

The MBTI is based in 16 personalities and these personalities are formed by splitting eight 'features' and, depending on

how these eight features are distributed and pieced together, we get a different resulting personality. To start off, we have the Introversion and Extroversion spectrum. This is common knowledge to most of our readers and to the audience, however it is not as simple as introverts don't like to talk and extroverts like to talk. This spectrum is based on how energy is received; extroverts like being in large groups and social situations because they are energised by people; on the other hand, introverts find these situation draining of their energy and find small groups and situations with fewer people energising, allowing them to recharge. There are, then, the thinkers and feeler. The thinkers are more analytical and make their decision on objective pros and cons. The feelers, as you may have guessed, are the opposite; they are generally more sensitive and make their decisions based on their own personal values and morality. The next spectrum is the sensors and intuitives. Sensors are realistic people that focus on facts and details, while intuitives prefer to think outside the box for possibilities and creativity. Finally, there are the judges and the perceivers. The judge prefers to follow the rules and is usually organised and has everything planned out ahead of time. The perceiver is more flexible and keeps their options open so they can act upon opportunities on the spot.

These eight 'features' make up what are called the 16 personalities. For example, the personality of 'Architect' is called 'INTJ'; 'I' being there to represent introversion, 'N' for intuitives, 'T' for thinker and 'J' for judgers. The 16 personalities are split into four groups of four; the 'analysts', 'diplomats', 'sentinels' and 'explorers'. The analysts consist of the four personalities of architect (INTJ), logician (INTP), commander (ENTJ) and the debater (ENTP). They all share the intuition and thinker trait, meaning this group of personalities always looks for more possibilities and creativity whilst valuing the objective pros and cons these creative ideas may have. Famous analysts include Elon Musk (architect), Bill Gates (logician), Steve Jobs (commander) and Tom Hanks (debater).

The diplomats are split into the following: the advocate (INFJ), mediator (INFP), protagonist (ENFJ) and campaigner (ENFP). They all share the intuition and feeler trait, meaning they are very similar to the architects in the way they like creativity, but the diplomats prefer to make these creative decision based on their own values and what good it may bring to others. Famous diplomats include Nelson Mandela (advocate), William Shakespeare (mediator), Barack Obama (protagonist) and Will Smith (campaigner).

The sentinels are divided into the following: logistician (ISTJ), defender (ISFJ), executive (ESTJ) and consul (ESFJ). The trait that the sentinels all share are sensor and judge, this means that sentinels are very organised and realistic people, preferring set rules and a closed environment rather than working on the fly. Famous sentinels include George Washington (logistician), Queen Elizabeth II (defender), Frank Sinatra (executive) and Bill Clinton (consul).

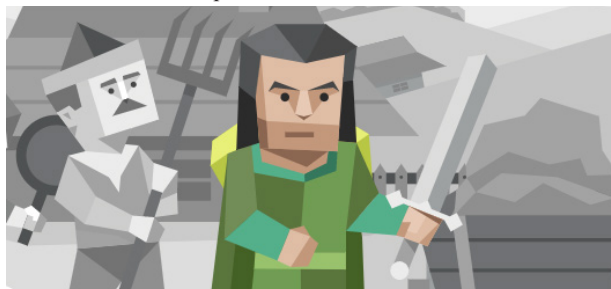
Explorers are split into the four consisting of virtuoso (ISTP), adventurer (ISFP), entrepreneur (ESTP) and entertainer (ESFP). They all share in common the sensor trait and the perceiver trait. This tells us explorers like to focus on facts but are more flexible and open-minded compared to the sentinels. Famous explorers include Bear Grylls (virtuoso), Michael Jackson (adventurer), Samuel L Jackson (entrepreneur) and Elton John (entertainer).

McGougan wrapped up the lecture with an assessment on the MBTI. The traits such as introversion and extroversion are not discrete where it's either one or the other; in fact, most people are dominant in one trait but still show hint of the other trait. We can have traits such as ambiversion, which is when you lie between introversion and extroversion. Many factors in the environment also affect and change our behaviour, resulting in differences in our personality. Via SMK's email, you can complete a quick MBTI yourself and you'd be quite surprised with some traits you find yourself having.

HARROVIAN PERSONALITY

Results are in – it seems we're perfectly normal

Last week, SMK sent out a link to the online Myers-Briggs personality test, along with a survey of the School. He wanted to know, "Is there a particular personality type that is dominant among Harrovians?" It's never a bad idea to conduct psychological tests on Harrovians, since most of them appear mad most of the time, anyway. SMK was surprised to find out, that, unexpectedly, Harrovians generally appear to be normal. All four key categories had nearly equal presence in the School. The only personality type which did have a slight edge over the others was the diplomat, which was around 35%.



The diplomat personality types tend to care about helping and connecting with others. They prioritise being kind and generous, and, in general, they would rather co-operate than compete. Empathy seems to come naturally to these personalities. It can almost seem as if their hearts and minds resonate with other people's emotions. Diplomats also aim to understand themselves and others. They often have deep insights into human nature, and they can use these insights to influence the people around them. Fortunately, diplomat personality types tend to do this with care. They are sensitive to other people's feelings, and they want to nudge the people around them in positive directions.

The second biggest group was the analyst category with about 27% of the general Harrovian population, and the two groups, sentinels and explorers made up the rest of equally. With over 500 boys responding to the survey, it seems to have taken into consideration a good majority of boys.

But, perhaps the diplomat type is the one which is more likely to answer surveys. Wouldn't that make for interesting results?

SCIENCE SOCIETY

June Hyun, West Acre, "Annoying allergies: why do we sneeze?", 5 May

Mid-way through the first batch of routine assessments the Upper Sixth and Fifth Form were sitting, June Hyun, *West Acre*, gave a talk to the society titled 'Annoying allergies: why do we sneeze?' on 5 May. Hyun, as a Remove, was tackling a very complicated topic: allergies and the response of the body to those allergens.

Of course, with spring well under way and summer creeping up on us – though the few days of hail we've had might make you think otherwise – allergies were already a painful by-product of the 'beautiful' weather, hence Hyun began his lecture with a quick bit of audience participation, asking how many in the audience experienced allergies, with about a quarter of the audience raising their hands. Hyun went on to provide the statistic that about 25% of all people experience an allergy, be it a food allergy or simply hay fever. Because of the ubiquity of allergies and his personal experience with his sister, who used to suffer from numerous allergies (though they number fewer now after extended treatment), Hyun decided to give a talk on allergies.

Hyun provided a quick overview of his lecture – beginning with the basic overview of how cells function, then moving on to the different types of hypersensitivity, then to how we become allergic to certain substances and how our body reacts to them by way of histamines. Finally, he would cover how medical professionals can test and treat allergies.

Firstly, for the basic overview of the relevant cells, Hyun focused on three main types of cells: B-cells, T-cells, and mast cells. These are the cells involved in the reaction to allergens, where B and T cells are lymphocytes i.e. they produce antibodies. Secondly, to overview hypersensitivity. Hyun described four main types, though every allergic response is often a mixture of all four cases: types one to three are antibody mediators, whereas type four is a cellular response. Type one hypersensitivities are immediate reactions and involve immunoglobulin E (a type of antibody), also known as IgE. These IgEs are released upon the presence of an allergen due to the presence of foreign antigens on the surface of the allergens. Via the type one route, mast cells are also degranulated, which will be important later.

Secondly, allergen sensitisation and antigen-specific IgE production was covered, where an antigen-presenting cell (10 points to whomever guesses what its job is) or a dendritic cell presents the antigen of the allergen to a naïve T-cell, which then becomes a mature helper T-cell. As someone who doesn't take Biology, the terminology in the past paragraph is a bit overwhelming, but just understand that a cell presents the antigen to an antibody-producing cell, and that antibody-producing cell then begins producing antibodies that combat the allergens. Hyun then flagged up that interferon gamma (IFN-gamma) can reduce the quantity of IgEs produced, leading to a less severe hypersensitivity with less of a cannon-like sneeze and more of a NERF gun-like sneeze. In a similar process to the T-cell, the B-cell, upon encountering the foreign antigen, begins rapid production of IgD and IgM, though, after a class switch recombination (CSR), the B-cells can then produce IgE from the IgD and IgM to react to the pathogen/allergen.

Moving on, Hyun spoke about mast cell activation, degranulation, and the release of mediators. He described two types of mast cells – the mucosal type and connective tissue type. Connective tissue type have a large number of granules (greater detail to follow); few Fc-epsilon receptors, which allow the cells to connect to the IgE; and a lifespan of less than 40 days. The mucosal mast cells, which are only present in the gut and lungs, have fewer granules to release histamines, a lifespan of greater than 40 days, and less histamine per granule. The differences between these two types of mast cells explains why inhalers don't always work with all allergies, as drugs that may be targeted at mucosal mast cells may not be as effective on the connective tissue kind. Penultimately, Hyun went on to explain how IgE can cross link and induce activation in mast cells, which leads to the release of mediators. The allergens connect, or "cross-link" the IgEs and this causes the mast cells to be activated. Moreover, pharmacological compounds and anaphylatoxins can activate these mast cells. The activation itself is caused by an increase in the concentration in calcium cations.

Finally, Hyun explained how to test for allergies. Firstly, there are cutaneous reactions, where the skin will be pricked with a little allergen. If the skin flares up (a type one reaction), we know that the person has an allergy. Then, there are bronchial reactions (asthma) and allergic rhinitis (hay fever), which are the most common allergies, where the latter is H1 receptor mediated, similar to cutaneous reactions. The former is treated with DSCG (disodium cromoglycate – the chemical used in inhalers) and the later with saline drops to suppress the histamines' vascular opening effect. Proper treatment of allergies comes from antihistamines, which are taken via pills and work with H1 histamine receptors, which themselves are in the smooth muscles, the heart, and central nervous system. These must be taken as a prevention, whereas epipens are used to relax the airway muscles by injecting the patient with

adrenaline, increasing blood pressure and easing the symptoms of anaphylaxis.

Overall, Hyun's talk was one of the most in-depth biological talks we've had in the society this year, going into something that 25% of the population can relate to (albeit with some fairly nasty images). Although there were a net three Biologists in the room at the time, Hyun delivered the talk well and responded well to questions, hence all the physicists, chemists, and engineers understood the lecture, which is a testament to the effort put into the lecture's preparation.

JUNIOR PIGOU SOCIETY

Rei Ishikawa and Charlie Ni, both Elmfield, "Reddit Short Squeeze and the Precedent set for Market Manipulation.", OMS,

On a cloudy afternoon in Old Music Schools, Rei Ishikawa and Charlie Ni, both *Elmfield*, gave a lecture to the Junior Pigou Society on the now infamous Reddit short squeeze and the disputed topic of whether this was market manipulation: "Reddit Short Squeeze and the Precedent set for Market Manipulation". A group of keen economists gathered to listen to the two Removes demystify the story behind how retail traders could cause such a disruption to the market and billion-dollar hedge funds.

GameStop's stock price since March 2020



Data: Yahoo Finance

The talk started with a short explanation of what GameStop is, what shorting selling is and why hedge funds were betting the share price would fall. GameStop is a bricks-and-mortar retail electronics store based in America, beloved by millennials, many of whom would have bought their first video games there. Over the last few years, people have increasingly been buying games from online vendors such as Steam instead of going in-store (this was further heightened by the pandemic). Many of these stores all over the US are closing and the share price was heavily hit, dropping 16.4% and reaching a 14-year low. Therefore, it makes sense to assume the share price will sink further through the pandemic and its aftermath, but how do you bet against a stock? That's when shorting comes into play. Ishikawa and Ni used the great analogy of a Pokémon card. You borrow your friend's card then bring it to the shop to sell at current price, say £10. A week later the price has dropped to £5 so you buy a new one at this price and return it to your friend. Suddenly you've made £5 profit. This is what massive hedge funds did with GME shares; it was shorted over 140% meaning a lot of people were banking on the price going down to get their profit.

However, suddenly Reddit joined the picture. To use the Pokémon analogy again, what would happen if the price went up instead of down. You sold the card at £10 and your friend is asking for it back, but the current price is £15, so you bite the bullet and buy the £15 card to return, thereby losing £5 of your own money. That was a 50% increase; now imagine

it in a 1500% increase. This is called a short squeeze and is exactly what happened with GME. You'd be forced to buy the card for £150, losing £140. Attention to GME was spread by celebrities such as Elon Musk and internet forums like r/wallstreetbets on Reddit.

These hedge funds were set to lose millions of dollars and many did lose a lot of money. However, a lot was done to try and limit the money lost. Robinhood (a popular online brokerage) restricted GME so none more could be bought, only sold. There is an obvious dip after this intervention as many panic-sold their shares after hearing the news. Melvin Capital, a hedge fund worth over 12 billion dollars, had to be bailed out of bankruptcy after the short squeeze. This just goes to show the immense impact these young traders had on massive corporations.

Now the question that arises is whether or not this counts as market manipulation. Many rumours were created surrounding GME but there was not one single leader and each trader was participating of their own accord, so no case can be made to call this illegal manipulation of share prices. Was it illegal of Robinhood to halt trading right at the climax of the event? It was quite illegal as they were investigated by the SEC and forced to pay a fine, but they know it is better for them in the long run as they will be known to be reliable to help other rich hedge funds.

This is the first time anything like this has happened on such a scale, so there is no precedent for what the government has to do about it, so we will probably see some legislation come into place about things like this. This was the perfect storm for chaos to happen. Many young investors were eager for excitement, stimulus checks were given out, which put money in the pockets of people who wanted to "fight against" the hedge funds. We have now seen the power that social media holds over the market, and long-time investors won't forget what happened quickly.

To conclude, Ishikawa and Ni answered a few questions on the topic. In answer to who was to blame, we found out that everyone was at fault: hedge funds overextended themselves and retail traders were too "meme" happy. Should hedge funds be held accountable? Ethically, they should be, but the larger they are, the larger their safety nets are – they are too big to be told "no". Will it happen again? Yes, but hedge funds will be more aware and watch the internet forums more carefully. Thus, concluded the first Junior Pigou meeting of the summer term: many thanks to Ishikawa and Ni for their excellent talk.

ALEXANDER SOCIETY

Dr Crowe, *"The Geopolitics of Cyberwarfare: The Hacker and the State"*, 11 May

An eerie stillness dominated the Old Harrovian Room as the bells tolled outside on the silent night of 11 May. In a corner of the room stood a towering figure, his face hidden behind a white Guy Fawkes mask. Cold and emotionless. On the big screen next to the figure, a giant hand, tattooed with electronics and circuits topples a golden chess piece. Next to it were the words 'WWI', 'WWII', 'WWW'.

Welcome to the age of cyberwarfare. Welcome to CMC's latest talk to the Alexander Society.

CMC began by explaining how cyberwarfare is now the dominant technique for global warfare.

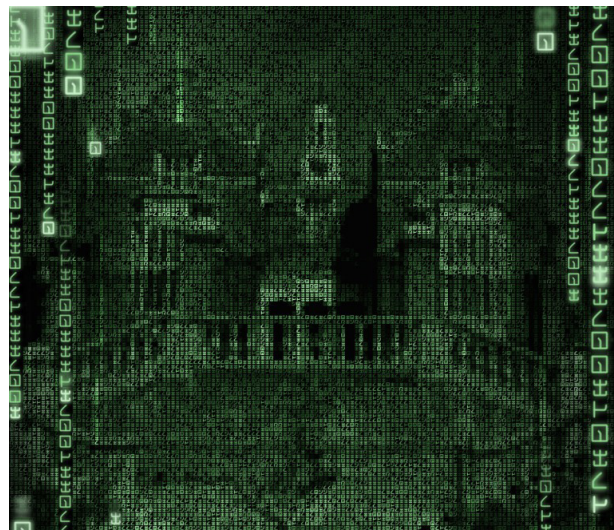
As technology increasingly becomes central to an international race for power and security, it also promises to be one of the most lethal weapons to cripple a country. Moreover, since technology evolves so much quicker than legislation, laws of war simply cannot be updated to cover an ever-changing host of cyber attacks. Cyberwarfare is currently not under the regulation

of any international law, and is frequently undeclared, making it an ideal weapon for any sabotage action.

CMC then explained the important concept of asymmetry: the idea that cyberwarfare benefits lesser military powers as much as military giants. This is because cyber attacks require only a small, dedicated team of developers to construct, yet contain the potential to cause millions of dollars worth of damage. To give concrete examples of cyber attacks in action, CMC went on to explore his list of the most important attacks in the history of cyberwarfare.

The first of these is the Morris Worm of 1988. In a handful of code, a 23-year-old Cornell graduate was able to create a C program that transferred and reproduced itself automatically across the Arpanet (the version of our internet back then). It is believed to have affected 10% of the computers connected to Arpanet, and although it was designed as a harmless experiment, a bug in the code led to it slowing down computers, creating a wave of DoS attacks (Denial of Service). Estimations place its economic damage between 100,000 USD to 10 million USD.

The second example was the first case of a state-to-state cyber attack. In 2007, Estonia removed a Soviet statue in Tallinn, and Russia launched a cyber attack in response, disabling the websites of government ministries, political parties, banks, companies and newspapers. Not only was this an alarming advance in the weaponisation of cyber attacks, but it also led to the creation of the first instance of a 'data embassy', by Ukraine, to keep classified data safe from future attack.



Then CMC mentioned Stuxnet, a stunning full-scale application of hacking to impede another country's development. This was believed to be created by the USA and Israel, although there was no direct evidence (as is customary in current cyberwarfare, nobody needs to claim accountability because there are no authorities pressing for responsibility). It hijacked an Iranian nuclear enrichment facility and delayed the delivery of this vital material for nuclear infrastructure. Moreover, it demonstrated three very common techniques in the cyber attacks world: zero-day exploits (the exploiting of software bugs on the same day it is observed), rootkits (installing and running a program outside a computer's operating system, making its presence hard to detect), and updates (the virus is automatically updated during transfers).

CMC also mentioned several other attacks in recent years, but the most stunning was perhaps another Russian attack on Ukraine, a place which CMC claimed was Russia's cyberweapons testing ground. In 2016–17, Russians hacked into Ukraine's power grid, shutting down the national internet, all government agencies, all hospitals, banks, railways, airports and many companies. The scale and impact of this attack was unprecedented.

So, with recent advances in technology, what would a hypothetical attack look like today? CMC gave a day-by-day

plan for such a cyberwarfare. On Day 1, computer scientists at Harrow gather to write a clever worm which “subverts a power grid’s safety cut-out system”. Then, CMC and DF would choose an unlucky country to receive the worm. Using modern email spamming services, it could be spammed to 20 million people. Day 3, a power grid employee opens the email and their PC/USB stick becomes infected by the worm. Hooray. Day 4 spells the doom of that unlucky country, as the worm is transferred to a PC which controls the power grid, and it shuts down. Boom. Suddenly, without energy, there are no banks, no water, no shops – and protests break out all over the country.

And this is no fantasy. Just last week, an attack on the US oil pipeline led to President Joe Biden to announce a state of emergency. Several fuel stations were deactivated, and not without reference to the timing of this event, CMC used this as an excellent testimony to the reality of the threats presented in the talk.

The risk is very real, but how are we defending ourselves against it? CMC, having consulted a friend of his in the Ministry of Defence, said that the UK has a triple-pronged approach at preventing cyber attacks. First, there is a three-layer firewall system, each with a different design, creating not one but three effective filters that block out virus software. The second approach is using air gaps – where vital infrastructure is disconnected from the internet, and information must be transferred manually. The third approach is simple but effective – making regular backups.

All, in all, many thanks to CMC for delivering such an engaging lecture, its quality reflected by the sheer number of questions at the end (no less than 15 as I recall). While to many of us the idea of cyber attacks still sound remote and foreign, it is very much a reality, and we as a nation need to take action on reducing its risks as soon as possible.

METROPOLITAN

DESERT ISLAND DISCS

The Guild’s Podcast Series with ACO

Last Friday, George Gallagher, *The Grove*, was joined by ACO in a fascinating discussion about her Canadian upbringing, her school-life, and her conflicting passions. ACO’s descriptions of spending weekends telling stories around campfires in Chatham, Ontario, brought me back to my own time in Canada, and her memories of swimming in Lake Erie instilled in me a degree of nostalgia that I have not felt in years (though I must admit the lakes in which I swam were far smaller and colder!). Dwelling on the theme of nostalgia, ACO introduced her first song, which reminds her of her father: *This Old Guitar* by John Denver. Though I had never heard the song before, I could not help but reminisce about ‘the good ol’ days,’ and Denver will most certainly find a place in my iTunes library.

It is no surprise that the conversation soon turned to literature (ACO being an English beak), and it was fascinating to learn that ACO’s passion for the subject was brought about by her grandmother, who continues to send her books today, complete with notes scrawled in the margins. Indeed, in the “middle of nowhere” in Canada and in a time before Netflix, reading became an essential hobby. This love of literature was fostered at school, and ACO notes her teachers as particularly influential in shaping her passions. How poetic that she now passes that gift on to us!

With the light of theatre ablaze in her eyes, ACO introduced her second song: ‘One Day More’ by Claude-Michel Schönberg,

from the musical *Les Misérables*. Thankfully, I was alone in my room as I listened to the podcast, for I could not help but sing along. This served as the perfect segue into ACO’s theatrical inclinations and her time at university studying English Literature and Drama. I was shocked to learn that ACO very nearly studied polisci instead, with the intention of becoming a lawyer; I’m sure that you will agree that she made the right decision! Indeed, her path to teaching English seemed beset on all sides by alternatives, as ACO also considered acting (both on-stage and on-screen, appearing in a reality TV contest to play Maria Von Trapp in a production of *The Sound of Music*), and attended teachers’ college with the intention of continuing a theatrical career.

Revealing a side of herself seldom seen in the form room, ACO’s third song was *You’ve Got the Love* by Florence + the Machine. University was ACO’s introduction to life in Britain (beyond visits to Glasgow in her childhood), and from her vivid memories of dancing to Florence + the Machine it sounded fun indeed, despite her opinion of the country as “freezing cold and miserable all the time” (which is saying something, coming from a Canadian)! On that note, she introduced her final song: ‘Moon River’, by Henry Mancini and Johnny Mercer, from *Breakfast at Tiffany’s*. Once lockdown ends, ACO will be taking a much-deserved trip to China with her fiancé, and should she find herself stranded on a desert island, she notes that she will have plenty of time to practise the piano, and read *Anne of Green Gables*.

WHERE AM I STANDING



Submit your answers to the Editors of *The Harrovian*. There will be six more photos over the term. If you can identify all seven locations that the pictures have been *taken from*, you can win a free pizza.

OPINION

CORRESPONDENCE

Letters to the Editors

DEAR SIR,

What is it that attracts prospective parents to Harrow?

Is it our small army of distinguished alumni? The battle cry of the names of Churchill, Nehru and Cumberbatch? Or is it the excellent record-breaking exam results? Perhaps for some it is the leafy 300-acre estate, encompassing much of Harrow on the Hill in north-west London, complete with golf course and swimming people that the mummies and daddies of money and influence are drawn to, like moths toward a forty-thousand-pound flame. For others it might be the university destination, careers programme or traditional values of Courage, Honour, Humility and Fellowship.

But for many, it is the power to create individuals that is most impressive about Harrow.

As a School, we promise scholarship, opportunity and character, boasting that we create conscientious, free-thinking young men who will be able to go on to shape the world around them. Whether their field be creative, sporting or academic, every Harrovian is unique. We are all different. Many would argue that it is in our difference that we hold power. Many “lesser” schools hold reputations as exam-focused cram factories that don’t look enough at individual development. Indeed, we distinguish ourselves through the different ports of call for individual guidance we offer. Whether it be the wealth of expertise offered through legions of Tutors, hyper-intelligent House Masters or professional support staff, it has always felt like there has been a cacophony of distinguished viziers, ready to deliver guidance on every aspect of one’s life and future.

However, there were two areas in which I felt we, as an institution, could perhaps distinguish ourselves yet further in terms of the guidance we offer on an individualised basis to each and every boy who walks through our hallowed halls.

First lies the importance of the Tutor. At Harrow, Tutors serve as the “first port of call” for boys, speaking to each of them individually once a week to talk about the progress that they are making, and to help guide them towards their ultimate goals at the School. While they now serve as PSHE beaks on the side, their main role is (and will always be) offering less-formal, structured guidance to individual boys. However, in the assignment of Tutors we see what a mostly pseudo-random allocation of beaks is. There is no real School-wide method to deciding who a specific boy will get as their Tutor, except perhaps the House they find themselves in and the whimsical fancies of their House Master. Looking at it from the outside, this looks like it can only be a missed opportunity. Wouldn’t it be great if we could escape from the mandatory dreariness of offering polite conversation with a similarly uninterested beak each week with whom one shares no common interests? Perhaps one way of achieving this dystopian goal would be to assign Tutors not through the randomness of the draw, but through some sort of conscious attempt. Perhaps boys and beaks could fill out some sort of survey of interests, and then be paired accordingly. To tell the truth, there is a limited amount an Art teacher can offer in the way of career and university advice to an Upper Sixth boy who wants to do something as esoteric as biological engineering. Similarly, there are future artists who are wasted on the guidance of biology experts. Given that we have a population of beaks with such a diverse range of sporting, academic and professional experiences, why don’t we capitalise it? I recognise that such a system poses logistical challenges, and perhaps would require doing PSHE in different groups to

Tutor groups, but the quality of individual conversation each week would be vastly improved.

Similarly, we have experimented as a School with a new system for peer mentoring this year. Although it has largely been a success, there is still room for improvement. In looking at the peer mentoring booklet, much of it concerns target setting, reflection and thinking about one’s future in the School. This year, I had the pleasure of being assigned a Remove Swimming OT as my mentee. Through no stage of the process could I fault either of our enthusiasm or willingness to give the project a go. However, I simply couldn’t give him the best possible mentorship. Each week he would come in and tell me the time he was swimming for some sort of stroke, and I wouldn’t be able to understand it. I never knew whether to say “unlucky but you’ll do better next time” or “congratulations”. I had no personal anecdotes of my own vaguely related to swimming, so I was forced to shoehorn in imperfect substitutes. At the same time, I imagine that in another House somewhere there is probably an athletically talented Lower Sixth boy who is being wasted on an irritating self-proclaimed intellectual with an overinflated sense of ego who would be better paired with me. If boys shared what they wanted to get out of the project ahead of time, perhaps they could be better matched to a suitable mentor, which would leave better results. The overlap of interests might even lead to more engagement after the programme has finished. Given that we have similar Lower Sixth interests to Remove ones, this scheme could lead to boys being better matched up. Although it might detract from the goal of bringing Houses closer together, a cross-School approach to peer mentoring would lead to a more useful experience for both mentors and mentees. The material gain is worth the logistical pain.

Overall, using a system in which boys are more deliberately paired with advisors who can tell them what they need to know would make that Harrow individual experience that bit greater, and stop boys from feeling that it is difficult to get the advice they need to meet their own goals. It won’t require perfect matchups. It won’t be a “Tinder for Tutors”. I doubt that every Remove boy knows where they want to go and what they want to do, but if both people “like Rugby” or “are more artist than scientist”, there is at least a starting point.

Kind regards,

DYLAN WINWARD, LYON’S,

HYPOCRISY OF THE AMERICAN REPUBLICANS

A counter-point to last week’s op-ed

Ben Shapiro, a leading right-wing commentator, once said “A man may be judged by his standard of entertainment as easily as by the standard of his work.” Now, while Mr Shapiro is an excellent entertainer, he is all spectacle and lacks factual basis. In this op-ed, I would like to put forward two contentious views: the first on why I did not support Donald Trump and the second on why I believe the Biden administration is not corrupt. I intend to engage with last week’s article by Daniel Sidhom, *The Knoll*, on the absolutism, economy, military spending and the moral values that Trump and Biden exhibit when governing the United States.

To start with, Sidhom describes the fact that Trump ‘reshaped the federal judiciary’ as an inherent good for the United States as if reform is an inherently positive act. Indeed, throughout history, change has been hailed as an end in and of itself, so Sidhom is not alone in the mistake. However, in ‘revolutionising’ the judiciary, one risks breaking with constitutional precedent. Despite being a conservative, Trump’s lack of willingness to participate in even-handed negotiations over appointments as

his predecessors had done (indeed, before the Trump era, most appointments neared unanimity) has created a dangerous new precedent that the executive can infringe upon the judiciary whenever it pleases. Furthermore, it is not a mark of success that Trump appointed more judges: it is merely an indicator that more of the previous judges are dying. Is Mr Obama expected to control life and death? Surely, death is more God's remit. Furthermore, there is the notion that handing over control of minimum tax rates to an international body would be bad because it takes away from the absolute power of the US Treasury. However, this is not an inherent negative either: when the United States has joined the Geneva convention, the International Monetary Fund, NATO and the United Nations, it has made sacrifices for the greater good. Although Sidhom described the work of the distinguished economist Janet Yellen (she has held widely respected professorships at a significant number of leading world universities) as 'untrue and very inaccurate', they are backed up by almost every leading economist in the Western hemisphere. Perhaps, she might be onto something. With the loss of sovereignty sometimes comes the gain of success.



Then, there was presented an economic argument about Trump's 'genius', which seemed to primarily be based on the concept of tax. However, Trump's tax cuts are not a show of economic brilliance either: such fiscal policy is best employed counter-cyclically, with tax cuts smoothing recessions by stimulating the economy. When the US was already in the expansionary phase of the economic cycle, these tax cuts did nothing but widen inequality and swell the federal deficit. In fact, it even weakened the fiscal tools available to combat the 2020 recession. Indeed, 97% of the economists surveyed by the University of Chicago found that his cuts would not boost GDP, and prominent Nobel laureates in Economics, like Krugman and Stiglitz, have publicly opposed them. When it comes to the economy, the verdict is clear: the only things Trump cut were confidence, revenue and jobs. Furthermore, there are many Republicans who think that tax money disappears into a vacuum, never to be seen again by anyone but benefit-seeking drug addicts. However, that simply isn't true. Tax is retirement for the elderly. It is ensuring that an ambulance comes when you call it. Tax funds the underfunded American school system and is the very bedrock of the American dream. The reason we tax citizens is so we can spend money on their behalf, either because it is necessary for us to do so (some measures, like education or vaccinations, only work when done collectively) or when it is more efficient for us to do so. Just because Trump has cut tax doesn't mean people are richer – often they will find themselves spending their mystical \$2,000 on replacing the things they previously got for free because the federal government was paying for it. Rather than 'spending money endlessly', they are 'spending money necessarily'.

Next comes the equally questionable statement that Trump was good for the US military. First of all, there was the concept that Trump was strong on terror because of he defeated 'ISIS's caliphate'. However, it was the foundations set up during the

Obama administration that allowed Trump to come in and clobber a dying fish. It is naïve to think that the direct input of a blond businessmen with no military background wiped out such a major threat in a single year. However, even if Trump were a brilliant strategic thinker, this ignores the fact that the majority of terror in the United States is a problem perpetuated by Trump and his movement. According to the Centre for Strategic and International Studies, 'right-wing attacks and plots accounted for the majority of all terrorist incidents in the United States since 1994'. It is the rhetoric of Trump praising "good people on both sides" that caused 90% of terror attacks between 1 January and 8 May 2020. While Obama and Biden call for gun control, a real strategy for mental illness, Trump is soft on terror, and a cause of crime. Furthermore, his strategy of reducing sentencing and permitting guns only perpetuates the amount of violent crime in the United States. According to Statista, violent crime's all time low (since data began) was not in the era of Donald Trump but his Democratic predecessor. From the party of law and order, that is not what I call law and order. While Trump employs space cadets to unnecessarily colonise land (if it can even be called land) that isn't American, a falling homelessness rate is being converted into a rising one. Rather than do what is useful and necessary for the American people, Trump wastes money on flashy unnecessary party tricks like the Space Force.

Finally, there is the issue of morality. At the beginning of his article, Sidhom described Biden as 'corrupt'. This comes from the supporter of a man who had over 3,000 reported instances of conflicts of interest, who gave tax cuts and cabinet jobs to his cronies, while hiding from the US fiscal authorities. Trump has admitted wrongdoing in his handling of Trump Foundation funds. Six former Trump campaigners and White House aides have been criminally convicted. The US Government spent \$2.5 million at his failing hotels (according to the New York Times) during Trump's four glorious years. Trump conspired with at least one foreign nation (Ukraine) to try to get his opponent's son investigated. Given the allegations of corruption, perhaps Sidhom's brand of Republicanism is hypocrisy at its greatest.

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SPORT

CRICKET

*The School v Harrow Wanderers,
The School lost by 11 runs in a 40-over match.*

	B	R
L Bose * c B Sheopuri b J Connell	116	122
M Wallis c C Ellis b John Koutalides	26	11
Rishi Wijeratne lbw b J Connell	8	3
Rahul Wijeratne c C Ellis b J Nelson	3	0
W Jones † c B Sheopuri b B Sheopuri	13	5
Charlie Witter c b B Sheopuri	10	6
L Harrington-Myers c C Ellis b J Richardson	38	18
J. Langston not out	20	27
Jafer Chohan run out (Unsure)	4	3
J. Owston not out	2	3
Extras		19
Total	217	for 8

	O	M	R	W
C Ellis	4.0	0	27	0
J Gray	2.0	0	6	0
J Connell	8.0	0	41	2
John Koutalides	8.0	0	39	1
J Nelson	5.0	0	25	1
B Sheopuri	5.0	0	31	2
J. Richardson	8.0	0	42	1

	B	R
J Connell c W. Jones † b J Owston	7	6
C Ellis c Rishi Wijeratne b Jafer Chohan	31	29
T Sheopuri *† c W Jones † b J Owston	8	0
V Patel c Rahul Wijeratne b Jafer Chohan	90	45
M Ferreira c L Harrington-Myers b J Owston	85	102
P Ashworth c Jafer Chohan b J Owston	6	1
J Richardson c Jafer Chohan b J Owston	7	7
B Sheopuri b J Langston	2	1
J Gray not out	4	3
John Koutalides not out	0	0
Extras		12
Total	206	for 8

	O	M	R	W
J Langston	6.0	0	25	1
J Owston	7.0	0	37	5
Jafer Chohan	8.0	0	33	2
Rob Nelson	8.0	0	45	0
Rahul Wijeratne	8.0	1	31	0
L Harrington-Myers	3.0	0	32	0

Harrow hosted the Harrow Wanderers on a damp and windy afternoon at the Sixth Form Ground. The Wanderers side formed a typical mix of recent 1st XI leavers and wise Old Harrovian heads and on paper looked like the strongest side the 1st XI had faced this season. The Wanderers won the toss and elected to bat and Lalit Bose went on the offensive right from the first over. The 1st XI seamers battled hard against the Wanderers top order, but Bose continue to bludgeon boundaries around the ground. John Koutalides, *West Acre*, made the first breakthrough for the 1st XI with the score on 38-1 and Brij Sheopuri, *Lyon's*, and John Richardson, *Elmfield*, bowled in tandem nicely to wrestle back control for the 1st XI. Johnny Connell, *Rendalls*, and all three spinners all picked up wickets which helped restrict the Wanderers run rate despite Bose passing 100 at a strike rate

of over 100. Bose eventually departed for 122 which gave the Wanderers 217 runs from their 40 overs.

The 1st XI openers walked out to the middle to start the Harrow response and Cameron Ellis, *Rendalls*, got Harrow off to an explosive start. The Harrow top three all fell to good bits of bowling from the Wanderers openers and this left Harrow at 46-3 off 10 overs. Max Ferreira, *The Grove*, and Veer Patel, *The Knoll*, walked out to the crease needing over six runs an over for the remaining 30 overs. They both rotated the strike freely off the Wanderers spinners and brought a calming presence to the 1st XI chase. Ferreira passed 50 and then looked to take the Wanderers bowlers on, launching into anything on his pads and landing multiple sixes over the road into the Jackson ground. Patel was content to continue rotating the strike and giving Ferreira the chance to attack and before long the 4th wicket partnership had passed 100 and the Wanderers looked under real pressure. Jafer Chohan returned to the Wanderers attack to remove Patel for 45, but Ferreira continue to tuck into the bowling, going to 100 with another towering six over the midwicket boundary. Harrow required 21 from the final 15 balls and looked the favourites until Ferreira finally failed to connect cleanly with one, out caught for 102. James Langston closed out the innings tidily for the Harrow Wanderers which left the 1st XI 11 runs short at the end of their 40 overs. Ferreira's knock was one of the best that the 1st XI has encountered this season against a very good bowling attack. The 1st XI will take plenty of confidence from this tight contest against a high-quality outfit and will look to push on once again against Eton this Saturday.

The School v Various, 22 May

*Yearlings A v The John Lyon School
Middlesex County Cup, Harrow won by 3 wickets*

Tom Campbell Johnson, *Druries*, 3-10, Harry Owens, *Rendalls*, 28

Teddy Barnett, *Rendalls*, won his fifth toss of the season and, with clouds looming overhead, decided to have a bowl. The opening bowlers James Lester, *West Acre*, and Henry Porter, *Moretons*, bowled well and restricted the John Lyon batsmen from scoring. As had happened so often this season, the scoreboard pressure was too much for the opposition batsmen and Henry Porter was rewarded with a wicket. Some superb fielding at short extra cover by Edward Swanson, *Druries*, kept the dot balls coming and out of frustration one batsman decided to try and go over the top. This led to the catch of the season so far from Tom Campbell Johnson, *Druries*, at mid wicket, diving up and away to his right. Tom then followed up his superb fielding with an excellent bowling display to end with figures of 3-10 to add to his catch and a run out. Another brilliant run out by Sam Winters, *Elmfield*, kept the momentum with Harrow and the team looked set to bowl an opposition team out for the first time this season. A spirited display by John Lyon's 10th wicket partnership meant this would not be the case, as they scored 19 runs in the final two overs.

Despite the slowness of the pitch and the outfield, the low total of 76 that they were chasing gave the Harrow batsmen confidence. However, the difficulty of the chase was soon highlighted when Miles Herron, *Rendalls*, the top run scorer this year, was undone by a ball that stuck in the pitch. Harry Owens, *Rendalls*, and Henry Snow, *Rendalls*, steadied the ship and kept the side comfortably above the required run rate. After the dismissal of Henry Snow, Harry Owens continued to score positively through the leg side and was perhaps unlucky not to have seen more reward for his shots due to the slowness of the outfield. He was eventually dismissed for 28 runs. John Lyon sensed that momentum had swung their way and began to pile pressure on the Harrow batsmen. Another wicket fell quickly and Harrow's scoring rate grounded to a halt as the batsmen

struggled to score off good balls. Despite some poor/lack of running towards the end, Harrow were able to see it over the line with the skipper Teddy Barnett scoring the winning runs.

4th XI v Berkhamsted School, won by 5 wickets
Berkhamsted 97 for 7, Harrow 99 for 5

Junior Colts A v St Paul's School National T20 round 2

St Paul's 80 for 5 v Harrow 83 for 4, won by 6 wickets

An excellent bowling and fielding performance from the JCAs restricted St Paul's to 80 in their 20 overs. The excellent display in the field was followed up with a match winning opening partnership of 51 between Charlie Nelson, *Bradlys*, and Caspar Baker, *Moretons*.

Charlie Hope, *Rendalls*, 2 for 6, Philip Edstrom, *Bradlys*, 1 for 5, Ben Taylor, *The Knoll*, 1 for 13, Freddy Dinan, *Rendalls*, 1 for 13. Charlie Nelson, *Bradlys*, 45, Caspar Baker, *Moretons*, 25

1ST XI V ETON, AT LORDS

Harrow 153 all out, Eton 155 for 6
Lost by 4 wickets

Veer Patel, *The Knoll*, 47, Brij Sheopuri, *Lyon's*, 2 -29, Jasper Gray, *Newlands*, 1-19

Full match report to follow on after Half Term.

TENNIS

1st Team v Bradfield College, Lost 3-6

Harrow played some high class tennis against an outstanding Bradfield who had just won the Independent Schools League. All three pairs won a set each, which was a fine effort. Ciaran Timlin, *Bradlys*, and Thomas Cheah, *The Head Master's*, were the closest to winning a second set, losing 5-7 to Bradfield's 2nd pair.

The 2nd Pair of Cameron Timlin, *Bradlys*, and Finn Matheson, *Druries*, and the 3rd Pair of Federico Ghersi, *The Head Master's*, and Hugo Anderson, *Newlands*, all showed encouraging form ahead of our showpiece RHWMT tournament on Saturday.

2nd Team v Bradfield College, Won 5-4

A nail-biting end to a well-balanced fixture came with Hanno Sie, *Newlands*, and Felix Majumdar, *The Knoll*, playing against the Bradfield 2nd Pair with the match poised at 4-4. Sie and Majumdar took the game to a tie break, saved a match point, and eventually won a thrilling rally to secure the set that gave us a 5-4 win. Adam Chambers, Jack Hargreaves, both *Rendalls*, Henry Oelhafen, *Lyon's*, and Yannis Chatzigiannis, *The Park*, all played their part in very challenging conditions. Very well done to all concerned.

Junior Colts A v Bradfield College, Won 5-4

The JCA team were sheltered from the inclement weather within Bradfield's indoor tennis centre. Pair 1, Mostyn Fulford, *The Knoll*, and Hugo Maclean, *West Acre*, won in straight sets, only dropping one game against Bradfield's 2nd and 3rd Pair before getting their teeth into an exciting set against Bradfield's 1st Pair. Here, they set in for a powerful duel, emerging victorious

after a tie break. After two losses, the 2nd Pair of Oliver Jones, *West Acre*, and Jack Scott, *The Park*, saw off Bradfield's 2nds 6-1, clinching the victory for the A team.

Junior Colts B v Bradfield College, Won 6-3

The JC B team faced unseasonably cold, wet and windy conditions on the outdoor clay courts. After the first round, they were 2-1 up, but Bradfield fought back in the second round, equalising to 3-3. This meant the match depended on each pair beating their equal opponents in the final round, something achieved by all three pairs, clinching a 6-3 victory after a two tense tie breaks. Congratulations to 1st Pair, Arthur Porter, *Druries*, and Elliot Chua, *The Knoll*, who won all three of their sets.

Junior Colts C v Bradfield College, Won 6-3

The JCC team also found themselves out in the cold on the clay courts, battling not only their opponents but also the slippery conditions. The boys took a little time to warm up, conceding two sets in the first round. Pleasingly, they built their momentum, winning two sets in the second round, and all pairs went on to beat their equal opponents in the final round, securing a 6-3 victory. Congratulations to 1st Pair, Oscar Wickham, *The Head Master's*, and Misha Newington, *Moretons*, who won all three of their sets, only dropping eight games across the whole fixture.

Yearlings A v Bradfield College, Won 5-4

Yearlings B v Bradfield College, Won 6-3

Yearlings C v Bradfield College, Harrow Won 6-3

1st Team - RHWMT Tournament held at Harrow Harrow Won 200-196

Harrow 214; Radley 200; Marlborough 81; Wellington 77

What a great afternoon of tennis. Harrow battled superbly against some strong opponents. Lead from the front by Ciaran Timlin, *Bradlys*, the whole team stepped forward and won every game they could. A strong Radley side was well beaten by the team spirit and depth of Harrow's squad. Well done to all.

2nd Team - RHWMT Tournament held at Radley, Won 148-120

Harrow impressed with some excellent tennis in the RHWMT Tournament away at Radley on Saturday. All players played singles and doubles matches, and every game counted. The team won against all three schools they were competing against: Radley (46 -26), Marlborough (50-22) and Wellington (52 -20).

Junior Colts B - RHWMT held at Marlborough, Won 134-87

Yearlings A - RHWMT Tournament held at Harrow, Won 177-144

A very impressive performance: the team all performed very well to win the tournament against Wellington, Marlborough and Radley. Notable mentions include Jayden Lim, *The Head Master's*, Xander Jones, *West Acre*, and Adam Wong, *The Park*, who were all unbeaten today in their singles matches, while Algy Royle, *Rendalls*, Jones, Freddie Harrison, *Moretons*, and Wong won or drew all of their matches today.

Yearlings B - RHWMT Tournament (Radley), Won 149-110

The Yearlings got off to a flying start with our first round against Radley, showing a strong Harrow performance resulting score of 51-21. There were some particularly good singles wins for Tianyi Zhou, *West Acre*, and Hugo Evans, *The Park*, in this round. The second round against Marlborough saw stiffer opposition but the Harrow yearlings held their nerve and concentration to take

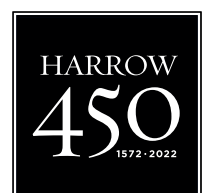
the win 46- 26. The doubles matches were very even with only George Maia, *Druries*, and Tom Barrett, *The Knoll*, securing a 4-2 win (all the others ending in a draw). However, Harrow dominated the singles and there were some great victories from Awni Dajani, *Moretons*, and Charlie McDowell, *The Knoll*. The final round against Wellington proved to be straightforward and decisive, with superb focus maintained by all eight of the Yearlings players through to the very last ball. A great doubles win from Oscar Bearman and Charlie Allday, both *Moretons*, together with excellent singles matches from Maia, Evans and Barratt sealed the deal and gave us a 52 -26 score in the final round. A really well deserved first place for the Yearlings B in this tournament. All eight players played really well and maintained a competitive spirit throughout.

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



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REFOUNDING OUR FUTURE