

STUDY ASSOCIATION

G E W I S

The background of the entire image is a photograph of the interior of a cathedral, featuring numerous stained glass windows depicting various figures and scenes. A large, solid yellow rectangular block covers the upper half of the image, partially obscuring the windows. In the lower half, a smaller yellow square contains the text.

THE
GOLDEN
EDITION

EDITORIAL



Dear Supremum reader. As you are currently reading this, it means that you have our brand new Supremum in your hands. I hope you will love reading it as much as we loved making it. It's not just a new edition of the Supremum, it's the first edition of our 50th volume.

EDITOR IN CHIEF Nadym van Schaik

50 years is a long time ago. Just to give you an example, 50 years ago, the first advertisements were broadcast on Dutch television. Also, the first residents of Lelystad moved into their houses, and our current king Willem-Alexander was born. If this isn't proof enough that the Supremum is old, then I don't know what is.

Recently, the committee got a couple of new members, who did their absolute best to learn everything they could about writing a great article and designing the pages that make the Supremum. I cannot express how proud I am of all the members of the committee for the work they have done over the last couple of months. They have put their time and creativity in numerous amounts of tasks to put this very special edition together.

We all hope you will celebrate this very special year with us. If attending activities isn't enough for you, you could always write articles, or come and join the committee. There are enough options for everyone, but it all starts with this Supremum edition.

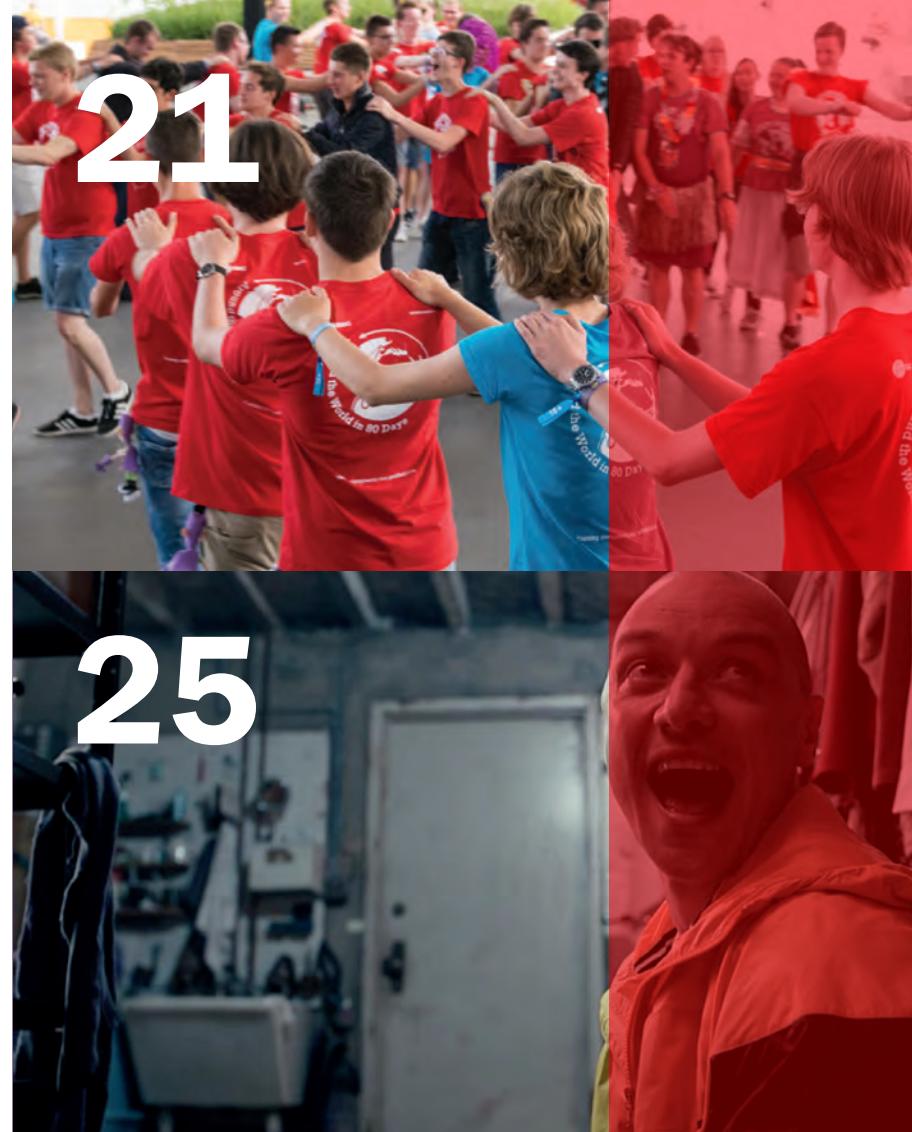
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CHAIRMAN'S NOTE

Three months have passed since we switched boards. This means that we already have left a quarter of our board year behind us. In the beginning, the 36 struggles got real and every day we were facing a lot of questions. Although we are starting to get used to the daily routine, we keep on learning new things every day. We work very hard to reach the gold. But the main question is: What is the gold? Is it gold when you have managed to fulfill your task perfectly? Do you have gold when you have done all your todo's so that you can treat yourself with going to a party? Or is the gold just the liquid we can find in our glasses every Thursday afternoon?

TEXT Laura Kuntze

Compared to our 'sister-' and 'niece-associations', our switch of boards is quite early. In the beginning of September, we can watch all our colleague boards members change. We see them struggling for gold, just like us and luckily we can give each other tips on where and how to find it. The month of September and the beginning of October is called the constitutional season. In this period we have a lot of inauguration drinks with a lot of gold, where we congratulate a group of people on becoming the new board. Some days there are even 3 transitions at the same evening so then we have to split up. We have enjoyed the drinks a lot, because we got to know lots of new people and the stories we could tell afterwards were gold.

Making sure the contact with other boards is good is also important for GEWIS, because we meet with them at a lot of formal meetings. An example of such a meeting is the 'boekenoverleg' where we discuss the book sales. We give each other tips and we talk about how we sold the books and how that process went. In our case that was the 'boekenborrel' we organized in cooperation with the BAC. We help each other, because finding the gold together is easier than alone!

At the moment, almost all constitutional drinks are done and we are getting more used to our daily routine. This is the moment we use to put more effort in one

of our cornerstones: personal development. As a board, we think it is very important that all students develop the soft skills they are not likely to learn when studying from a text. When improving them, they can get the gold out of themselves. During the last weeks, Merel has been looking for ways to bring existing workshops under the attention and to set up trainings with TRAIN. An example of already existing workshops are the "Skill Sessions" of Wervingsdagen. These workshops are varying from the basics of Photoshop till speaking like Obama and they are not only instructive, but also very entertaining!

“ I think everyone should be able to find their own gold ”

I think everyone should be able to find their own gold, which could be achieved in many ways. You should just look for the way that fits you the best. I am very proud of the Supremum because they were able to achieve their own gold this year. They redesigned the Supremum and this year, they have reached the age of 50 years! Congratulations and thank you for everything that you have done in the past 50 years! That you may find more gold in the future!

EDUCATION FIRST

I t is an honor for me to write this article for you, since it is my first article that I have ever written for the Supremum! Let me start by introducing myself: I am Luuk Meeuwis, and since 1 July 2017, I am the Educational Officer of GEWIS. You might be wondering what this function involves, except for handling Sjaars Rick's complaints about USE... I will give you a brief summary of this.

TEXT Luuk Meeuwis

As you can imagine, there are multiple 'levels' of bodies within the TU/e: university-wide, Bachelor-wide, departmental bodies, program bodies, the 'kringgesprekken' (so program bodies for each study year) and a GEWIS body (the Student Council or SR for short). All these bodies discuss topics that are related to the level of the body, and certain topics are of course discussed in each body. The opinions of the people in these bodies lead to an opinion of the body. These opinions are then taken into account in the body of a higher level, and so on!

This all sounds very boring, but it certainly is not! As an Educational Officer, you have a good overview of the opinions of all bodies, since the Educational Officer has a place in many bodies, as a member or an adviser. When a document comes up in a certain body, there is a big chance that the Educational Officer has already seen this document in a different body, and also knows the opinion of this other body. This leads to interesting discussions, considering the different opinions of all these bodies!

In my period of being a candidate board member, I never thought of being the Educational Officer of GEWIS. This always made me think of just handling boring complaints. However, this showed to be not true at all. The advantage of being the Educational Officer is that you can fill in this function in your own way. Do you want to spend more time in handling complaints and have direct contact with students, or do you want to take part in university-wide discussions with e.g. the Rector Magnificus? This range of choices makes this function very open to your own ideas, and

makes it far more interesting than I would have thought as a candidate board member. If you ever have any questions about what topics are discussed, feel free to ask me, I am happy to talk about this with you.

“ Good summaries will be rewarded with a ‘borrelcard’ ”

As a last remark to all of you: the GEWIS website has an archive for all courses containing the old exams, and summaries written by students. Summaries can be sent in to summary@gewis.nl, and good summaries will be rewarded with a 'borrelcard', which can get you free drinks in the GEWIS room! Also, you are helping your fellow students with these summaries! So please, send your summaries to me, since this is beneficial for all people!

P.S.: you might have noticed that your lecturers are complaining about how busy they all are, and don't have all the time in the world to answer your questions or handle your complaints. This is a serious situation: please be nice to them, and don't ask unrealistic things of them. This work load is discussed in multiple bodies. So, they are happy to help, but have a life of their own as well!



GEWIS

GOING FOR GOLD

On a warm autumn evening in 16th century Prague, two young men huddle around a fire in a basement just off Charles Bridge. After numerous failed attempts, they are sure they got it right this time. The molten lead is fuming and ready for transmutation. Just a pinch of their secret ingredient should do the trick. The gold would last them a wealthy lifetime! Unfortunately, their secret died with them in the massive explosion that followed.

TEXT Robert van der Drift (managing director)

For centuries, alchemists around the world have aimed for chrysopoeia (from the Greek khrusos, "gold," and poein, "to make"). You can look at this endeavor in different ways. Some of you may think alchemists were idiots. How could you possibly believe that lead could be transformed into gold?! Well... As it turns out, you just need a physicist and a particle accelerator.

“ When someone is selling yellow-painted lead for gold, don’t look away. ”

Before you get too excited: it's not really economically viable. From a 1980's experiment at Lawrence Berkeley National Laboratory in California, it was calculated that it would cost more than one quadrillion dollars per ounce. Give or take a few dollars. The going rate for an ounce of gold at the time? About \$560. That price went up quite a bit since then, by the way. That is partially due to the fact that nowadays we find more gold in smartphones (approximately 300 g/ton) than in ore (circa 15 g/ton). A nice and important recycling challenge for all you environmentally savvy scientists!

The point is that a university, and TU/e especially of course, is a perfect place to dream big. The things your peers or even your teachers deem impossible, may be your road to the Nobel Prize. Over the past century, stranger things have happened than lead turned into

gold. Don't take 'no' for an answer. Alchemists were pretty good experimentalists ahead of their time. What they aimed for may not have been possible as such, but it surely inspired a host of discoveries.

On a different note, some of you may think alchemists were charlatans, travelling from city to city to sell fake news and life-extending elixirs. Most of them probably were. You have to pay for your research somehow ;-) Then it was relatively easy to fool the masses (and the occasional emperor). We think we are better off now. Knowledge is at your fingertips, right? Just 'Google' and you know. Well... Let's just say TU/e is the perfect place to learn to be critical. Weed out the Bad Science (great book by Ben Goldacre by the way).

And don't forget to spread the news. When you struck gold, don't keep it to yourself. Today's challenges are too big not to collaborate. When someone is selling yellow-painted lead for gold, don't look away. Your (grand-grand-)children might suffer the consequences.



MATHEMATICS STUDENT: NOW WHAT?

*A*ny Mathematics student might have come across the following thought during their study: what am I learning here? Why should I learn about this specific function, as it does not seem relevant to my life at all? It is of course important to learn about different (old) theories from several fields of mathematics, but that does not necessarily prepare you for your life after your study. What does prepare you, however, is learning about new technologies, new theories, and of course, new advancements, which requires the knowledge and passion of a true Mathematics student. We, from the National Mathematics Symposium, know this all too well, and want to help you guys with this preparation!

TEXT Arno Coppelmans - NWS18

But I can hear you thinking: what is the National Mathematics Symposium? The National Mathematics Symposium (NWS) is an annual symposium for all students from Dutch universities, interested in mathematics. Next year, the third edition of the NWS will take place. While this may seem as quite young, the NWS is the successor of the Kaleidoscoopdag. The first edition of the Kaleidoscoopdag took place in 1993, called 'Mad about Math'! It was organised by our sister association A-Eskwadraat, and the organising association has changed every year since. As such, it was the turn of GEWIS to organise the Kaleidoscoopdag in 2010, called 'Math +'.

Eight years later, GEWIS has devoted itself yet again to organise such a National symposium. The theme of the symposium will be 'Modern World Mathematics', as mathematics remains to be an extremely important factor in the modern world. Many of the new technologies used by companies use a great deal of mathematics, even though it may not always be clear on first sight. Finances and the stock market can be interpreted by mathematics, traffic light protocols are determined by queuing theory, and differential equations are used for fluid dynamics or heat conduction.

Technologies are constantly evolving and being finetuned, and not only the academic world, but also the business world uses a significant amount of these (new) technologies.

I could of course go on and on about all the things which are happening in the modern world of mathematics, but it would be a lot better if you would join the NWS of 2018 yourself! On the 20th of March, 2018, this great edition of the NWS will take place, organised by Arjen Sijtsma, Henk Jan Koopmans, Merel Elings, Daniëlle Hendriksen, Pim Booij, and of course myself. Don't forget: the world is changing around us, and mathematics is everywhere. Make sure to follow this trend, and keep yourself up-to-date about the modern world of mathematics!

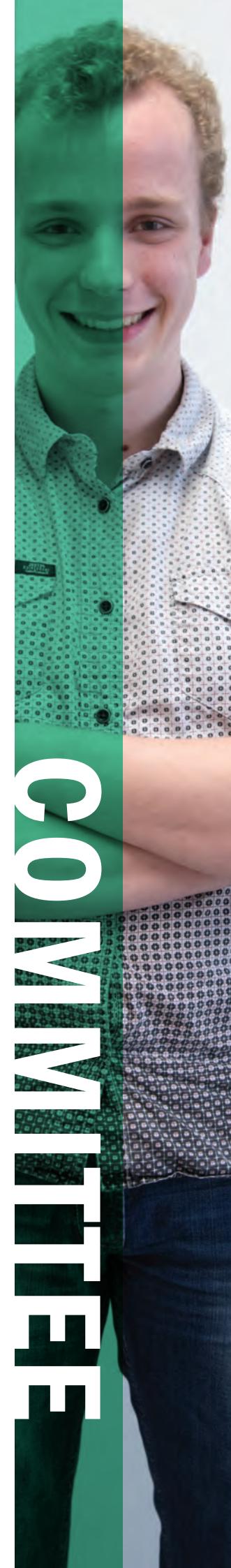


WEBSITE:

nationaalwiskundesymposium.nl

FACEBOOK:

facebook.com/NationalMathematicsSymposium



50 AND FABULOUS

5 0 years of Supremum - what a proud age especially in perspective to the age of our university and GEWIS. Our editor-in-chief already named some examples of what the world looked like 50 years ago in the editorial of this edition, but how much has changed over this time becomes even more obvious if you take a look at the Supremum archive.

TEXT Anja Syring

Almost all generations of our magazine can be found in there. Starting with editions filled with articles that were actually written on a typewriter, hand drawn cover pages and stapled together. As time moved on the Supremum developed: at some point articles were written on a computer and printed, the language shifted from purely Dutch to more and more English articles. Colour got added over time as well - in the beginning the cover was produced on coloured paper, before it was actually printed in colour and nowadays we receive full colour Supremums on our doormats.

Despite all the changes, there are several elements such as the infima that can be found in several editions over time which give the Supremum its character. To me this already is an impressive achievement given that students usually don't stay at the university for longer than a few years and the magazine was produced by an ever changing set of members.

On top of that, the Supremum even survived a change in study association.

Being founded as part of Sunya, existing several years independent of any study association and finally becoming part of GEWIS - our magazine has experienced a lot of different eras, was shaped by them and grew into what we now hold in our hands.

I would say this is surely something to be proud of. But the Supremum would not be what it is without all the people supporting it - committee members putting together each edition, writers delivering interesting articles, photographers providing us with stunning pictures, and also our readers, who continue to be the foundation of our existence.

To celebrate all achievements of the last 50 years and to also thank all of you, we are going to present you a special lustrum year. You can look forward to three special editions full of interesting articles as well as

several activities taking place throughout the year.

I do not want to spoil the surprise but some of them might involve skills needed to produce the Supremum while others are purely on the celebratory side. We are convinced that it is going to be a truly golden year and we hope that you will join in on our celebrations.





Golden Error

Goud en Fout

Silence is gold but not tonight!

**No birthday without a party - the Supremum committee
invites you to celebrate their 10th lustrum.**

**A golden evening filled with music, free drinks and a few
surprises awaits you - be sure not to miss it.**

When: 10-01-18 20:00-2:00

Where: Villa Fiësta

Tickets: €1,00 pre-sale and €2,00 at the door



Infirm: Strange or funny quotations from a teacher, a student or faculty member.
Here you can find infima sent to the Supremum commitee. inf.gewis.nl

Teun van Dijk: "Die kerel die daar staat heeft echt een goede snor, wat een smerige vent"

Rijdend op een slingerig bosweggetje

Eline: "Je mag hier 60 maar dan ben je echt een idioot... Dus 60?"

Hondenhaar tijdens het Spellenspektakel: "Ik wil eigenlijk ook nog wel een langer spel."

Tom v W: "Dan moet je een snoelbak kopen"

Landa over Ian: "Hij is fucking slim, maar gedraagt zich als een labellostick, om maar even een voorwerp te noemen."

Landa over gedwongen worden door je vriendin: "@Override"

Rick W: "Vrouwen zijn net Java."

Landa: "Het zijn toch ook gewoon objecten?"

Thijs: "Waarom worden alle B.O.O.M.-en zo kaal?"

Aukje: "Omdat het herfst is!"

Luuk M: "Maak er een if-loopje van, dan snappen de wiskundigen het ook."

Leroy V: "Kutbestuur dat ik heb! Paupers! Hun horen mij hier aan te herinneren!"

Eline: "Ik ben nu al wel een beetje aan het stressen voor het tentamen."

Twan: "Nergens voor nodig, dingen zijn makkelijk, en als ze niet makkelijk zijn, dan zijn ze moeilijk."

Vinz: "Mijn lichaam is verslaafd aan kip."

Ruben (over Lars V): "Lars houdt niet van mij."

Lars G: "Ik ook niet."

Remco van der W: "Ik zat er al op te wachten totdat je in m'n oor zou komen."

Meijaard: "Geven kippen melk?"

Ruben: "Ik hoop dat als ik gewoon zo ga liggen, dat dan vanwege osmose ofzo alle informatie mijn hersenen instroomt."

Iggy van H: "Als ik in m'n eentje in de stiltecoupe zit, dan ga ik toch niet praten."

Tom v W. over bier in de aanbieding: "Dan koop je gewoon Henk Jan."

Wietske: "Ik moet Tobin... ehm, omhooghouden."

Lucy over Knab: "Het is gewoon bank achterstevoren! Wtf!"

Tim Meeles: "Studeren is voor paupers!"

Ilse tegen Chantal terwijl ze onderweg zijn om samen USE eindpresentatie te geven: "Welke USE doe jij eigenlijk?"

SjaarsRick: "AFS is net alsof je ballen eraf worden gesneden met een bot mes."

Jet K. vindt het moeilijk om Aluminium te zeggen.

Wesley: "Hoe spel je aluminiumfolie?"

Jet K: "A-L-U-M-I-N-I-U-M-folie."

Wesley: "Niet vals spelen, folie is ook lastig!"

Jet K: "V-O-Q-C-J-R!!"

Rick W: "Zeg Bor, ten eerste: heb je nou een Minecraftshirt aan en zo ja: hoe lang heb je de was al niet gedaan dat dit nodig was?"

Romy: "Yes ik ben een eiland!"

Kas: "Is gek, je zou niet denken dat je blijft drijven."

Ava: "Bath, dat is Duitsland, toch?"

Tobin: "Iedereen zit aan mijn schaamhaar, Wietske."



Vinz: "Ik ga je de hele avond misbruiken!"

Thomas W: "Ik zing niet vals, ik zing gewoon zoals ik het zelf wil!"

Bas G: "Ooooh is dat Willem-Alexander? Ik dacht dat het Donald Trump was."

Daphne: "Als je het zelf doet is de experience wel minder."

Bram B: "Ian, kun je of de tekst leren, of stoppen met zingen?"

Pim B: "Die kerel is echt zo slim... maar volkomen retarded."

Laura K: "Ik ga geen lauve kwak drinken!"

Spouwsjaars: "Als je hier logisch over nadenkt is het gewoon heel logisch."

Femke S: "Ik zie de kleur niet maar hij proeft zwart."

Bor: "For the people who do Computer Science, you will have seen some sort of virgin control."

Bor: "Uhmm... version control."

Mattijs B: "Ik ga even naar de wc."

Yanelle S: "Tis ook altijd hetzelfde."

Mattijs B: "Tja, kleine blaas."

Yanelle S: "Ohh, heb jij ook iets dat klein is?"

Mattijs B over Laura K: "Laura, er zit wat wits op je neus!"

Susan: "Ik kan er wel een probleem van maken. Daarvoor ben ik een vrouw."

Van Horssen: "De kans is dus 3!"

Merel P: "Weet je wat trouwens een kut-idee is? Demos!"

Jeroen N: "Mijn vet heeft ook gevoel!"

During the Supremum meeting:

Anja: "We actually are a functioning committee... wtf!"

Jealy: "Het schiet al wel op met dat hoofdgebouw. Al die glazen dingen zitten er al in."

Tara: "Bedoel je ramen?"

Sury: "En nu, stop mijn mouw in mijn mond."

Tijdens een potje Saboteur, Ambers pikhouweel is stuk.

Amber: "THOMAS! FIX MIJ!"

Wouter S: "Ik ben al drie jaar sjaars."

Stepah: "Nee, call en raise, net zoals bij Pokémon... eh, nee, poker."

Teun voor de GEMOLD-terugkomavond: "Ik ben broodnuchter, slaat nergens op."

Loes van Nedap: "Come to the SNiC if you want to see me again."

Remco van der W. op volumestand 100 met een diepe zucht: "Oh god..."

" We are actually a functioning committee...wtf ,"

Kokx: "Ik heb alleen de enige thee die je drinkt als man?"

Nadym: "Oh, Rooibos?"

Rick Sjaars tegen Kit: "Jij hebt echt skills, je bent de enige persoon die mij seksueel ongemakkelijk kan laten voelen."

Alessandro Di Buccianico: "Dit zijn dus typisch van die dingen die altijd fout gaan als je het niet goed doet."

LATERALUS: GOLDEN RATIO IN MUSIC

As a member of GEWIS you must have seen this recursive formula known as the Fibonacci sequence. Just as a reminder, this is what the sequence looks like: $y_n = y_{n-1} + y_{n-2}$. What makes this sequence known as 'the Fibonacci sequence' is the use of the starting values $y_0 = 0$ and $y_1 = 1$. This obviously is the setting for the sequence to spit out the numbers 0, 1, 1, 2, 3, 5, 8, 13, etc. Also, when taking the limit of y_{n+1}/y_n with n to infinity, this limit will be equal to $(1+\sqrt{5})/2$ which is equal to what we call φ . Well, this is what we already know as maths and computer science students. Am I just being a smartass here? Well maybe, but these are the ingredients we need to analyze one of my favorite albums/songs of all time: Tool – Lateralus.

TEXT Lars Verstraelen

When seeing the image on the front cover of this record it is already great; a man stripped of his skin, such that only his nervous system and muscles are showing, several colorful eye-shaped flames surrounding his body, behind a spiral around a huge diadem laced with eyes. By the way, great drinking game: Look at Tool artworks and listen to their songs, and once you hear or see a mention of an eye, drink a shot. You'll be wasted after scrolling through all artwork related to

this record. But long story short: when you have some sense for psychedelic music, the visuals already make you long for the music. And when you eventually come to the music... For the whole album, you'll hear that front image converted into sound. Closing your eyes might give you an out-of-body experience and the music will take you on the musical equivalent of an LSD trip (and listening to this music is legal, so know which drugs you should try).



Tool - *Lateralus*
album cover

This album however has one song, which will twist itself in the Fibonacci Sequence, and it is called *Lateralus*. This is not a real word, but you might think of the word 'lateral' which has a lot to do with mathematics. So, if there is any song on the record that potentially contains high levels of maths, it should be this one. And that's just the case. When we take a look at/listen to the first verse, and we count the number of syllables used between the singer's small pauses, you will see the first few numbers of the Fibonacci sequence:

- Black (1)*
- Then (1)*
- White are (2)*
- All I see (3)*
- In my infancy (5)*
- Red and yellow then came to be (8)*
- Reaching out to me (5)*
- Lets me see (3)*

And this is only the first part of the verse as it continues with:

- As below, so above and beyond, I imagine (13)*
- Drawn beyond the lines of reason (8)*
- Push the envelope (5)*
- Watch it bend (3)*

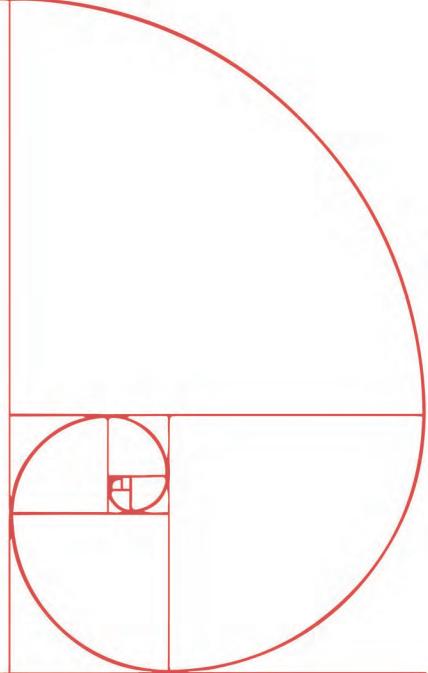
You'll hear this verse at the time count of 1:37. But take a closer inspection once again. When we write 1:37 in minutes, we'll see that this time count is about equal to 1,617777 which is somewhat equal to $1,618\dots = \varphi$. And there it is!! As natural as φ is, as clever the writers were with trying to include everything they imagined about the Fibonacci sequence in this masterpiece. And it is almost as if their desire to put Fibonacci in here, was a coincidence. For instance: we can rewrite 1:37 as 13:7. And if you pick $y_0=1$ and $y_1=1$: 13 is the seventh number (y_6) in the sequence (with starting values 0 and 1, 13 will be equal to y_7). It even gets a bit more overthought. The sequence played until this 1:37 minute mark is in the beginning mostly a 4/4 measure; which means, when you tap along with your foot it takes 4 taps until the same or a new sequence is played.

After the breakout of the song the sequence played is a switch between a 9/8, 8/8, and 7/8 (same as explained before but now your foot taps twice as fast). 987 is pretty remarkable because this is the 17th number in the Fibonacci sequence.

But not only the song is special. Some avid Tool fans have actually speculated upon rearranging the songs on this record into a 'new' record which is dubbed as *The Holy Grail*. Here the songs are shuffled around in such a way that they will follow a certain transformation of the Fibonacci sequence. For instance: the songs *Parabol* and *Parabola* are now placed at the beginning instead of being in the middle of the track listing, as it was on the original record. Also, songs like *Mantra* and *Lateralus* are now played at the same time, which opens a whole new view on the beauty of these songs. There's a whole theory behind this as I stated, and it will take up more words than I can put here, so it's definitely worth googling this. TL;DR: the Fibonacci sequence acts as a cloning device on records.

A proper way to display the Fibonacci sequence is through the 'Fibonacci Spiral' created by drawing a spiral through the corners of squares with lengths corresponding to the numbers of the sequence. Tool not only has this somewhat displayed on the artwork, as the translucent background resembles something like a spiral. But also in the song itself with sentences like '*Swing on the spiral now*' or '*Spiral out...*' Many have speculated that this spiral can be seen as how the span of life behaves. Because of this, it is a common belief that both the song and the album are a comment or a description of what life is; seemingly in accordance with yourself but there are always moments at which you'll find something about you that you've never expected to be originated to you. You are natural, but also the way in which you'll behave in the plane that is life is. To sum both this and this piece of Supremum paper up, what you should do in your existence:

'Spiral out... Keep... Going'



HYDROLOGICAL MODELLING WITH BIG DATA

TEXT Deltires

Hydrological models are essential tools when dealing with flood risk, water scarcity and pollution. In times of crisis, the models must be available on call. A sufficient level of detail and accuracy is required to assess the situation, predict the near future and simulate potential countermeasures. Furthermore, the simulation results need to be intuitive for decision makers and stakeholders.

At Deltires, multidisciplinary teams are working on solutions for vulnerable delta areas. Our software engineers develop the software that warns people for floods and droughts. We provide civil engineers with the tools for water management and flood protection. Our research themes are closely linked to the major societal issues of the 21st century, such as adaptation to climate change, management of water resources, rapid urbanisation, the production of sustainable energy and ecosystem restoration.

New scientific and technological developments are shaping the future of hydrological modelling at Deltires.

1. TAKE A 3D POINT CLOUD AND ADD SOME WATER

The world is being digitised at a rapid pace. Three-dimensional point clouds are digital geometric structures that can be used as the basis of a water model. Point cloud visualisations of the current situation can be made quickly. You can show simulated water levels in the point cloud, for instance to demonstrate the impact of a flood. The 3D visualisation makes the situation recognisable for citizens and mayors.

2. RIVER NETWORKS FROM SATELLITE DATA

Satellite images can be used to map the water systems of a region from above. Clever algorithms determine

the position of rivers and the size of reservoirs, thus providing in the basis of a hydrological model. Ideally, a modeller needs no more than three clicks to model the hydrology of a catchment.

Satellite images provide a high resolution picture of the impact of human activities. Arrange these images in sequence and you see the changes taking place like in a film. Large-scale infrastructure projects such as the construction of water reservoirs and land reclamation are easy to follow from space. The Aqua Monitor is a new web app that allows you to observe how water systems change over time. (<http://aqua-monitor.appspot.com/>)

3. BIG DATA AND HIGH PERFORMANCE COMPUTING

As the level of detail of simulation models grows, the required computational power increases as well. We are working towards direct access to cloud computing services from our simulation software. Copying terabytes of data is not always the most efficient way to work. One of the trends is to do the computations where the data is, for instance on earth observation platform such as Google Earth Engine.

4. DIGITAL PIONEERS DISCOVER NEW DATA SOURCES

In former times, the modeller received the data from the client. Nowadays, modellers are using a multitude of data sources. Crowd sourced data from OpenStreetMap (land use) and Twitter (messages about floods) can have added value in data-scarce environments.

Extracting information from those data sources requires skill and creativity from a modeller. For example, as individual tweets can be inaccurate, a





method was developed that uses the 'wisdom of the crowd' to derive a map with the most likely flooded areas. The flood maps can be of great value during disasters, because they can be produced very fast.

5. FROM GLOBAL TO LOCAL

Water related crises can happen anywhere around the globe. To understand the situation quickly, Deltares uses one of the global water models. At Deltares, we now have a number of global models, such as a Delft3D Flexible Mesh model that spans all the seas and oceans, and groundwater models for all continents on earth. Flexible computational grids make it possible to refine a local grid. The global models can be accessed in our iD-Lab, an interactive data research laboratory. One of the challenges is to zoom in on a particular catchment or coast, by making refinements of the model and adding local information.

6. SERIOUS GAMING MEETS NUMERICAL SIMULATION

The latest trend is the fusion of several types of software. For a long time, serious gaming, numerical simulation and decision support systems were separate applications. Now we have brought them together, with very promising results: water models can be operated interactively from a game engine.

Tailor made software solutions are getting easier to develop. The same numerical simulation models can be embedded in products that serve different purposes, from quick scans to early warning systems to interactive decision support systems.

7. MAPPING WATER SYSTEMS WITH DRONES

Rivers and drainage channels must be kept in shape

to discharge the water when it rains. The natural growth of vegetation tends to clog the water system and without proper maintenance, farmland and cities will suffer from inundations. Drones and autonomous boats can map larger areas in more detail than an inspector can do.

Drones equipped with full spectrum cameras and smart algorithms can find the bottlenecks in rivers and channels with a surgical precision. Artificial intelligence can support water managers in taking quick and efficient measures to solve potential threats, by focused maintenance of watercourses.

CONCLUSION

Hydrological modelling is evolving very fast these days. Automatic model building is within reach and even in remote areas, modelling becomes feasible. Big data allows for sophisticated models that run on high performance computers. Thanks to the fusion of serious gaming with numerical simulation, models are no longer the exclusive domain of experts. Future innovations can be achieved when data scientists, hydrologists and software engineers work together closely.

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The Aquamonitor, big data & high performance computing

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ID-lab in times of crisis models must be available on call





TWO ‘LATINS’ THROUGH A PHD IN THE NETHERLANDS

Hello borrellers! Here we are, Alberto and Humberto (yes, it’s correct!), an Italian and a Spaniard, here in the land of windmills and tulips. You all probably know our countries from your holidays, tapas, Don Quixote, pasta, Berlusconi, Rome & Venice, Romeo & Juliet.

We started our PhD in 2015...

TEXT Alberto Corvo & Humberto Garcia Caballero

And we share the office at the Visualization group (Metaforum, 4th Floor) where people sketch, draw and code amazing things to give meaning to data (or BIG-DATA if you prefer).

It was a borrel before summer, one of the many employee drinks (thanks for them!) and it was probably the third beer when at the bar counter we were asked by one of the editors about a piece in this magazine. Due to the alcohol level, we said yes. And we regretted it (kidding! Let’s be serious, Humberto. We are PhDs...)

“ Due to the alcohol level, we said yes „

We both live in Eindhoven – not one of the most beautiful cities in The Netherlands but full of internationals and lively atmosphere. One of the things we enjoy the most as PhDs is to meet people from all over the world and share with them beers, house warming parties and adventures in Brabant. Also, when the heat is on, we just take a flight from the airport, which is probably the most convenient you can find in Europe :).

We are curious people and we encourage you to have some weekend breaks (where did we go again

Humberto?... Ah yes Porto, Ireland, Barcelona, Greece...). We miss the mountains and the sea! Humberto was raised among the mountains and the valleys of Murcia (he always claims that it will become the capital of the world), Alberto on the seashore of Genova (he always talks about pesto and focaccia).

Even if we suffer the shortage of our national food, we can’t complain too much about our life here in the Netherlands. In fact, when we had the chance to join the TU/e we did not hesitate long due to the prestige and the nice environment established in the last years.

An advantage of being a PhD in Eindhoven is given by the presence of plenty of companies (mainly technological oriented) that support projects like the one we are involved in. This is important for your career, and it helps to grow skills that will be useful either in academia or industry.

Regarding our projects, which are in collaboration with Philips Research, we work on medical applications to improve diagnosis, management and treatment of patients in the hospitals (it sounds super-cool, but it depends on how cool the data is). In a nutshell, it involves workflow data, medical images, and a lot of mess. From that mess, we design and implement applications that help users or doctors (if there are any) to get insight into the data and come up with



better conclusions. We give users the chance to interact with data via colorful objects and more intuitive charts.

“ ... it involves workflow data, medical images, and a lot of mess ,”

If we are lucky, we will write a paper on the tool and we will go to a conference, presenting its functionalities and why this would be useful in practice. Recently, we have been working on two papers and we will have the chance to present them in Phoenix (US) this autumn. The interfaces are shown here in Fig. 1 and Fig. 2 and this is, more or less, how the visualization tools look like. That's one of the best aspects of doing a PhD, especially if you get to travel with nice colleagues to exotic or cool places.

It is important to mention that, even though the beginning of a new project with an international and big company can be somewhat difficult (Is it, Alberto?), it definitely becomes a formative experience in which you will deal with multidisciplinary professionals and cope with their backgrounds.

So, if you want to know more about our projects (we doubt it!), about our countries (we are sure), about our house-warming parties (even more sure!), you will probably find us at the next borrel at GEWIS!

Enjoy de goede dingen van het leven, mijn vrienden!!

In the end, we are only having the craic! (Irish saying).

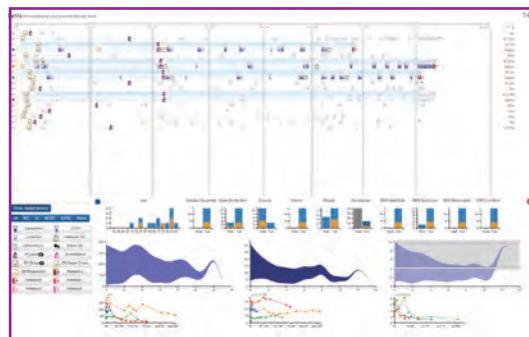
For more details about our paper visit:

<https://www.tue.nl/index.php?id=64165>



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Alberto's recent visualization tool for digital pathology diagnosis. Medical images are displayed in the top left, some image analysis is integrated and an interactive report is provided



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Humberto's recent visualization tool for evaluating clinical pathways of patients affected by sepsis. All patients' information regarding their stay at the hospital are shown and can be filtered and analyzed from the process-perspective.



MEMBER

A FUNDAMENTAL THEOREM OF MATHEMATICS

TEXT Robert de Keijzer

NUMBERS AREN'T THE ONLY THING THAT CAN BE COMPLEX

Mathematicians all around the world are struggling with difficult, sometimes even unsolvable, problems. Equations are starting to look something like this

$$\|u(t)\|_s^2 \leq Cg(t) \leq Ce^{at}(g(0) + C(\varepsilon) \int_0^t e^{-as} ds).$$

Or even as horrifying as this:

$$\left(\int_S w \, dS \right)^2 + \sum_{i=1}^m \left(\int_S \omega(u) \bar{N}_i(u) w \, dS \right)^2.$$

These types of formulas are dominating the field and causing massive PTSD amongst scholars. The expressions are terrifying mathematics students everywhere, let alone physicists who actually have to find a use for this endless nonsense.

Mathematicians have made their subject way too complicated for themselves. Initial value boundary problems, divergence theorems, tensor calculus...the list is endless. Don't even get me started on complex numbers, the problem is already right there in the name. Moreover, the Calculus book is bigger than the panic in a first years eyes when they hear "epsilon-delta".

It started off so well. Our far away ancestors thought of 1,2,3,..., addition, multiplication, everything was flowers, rainbows and unicorn farts. But along came some pretentious jackass who had to prove his grandiose intellect and hide his insecurities by introducing something as ludicrously imaginary as zero. Not much later the Greeks had to resolve their inferior complexes and marvel the planet with what they knew about the wondrous realm of numbers: Pythagorean theorem, Euclidean algorithm and Thales' angles. Little more time was needed before snobbish

pricks such as Newton, Pascal and Euler had to jump on the accelerating complication express headed for 'I've ran out of Greek letters' station'. I mean what even is a 'Xi'? All this hocus pocus made math inaccessible to the general public and turned the subject into the horror of schoolboys and girls everywhere. Even something as simple as multiplication and addition HAD to be made more complicated with group theory

A GRANDIOSE INSIGHT

But, my dear reader, not all hope is lost. A little insight and a small step back can save us from eternal damnation. Singlehandedly I will prove that mathematics is a lot simpler than it seems by introducing an all-inclusive theorem. A theorem which will most likely go down in history as the fundamental theorem of not just Calculus, arithmetic or algebra, but as the fundamental theorem of the entirety of mathematics! The great minds of our generation have bent their brains backwards trying to find this Theory of Everything (even a pretty decent movie was made of it, great performance by Eddie Redmayne). Meanwhile, it was right in front of us. Computer scientists got pretty close with their 1's and 0's. This theory, however, will forever end the misery of each and every one of those struggling teachers, students and Russian janitors. Ladies and gentlemen, let me introduce you to the theorem that will shake mathematics at its very foundation:

Everything in the world is either 1 or not 1.

Pick a random thing, concept or idea. Did you think of 1? Great! Did you not, well then it must have been not 1. It really is as simple as that (a more detailed proof is given below). Integrals, differentials, LaPlace-

transformations and functions will all simply become not 1. When you see a difficult question on your Calculus exam, just try 1 as a solution. If that doesn't work, the answer can't have been 1, so it must be not 1. Take note: this tactic does not only work for Calculus but also for Analysis 1.

I thus foresee that the exams of this year will make the exams of last year look as if they were taken by the lovechild of an Industrial Design student and someone who thought USE-Basic was "actually pretty good".

Proof Everything is 1 or not 1:

Let U be everything. Take $x \in U$.

Case distinction:

- $x = 1$
- $\neg(x = 1) \rightarrow x = \neg 1$ (Ga na!)

Thus $\forall x \in U: x = 1 \vee x = \neg 1$

Q.E.D.

USELESS CRITICISM

When presenting my theory "Everything is 1 or not 1" I have received quite some criticism, but so far, I've been able to absolutely smash all counter-arguments.

» Q: "If everything is 1 or not 1, what about 5?"

A: Well, this is a dumb question as clearly 5 is not 1. Also the concept of 5 is not 1 and even the concept of the concept 'concept' is not 1.

» Q: "Your theory contains the words 'everything', 'is' and 'not', what are these?" A: These are not 1. Like have you even read the theorem?

» Q: "If $x=1$, is x then 1?" A: Yes

» Q: "If we take a random x and we're not sure that x is 1, but also not sure that x is not 1, what is x ?" A:

Well since x is unknown, x is not 1 as it is "unknown" which is not 1 because 1 is known.

Q: "Is 1 cow equal to 1?" A: NO, 1 cow is just a cow and therefore not 1.

And the worst argument anyone could give: "If everything is 1 or not 1, isn't everything also 2 or not 2 haha LOL ROFL smiley face XDxD?" And I always respond in the same passive-aggressive way.

I stare them deadeye in the face. I remain completely expressionless, even though I'm boiling with wild rage. Deep inside I know it deserves as little attention as a Calculus tutor gives his or her students after their disappointing midterms. I try to tighten my lips but

most of the times blind fury takes over and the words escape my throat. I tell them that this is NOT a JOKE, this is a revolution! What EVEN is 2? Exactly, NOT 1. I simply can't understand people who take innovative genius and turn it into a mere joke.

STARTING A REVOLUTION

Getting these kind of questions always gives me the saddening feeling that mathematics, and with that the world, still has far to come. But it is reassuring to know that this is how Lincoln must have felt abolishing slave trade, how Galileo felt stating that the earth moved around the sun, how Prokert felt trying to convince his students that 'Ansatz' really is a Dutch word. It is reassuring to know that, as Darwin revolutionized biology, eventually this will revolutionize mathematics and our way of understanding the world. I know it will take some time. Like Snapchat dog filters, taking your phone to the bathroom and DUO student loans, the older generation will not immediately understand this fresh new way of life. We have to start anew. Stop teaching children how to split fractions, multiply or even count. The 'cito toets', 'rekentoets' and the high school math exam should all consist of just one question: "Everything is?". Eventually they'll get the hang of it. This will even help put a stop to the teaching crisis currently happening in the Netherlands. Parents won't have to pretend to know basic math while helping their children with homework. And above all math will finally be a complete and consistent system.

Take note that after the publication of this groundbreaking article some things around you might start to change. Analysis 2 will become Analysis not 1, not to be confused with Analysis 3 which will also become Analysis not 1. Most importantly, many of your beloved lecturers will likely be seen crying on campus because their entire life's work has become completely obsolete overnight. This reaction is natural. In the beginning you can comfort them by reciting old mathematical theorems such as the implicit function theorem or the Bolzano-Weierstrass theorem. After they have gradually come to accept the new truth you can always help them by filling in their Subway applications.

Infimum: Strange or funny quotations from a teacher, a student or faculty member.
Here you can find infima sent to the Supremum committee. inf.gewis.nl

Twan tegen Femke: "Je hebt niet eens in de worst gebeten!"

Maureen: "Huh, de dode zee is toch niet dood?"

Amber M: "Is hij knap?"

Maureen: "Hij is dood."

Saskia: "Wil je meer of minder thee?"

Amber: "In een glas!"

Saskia: "Kerst is op 24 of 25 december toch?"

NWERC naborrel

Mart P. tegen Laura (coach Avans Den Bosch):

"Kontsex? Nee vandaag liever niet!"

Mart P. tegen Rick W. tijdens opnieuw een NWERC-avondje: "Je hebt mazzel dat ik nu niet over je heen aan het kotsen ben."

Mart P., over een persoon die boos op hem werd: "Je weet, ik ben een behoorlijk negatief persoon..."

Ilona H: "Ik denk meestal, pakken wat ik pakken kan!"

Eline: "Proost op je lichaam!"

Sunny H: "Ik heb een prima seksleven; Mijn hand doet wonderen."

Arend tijdens het maken van analyse huiswerk:

"Komt de K na de G?"

Nadat hij verbaasde blikken krijgt: "Ja sorry hoor, ik studeer wiskunde, geen alfabet!"

Sjaars: "GEHACK, dat is toch die spellencommissie? Oh wacht, dat is GEPWNAGE."

Landa tegen Vinz: "Jouw krullen zijn echt enigmatisch. Je kan er een huis in verstoppen en je zou het niet eens zien!"

Het ging over brood

Landa: "Hoe donkerder hoe lekkerder."

Zus van Jasper kijkt in Jaspers afstudeerverslag:

"Aha zo... A = b... en de rest van het alfabet"

Teun van D: "Kan iemand even aan mijn pik zuigen?"

Dan kom ik misschien nog op ideeën."

Maureen: "Ik vind infima altijd wel leuk, totdat ik

bedenk dat mijn hele leven eigenlijk een infimum is."

Poes gooit een frisbee

Poes: "Eddy, denk snel!"

De frisbee komt tegen het hoofd Baard aan

Poes: "Hee, ik zei Eddy!"

Een vrouw: "Verderop staat er ook eten!"

Rob de W: "Wat?"

De vrouw: "Verderop staat er ook eten!"

Rob: "O! Dat laat ik mij geen twee keer zeggen!"

" Ik vind infima altijd wel leuk, totdat ik bedenk dat mijn hele leven eigenlijk een infimum is , ,

Kees over zijn eerste rijles: "Ik mocht meteen sturen en gasgeven!"

Stefan Hoekstra (Commit message): "Hotfix for addition"

Stefan Hoekstra (Commit message): "Hotfix on hotfix"

Yoram Meijaard (IRL): "Als je nog één hotfix plaatst he!"

Stefan Hoekstra (Commit message): "Cleaner hotfix"



BRINGING CHAOS INT(R)O ORDER

The first big event even before the academic year begins. An entire vacation of preparation by almost every meaningful organization of the TU/e and a week of complete chaos. Welcome to the introduction committee!

TEXT Wout de Ruiter

It is the end of July and the regular students happily finish their last exam and go to their parents for a well-deserved holiday. But there is still a small group of students that stay in Eindhoven and are just getting started, because only 7 weeks later, the introduction week would start and there is a lot of work to do.

So, let's make a quick to-do list to work on. There are activities to organize, Supermarkets to warn that we want to feed the equivalent of an orphanage for a week, a pub on Stratumseind to convince that they want to host a party for the coolest club in town, faculty members to find to help with the serious parts of the program and meetings to be set with all the other bodies of the university with which we had to collaborate. And when this might be a bit overwhelming in the beginning, you did not even realize that there are 500 introkids that actually need to execute this minute-to-minute military operation that you set out.

With the to-do list at hand, the intro committee gets to work and actually finishes the whole project within the deadline. Ok, truth be told, the Saturday before the intro, we did have a little issue with the TU/e not being certain if we would get 300 or 500 kids to take care of, but let's not get into details here. On Monday parents were mobilized and kids were arriving. The chaos has begun!

With the operation plan at hand and some running around as headless chickens we survived the first couple of days, but also for the organisation the week is hard. With early deliveries and late activities,

everyone gets tired. Luckily this is also from enjoying the amazing things that the kids do for the introvaluta. We really had a lot of fun to see you do stuff or even sometimes participate in it. A personal favourite was a sad Wesley for getting offered McDonalds just after he ate himself sick on sushi. On Friday, when the entire organization is run down, there are still the final touches to be done. So, when you cannot sleep, better to share that with all the new friends you made. At the end of the Friday the generals concluded that it was a perfectly executed operation with a lot of minor casualties but no serious ones.

“ Chaos has begun! ”

But little time to celebrate, FLUP was upcoming in two weeks. All tactics are allowed when it comes to shaking freshmen into the FLUP. When the event was finally there it was really amazing and I think everyone had a great time. It was especially nice to meet a lot of new GEWIS'ers.

As introcommittee we look back on two great events with wonderful new people. We really enjoyed everything and hope the participants did as well. At least something went well given that we have 4 freshmen committees. Finally, a word of special thanks to my fellow committee members, the board members, the volunteers and all the intro parents without whom this would have been a disaster of unmatched proportions.

COMMITTEE



FAMILIERELATIES & DE NOVEMBERREGEL

Zondag om vier uur zou ik vier logés krijgen. Koen kwam precies op tijd, maar de anderen waren om half 6 nog steeds niet bij mij. Ik belde ze, en ze bleken voor het verkeerde huis aan de andere kant van Eindhoven te staan! We spraken toen maar af bij de introbarbecue van Demos, anderhalf uur later dan gepland. Leuke verhalen, goed eten en een geweldig begin van de intro!

TEXT SiauwAn Liem & Paul Kabo

De maandag is begonnen, de koffie is gezet. Dezelfde twee mensen, die voor het verkeerde huis stonden, hebben ook geen fiets mee. We gaan dus maandag vroeg in de morgen met z'n vieren op twee fietsen naar de intro. Natuurlijk gaan we langs het limbepad, wat iets minder spectaculair en veel drukker was dan verwacht. We missen de stickers.

In de collegezaal wachtend om in groepjes ingedeeld te worden, kunnen we alle ouders bestuderen terwijl we hopen dat we niet een stel bijzonder geklede ouders krijgen. Na meegenomen te zijn naar een veld kregen we onze gadgets. Whiteboards op je rug, pruiken die in je mond wapperen, verjaardagsslingers en kransen werden uitgedeeld. Allemaal met dezelfde boodschap, verlies ze niet en bras er zo veel mogelijk.

We kregen ook een boekje met 80 crazy opdrachten erin om 'valuta' te verdienen:

Het aandoen van bh's, het proberen een BAC-lid te verslaan in een adt-wedstrijd, het kietelen van baarden en proberen je hele introgroepje in een wc-stal te passen. Kortom, genoeg gekke dingen voor de hele week.

De dinsdag is begonnen, de koffie is gezet. Iedereen kent inmiddels het spel "torpedo". Dinsdagmiddag stonden 120 introkiddo's in de markthal elkaar af te schieten. Wanneer bijna iedereen in één torpedo zat komt er een klein groepje aan dat hun laatste pijl afschiet. Prachtig gewonnen!

De woensdag is begonnen, de koffie is gezet. We zijn klaar voor de citytour die op de planning stond. Veel te weinig tijd om langs veel te veel verenigingen te gaan. Thèta in the middle of nowhere, een saai praatje over het 18 Septemberplein, aardige bioscoopmeisjes die ons popcorn geven. Het eten was bagger, net als de DJ op het feest die avond. De woensdag ging voorbij.





De donderdag is begonnen, 't bier is klaargezet. Vermoeid van de workshops en aangeschoten van de kroegentocht toch maar door naar doorhaal-donderdag. De avond begon na een heerlijke BBQ met heel veel vlees bij SSRE. Vervolgens gingen we langs alle kroegen van Stratumseind. Het was ontzettend druk, maar reuze gezellig. Op naar de bunker! En weer uit de bunker, want we werden uit het pand geëvacueerd door een gesprongen leiding bij SSRE. Daar sta je dan op straat in de kou om 5 uur 's ochtends... Nog steeds van plan om door te halen?

De vrijdag is begonnen, de koffie is weer gezet. Helemaal dood van het doorhalen. Maar opgepast, meneer Wout komt eraan! Chagrijnig als hij is sput hij iedereen die slaapt nat. De introweek is voorbij, maar niet getreurd, we kunnen verder feesten bij de FLUP!

Ons was een spectaculaire kroegentocht beloofd. Helaas begon dit met hondenweer. In groepjes vertrokken we van boerengat naar boerengat om daar iedere kroeg onveilig te maken. Net na vertrek was het weer beter, geen regen meer. Van Eindhoven naar Nuenen, naar Gerwe, naar Son en Breugel, naar Lieshout door het bos en verder lopen naar Mariahout. Wat een tocht, vijftig kilometer fietsen, vijftig kilometer bier.

Maar we zijn nog lang niet klaar, want iemand had het leuke idee om een dropping van twee uur te organiseren voor ons! Het zoeken van een fles apfelkorn in het bos was hier deel van. Zes uur 's ochtends stond de tent

eindelijk op de goede locatie. Drie uur later galmdde er alweer de kassa-remix over het kampeerterrein.

De ochtend startte langzaam, ontbijt gegeten, spelletjes gespeeld (o.a. georganiseerd door GELIMBO, ATHENA, B.O.O.M en GEPWNAGE). Tussendoor een biertje gedronken. En het toppunt van de middag was de hottub wagen van GELIMBO.

Het hoogtepunt van de FLUP was 's avonds: de cantus georganiseerd door I.V.V. Voor de eerste keer een cantus doen is echt een belevening en we hebben veel beleefd. De BAC was vriendelijk bier aan het schenken uit gieters terwijl er vrolijke nummers klonken, zoals De Mosselman, het BAC-lied, Walking Down Canal Street en vele andere klassiekers. Bij ongewenst gedrag werden er bierstraffen uitgedeeld. Zo was een van de mooiste bierstraffen van de avond het "adtje ezel" verricht door Laura in haar mooie ezelonesie.

Na de cantus was er nog een kampvuur, waar nog wat gedronken werd. Langzaam ging iedereen terug naar hun tenten om de volgende morgen langzaam op te ruimen en dan gezellig in een grote groep richting de campus te fietsen.

Wij hopen dat iedereen net zoveel heeft genoten van de intro en FLUP als dat wij hebben gedaan. Ook willen we de intro commissie en het bestuur bedanken voor de geweldige activiteiten die ze voor ons hebben georganiseerd!





GO FOR THE GOLD

A PERSONAL STORY ABOUT MENTAL HEALTH ISSUES

I am someone who has the natural urge to always go for the gold. I always feel that I can and should do more. Something which is a good quality until it backfires. This backfiring happened about a year ago to me. I want to share this story because I think other people might recognize something of this in themselves. I want to create some deeper insight in mental health issues, their causes and the effect they have had on me.

TEXT Eline Pasch

As I said before, I always feel like I have to do more. Therefore university has been hard for me, all the "free time" that I had felt like a waste of my time. Of course, this time should be spent on studying, because the time you get in the classes is never enough to do everything good enough. But I somehow had the idea that I should plan every minute of every day. Therefore I started looking for another job. I also went back to the scouting group I was in when I was a child to help them out.

This all worked out quite well, until those organizations expected more from me. My boss planned me to work 25 hours a week. At scouting, they wanted me to follow some trainings, so I could become part of the regular team. As I felt like I did not do enough, I did those things without hesitation. I knew it was much, but I also thought that if I planned it right, it should not be a problem.

This pattern of doing more kept going on, and at a certain point I found myself doing 3 jobs, being active at scouting, following 3 courses, working out twice a week, being active for the Supremum and somehow maintaining a social life.

When I started to forget deadlines and make double appointments, I stressed out. That is when I realized that I was having too much on my plate. I decided to drop one of my courses, so I could focus more on the

other things I should be doing, thinking that that would fix all the problems.

“ ...somehow maintaining a social life ,”

Unfortunately, this did not work as I expected. Instead of dividing my time, I just stayed in bed when I did not have to go to a class. I also started to skip the classes of the courses I did want to pass. All I wanted to do was sleeping. I only got up when I had something important to do, when I had to work or go to scouting for example. But even when I did get out of bed to do something, I went back to bed the moment I got home. At the worst point, there were days I slept until 5 p.m. and went to bed at 7 p.m. The 2 hours I was awake I went to the store and bought something to eat, replied to mails and WhatsApp messages, and did the things for school that were really necessary.

As I was still showing up to my appointments, nobody really noticed how much I really slept. This changed during the Christmas break. I stayed at my mom's place and she noticed how much I slept. She had already noticed that I was not feeling well for a longer period, but she did not realize how bad it was until

then. I skipped all the Christmas and New Year parties because I rather stayed in my bed. My mom realized that skipping parties to stay in bed, was really unlike me, so she made a doctor's appointment.

When she told me that she was taking me to the doctor, I was surprised. I had noticed that I was not myself, but I thought I was just really tired because of everything I was doing, so I never thought that going to the doctor would help.

The doctor's appointment was quite heavy, my mom went with me. It was the first time I truly told what was going on, so it got quite emotional. It must have been hard for my mom to hear that I did not go to school or get out of bed when I did not want to.

The doctor wanted to make sure it had nothing to do with any non-mental issues, so the next morning I had an appointment for a blood test. I still did not think it was all mental, as I was not unhappy, I was just tired. So when they called a few days later with the results, I was really confused that they could not find anything in my blood.

This result was hard to deal with for me. As I had always considered myself quite a strong person, I felt like I had been told that I was not good enough. To deal with this and everything else I had to talk to a psychologist. She wanted to find out why I did not want to do anything anymore. Together we found out that I had a big underlying fear of not being good enough. We also knew that this was formed by things that had happened to me in the past.

To change my mindset I had to start screwing up things, which sounds like a weird exercise, but it worked. She gave me questions that should guide me. Questions like "What will happen when you will not

do things in your perfect way?" and "What will happen when you will say no when somebody asks you to do more?"

So that is what I did the second period of last year: I screwed everything up. I did not proofread my Supremum articles, I went to parties, even when I had deadlines getting really close, I told my boss I wanted to work less and I did not pass any courses. I even wanted to quit studying, as I realized that it was not worth all the stress for me. But my mom stopped me on that one, as she did not want me to quit without having another option.

During the process I found out that it is okay to make mistakes, most people will not even notice that you are not trying for the full 100%. I also learned that it is okay to say no, even when this could disappoint people. It is hard to say that I am fully cured, because I still feel the urge to do more and do it better. But I know how to deal with it now. I can accept the mistakes that I make.

My doctor and psychologist do not know whether it was a depression or a burn out. But they do know that it was a mental health problem. With the sharing of my personal story, I hope to show people that mental health issues are not just for weak people, with no friends who pity themselves. They can happen to anyone and they can occur in a lot of different forms. They should not be taken lightly. So when you feel like you have problems with your mental health, do not doubt about finding help and talk about it.



SPLIT

Almost every director has a period in their life one can call their 'golden years'. For some directors these last their entire career, while for others it merely consist of one or maybe two movies. A few years back director M. Night Shyamalan experienced his 'golden years' with three consecutive movies much loved by fans. Back then it was no wonder that Shyamalan was often given the nickname "the golden boy". As a fan of his earlier work it was sad to see that he never came close to accomplishing the wonderful craftsmanship he showed during his 'golden years' with movies such as *The Sixth Sense*. Every film released by Shyamalan after *Signs* was a major disappointment and after just a few movies he fell from grace reaching his lowest point in 2010 with *The Last Airbender*.

TEXT Arjen Sijtsma

However in 2015 something changed when Shyamalan released the comedy/horror movie *The Visit*. Although this still wasn't a very good film it did provide a very fun experience and it seemed as if Shyamalan was beginning to understand what made his earlier work so much fun to watch. All the more reasons to be excited about his latest film *Split*, which follows actor James McAvoy in the role of Kevin Crumb, a man with 23 distinct personalities. In the beginning of the movie one of these personalities kidnaps three young women who he holds hostage in some sort of underground facility. These women must try to survive while facing Crumb's many personalities. Things take a turn for the worse however, as Crumb starts to develop a monstrous 24th personality.

" ... a man with 23 distinct personalities "

If one were to judge this movie based on its premise it's easy to disregard this film completely. Another dumb movie by Shyamalan that will probably be just as terrible as his earlier film *After Earth*, right? While the trailers may give this impression, just a few minutes in it is clear that *Split* is a different beast altogether. Right off the bat, *Split* takes a hold of the

audience and exerts a grip so tight that one can only forget its ridiculous premise and suspend their disbelief altogether. The story of Kevin is very interesting to watch, especially since the mystery surrounding him seems be growing by the minute. The manner in which questions are answered is perfectly balanced between conversations and even though the dialogue is exposition-heavy as a result it





never actually seems that way. This can be attributed to the fact that most conversations have a certain sense of realism such that it never appears as if the information is being told to the audience instead of to the characters on the screen. For the first time in a few years Shyamalan has created an amazing story and although it does take a few twists and turns that seem out of place it is incredibly fun to experience.

“ Right off the bat, Split takes a hold of the audience ... ”

Shyamalan's story is also very well presented on the big screen. The eeriness of the events surrounding Kevin is very well framed by the slow moving shots that often linger a little bit longer than usual. Combined with the story itself this in turn provides some great psychological horror with a tension that almost always appears to be at a boiling point. This sense of tension never lets up and it alone is what can pull one through the few moments where the script falters. Scattered throughout the film are some beautiful shots and a lot of times what is actually happening on the screen is very well mirrored with the manner in which it is framed. Shyamalan and cinematographer Mike Gioulakis have created a very good looking film but

by far the most noteworthy aspect of Split is the amazing acting by James McAvoy in the role of Kevin and seven of his personalities. McAvoy really owns the part and presents every personality very much as its own character. Every second with McAvoy on the screen was a delight to see and his performance alone made Kevin's journey worth the watch.

<i>Release date</i>	January 2017
<i>Directed by</i>	M. Night Shyamalan
<i>Written by</i>	M. Night Shyamalan
<i>Genre</i>	Thriller/Horror
<i>Running time</i>	117 minutes
<i>Budget</i>	\$9 million
<i>Cast</i>	James McAvoy Anya Taylor-Joy Haley Lu Richardson ...

All in all, Split is a very solid movie that is definitely worth the price of admission. Both the script and the direction by M. Night Shyamalan are very good and on top of that all is the amazing acting performance by James McAvoy. If you are a fan of the horror/thriller genre then Split is a must watch for you, however, even if you are not, it is worth checking out.





A GOLDEN ANNIVERSARY

IMAGE
Willem Mouwen

TEXT
Susan van Ewijk

It is no coincidence this edition is named 'The Golden Edition'. Gold is the color to mark a 50 year anniversary. For this we would like to thank everyone who has kept the Supremum up and running in the past 50 years, both readers and contributors. This edition is for all of you!





A GOLDEN SWARM



Lately, I find myself thinking more and more about gold. In the train or the lecture halls, even when looking at a bright sunset, I find myself returning to the noblest of metals. I cannot say that I like this feeling, as it is there constantly buzzing in the background of my mind, like a swarm of angry wasps behind the walls of their hive, undeniably reminding you about its presence. A swarm that sooner or later is going to burst out of its shell.

TEXT Yoram Meijaard

My mind works completely reactively, revisiting a memory if and only if there is reason to do so. Inevitably, upon seeing the colour gold, a trail of thought will spark. Memories, thoughts, associations, judgements, all come into existence instantly and die off just as quickly. Until one catches on: the swarm slowly breaching its way out of its shell.



The swarm wakes up slowly as one realises that gold has been at the centre of history for thousands of years. Seemingly, even the ancient Egyptians used gold, as their graves where rank with it. They took it as a sign of their gods. You start to realise the value of gold. Many wars have been fought over gold, from plundering Vikings in Medieval Europe, to present time murderous militias in Africa. Millions of people who suffered death. Millions, just to conquer as much of this precious metal. You conclude that the value of gold is not measured in its rarity, but is rather measured in blood.

The swarm drives you into darker existential trails. The conclusion easily reached is that all we have been doing in our oh-so-similar lives for centuries is fighting for gold, either with literal fighting or with working, struggling for some cash. The human race spends so much time fighting and collecting as much gold, cash and materials around themselves, it is almost pathetically comical. Buying new objects to put away in our houses, raising a number on a computer screen to another digit or hoarding gold as the pharaoh kings from the past; it is all part of the same instinct. The same sickness that flows through all of us mortals,

we cannot help but to keep on collecting, until the end of our days.

The existential swarm triumphs as we reach the end of our trail. We have reduced the entirety of the human race into one instinct. The instinct to collect, even when it diminishes those around us. A deeply troubling state of mind, seemingly devoid of happiness.

“Seemingly”, because I know that I am wrong. I have to be! Life is not terrible. Of course it is not! Happiness can be found everywhere, in the familiar joy of family or the hard-forged bonds of friendship. Even a swift sunrise over a beloved city can elevate one’s spirit. Its beautiful colours bringing brightness, both literally and figuratively, to places where only darkness was before.

I know that someone reading this will not believe me. Lost in a place where nothing seems to make sense, where nothing happy can exist. Even though you might know that you do not have to feel this way, even though you know that all of it is in your head, you feel terrible. My dear friend, there are people, brilliant people, that can help you. You do not have to feel alone, you do not need to seek help alone and most definitely you do not have to fight your swarm alone.

TIME TO MOVE ON

A land filled with deception. Even though nobody truly believed in it anymore; last Tuesday the curtain finally fell for the Dutch national football team. A 7-0 win to Sweden would be unrealistic and therefore, the only highlight of this match would be Arjen Robben leaving Oranje, while most Dutch people probably do not consider that a highlight either.

TEXT Tim Meeles

But the conclusion is simple: we cannot go for gold anymore. After we have missed the European Championship, we are also going to miss the World Championship Football in Russia.

And again, the conclusion is simple: our national team is straightforwardly not good enough to be part of the best 32 countries. There is one urgent matter that bothers me as a sportsman myself: why are we paying so much attention to a sport that we are honestly not very good at (at the moment)?

Last weeks, I have been unable to turn on the television and not watch some discussion on the qualification of Oranje for this championship. Why do we keep discussing something that is not going to happen anyway. We are not discussing a 120 ECTS bachelor right? Not gonna happen. We are not discussing that all of a sudden we can stand with our backs to the bar, are we? Never gonna happen, luckily! So why are we so obsessed with our national disaster, our football team?

This phenomenon is something that has been bothering me for years. There are so many Dutch athletes that have been going for gold that get very little attention.

Apparently, many people want to watch other sports; just take notion of the enormous popularity of the Olympic Games with all sports nobody has even seen yet. Every four years, I am extremely joyful that the Dutch find themselves in ecstasy while discussing an amazing archer. But unfortunately during the other years, only if you are lucky, there is an NOS livestream

available somewhere, but do not even dare to question the 7 o'clock on Sunday: reserved for football, even though the quality of the Dutch football teams has been decreasing for the last few years and any young talent leaves our country before they can lift our teams.

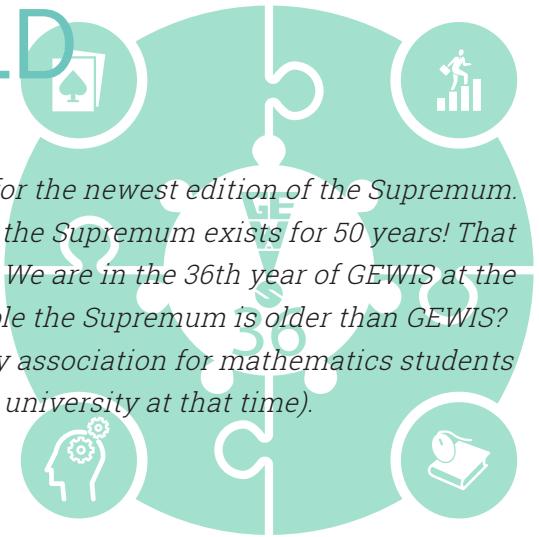
To give an example of the stubbornness of Studio Sport: last weekend, the Dutch baseball championship was won by Neptunus. Consider that a baseball match takes 3 hours in which you play 9 innings. Studio Sport decided to give a game summary, which lasted 2 minutes, and we 'joined the match' in the ninth inning. That is comparable to starting your football summary in the 70th minute, while it is already 3-0. Does that compare to our hopeless Dutch pride?

There is something I pity more than everything I wrote above though. I feel sorry for the fact that a part of our economy is built on the successes or failures of these eleven men running over a field kicking against a ball. I feel sorry for all the pubs that will not be filled with fans during the championship, I feel sorry for the Albert Heijn that they cannot get us excited with the new Wuppie or Welpie, no doubt giving them some more customers, and I feel sorry for any store that was already preparing to sell the Dutch all this awful orange stuff. I believe it is time to move on and start cheering for athletes that do go for gold! That should have been in the governing agreement to boost the economy!

COLUMN



OLD BUT GOLD



The board was asked to write something for the newest edition of the Supremum. As you probably already know, this year, the Supremum exists for 50 years! That is quite some time. Even longer than GEWIS. We are in the 36th year of GEWIS at the moment. I hear you ask, how can it be possible the Supremum is older than GEWIS? Well, before GEWIS existed, there was a study association for mathematics students only (software science was not taught at our university at that time).

TEXT Nicky van den Berg

During the past 36 years, many things have changed. Our association moved several times, many committees and fraternities were founded, and every year, there was a new board. The latter is also the case this year. Let me take the opportunity to introduce ourselves shortly. Laura Kuntze is our chairman. I am Nicky van den Berg, secretary of GEWIS. Then, we have Bram Wieringa. He is the treasurer, so he handles all the money. Guido Janssen keeps track of all committees of GEWIS in his function as Internal Affairs Officer. Since we are a study association, we also have one board member dedicated to education. This year, this is Luuk Meeuwis. He will try to make sure the education at our department is at its best. Ralph van Ierland is our External Affairs Officer. Together with the Corporate Communication and Contact Committee, also known as C4, he takes care of all the contact with companies. This year, we also have a 7th board member. This is Merel Pennekamp. In her function as Innovation Officer, she will be focusing on personal development. We believe it is very important for everyone to master some basic skills, like speaking in public. Together with the committee TRAIN, she will organize some training sessions in which you will be able to learn some soft skills. During the first quartile, they organized a LaTeX-workshop for beginners, but also for advanced users. That way, everyone was able to join at their own level and learn even more about this document preparation system.

Now, you know all our names and the functions we have in the board. But that does not define who we are. We have lots of things in common, but there are also various differences between us. For example, 4 years ago, we all were studying Mathematics. Today, this is not the case anymore. Bram Wieringa realized Software Science was more his kind of territory, so now, we have six mathematicians and one computer scientist. Besides that, we were all members of a First Year Committee (EJC). Bram was a member of EJC15-0, also known as the 'Llamas'. Merel, Luuk and Guido loved their 'Beer' in EJC15-1 and Laura, Nicky and Ralph were big fans of Bambi in EJC15-2.

At the moment, the whole board lives in Eindhoven, but no member was raised there. Five out of seven were raised in small villages around Eindhoven, but Nicky and Guido were not. Their parents live in Limburg, causing a single trip to the university to take around one hour or even more!

What makes our board different from other boards? Well, that would be our seventh function. We want to focus on your future. During the last few years, GEWIS organized many career-oriented activities and even more relaxing activities. Both are important for you and your future. However, we felt that there was a missing key, an essential one. To be wanted by companies, it is important for you to have several soft

skills. Those skills cannot be learned by going to lectures, but you can only master them by doing them, practicing and making errors. An example of such a skill is time management.

Next to these soft skills we believe are important for GEWIS members to work on, we are also looking for opportunities to go to external events, focused on personal development and professional skills, like a TEDx event. We want to give all our members an opportunity to master these skills by participating in workshops and interesting lectures on how to handle these kind of things.

During the last 36 years, lots of things changed. In the beginning, GEWIS was a very small association. Only a few new students started studying at the TU/e each year, so the number of new members for our association stayed almost the same every year. However, during the past few years, this changed. Both Computer Science and Applied Mathematics grew excessively, resulting in a growth of the number of members of our association. During the past few years, the university has been focusing on internationalization. The master programs have been taught in English for several years, just like the bachelor programs Software Science and Web Science. Since this academic year, the bachelor Applied Mathematics can be added to that list. This means that all studies that are related to GEWIS are in English. Therefore, the number of international members is also growing. We are working really hard to make everyone feel comfortable in and

around GEWIS. We are proud to welcome more international students each year. During the last few years, the association made a switch from Dutch to English. The Supremum became English, but also yearbooks and most of the internal communication switched language.

As I just explained, lots of things are changing around GEWIS. The main communication language is changing, and it is expected to change even more. I would not be surprised if, sometime soon, the general members meeting would be held in English. But what would GEWIS look like in its fiftieth year? That is a good question. By that time, it is 2032. As we can imagine, lots of things will be differently then. Although it is very hard to look into the future, there are some things we can predict. There will be a cap on the number of registrations for our study programs in only a few years. That means that only the best students will be allowed to enter the university. That will have an effect on the number of new students becoming a member of GEWIS. Eventually, this will become constant, instead of growing. All activities will be full because of the high numbers of member able to join, there will be even more committees, and lots of other stuff will change, but one thing will remain the same... GEWIS welcomes everyone with open arms! Because our members, who help us with lots of stuff, are gold to us.

FUTURE OF GEWIS

On behalf of the thirty-sixth board of GEWIS,
Nicky van den Berg





GEWISSENSCHAFT

GOING GOLD: THE HOW AND WHY OF EARWORM SONGS

For me, the word 'gold' immediately triggers these famous lyrics by Spandau Ballet: "Gold! (gold...) Always believe in your soul! You've got the power to know, you're indestructible! Always believe in..." It's interesting how some songs manage to stick to the brain and how others don't: some songs are utterly forgettable and others stay for hours or even more.

TEXT Bor de Kock

So who are the champions of writing earworm songs, and why do some songs stick better than others? Luckily, science finally has an answer to that last question. In November 2016, Jakubowski, Finkel, Stewart and Müllensiefen published their paper 'Dissecting an earworm: melodic features and song popularity predict involuntary musical imagery', which aims to finally solve this question that has probably been on your mind for way longer than you care to admit.

“ So what makes a great earworm song? ”

To study the topic, the researchers first asked 3000 UK participants to fill in a survey on their Involuntary Musical Imagery (or INMI) experiences, as is the scientific name of the phenomenon. The participants were asked to name their most common 'earworm songs', and thus an earworm top 100 was compiled. These songs were then compared to 100 songs that were never named by any of the participants on melody. Every earworm song was matched with a non-earworm song similar in style, popularity and genre. The differences between the groups of songs were then analysed. For the scope of this project only pop/rock songs were chosen, so no commercials or classical arrangements.

So what makes a great earworm song? First of all, let's "kick in some open doors": songs that have been popular recently are more likely to become an earworm than songs that have not been popular for a while. Songs that are played more often are also perceived as earworms more. However, there are also musical reasons some songs are more sticky than others: after doing some statistical analyses on the music, it was found that songs with longer notes and smaller pitch intervals are more likely to stick, possibly because they are easier to sing along with. Indeed, a different study from 2012 shows that people who sing along to music instead of listening passively are also more likely to experience the music as earworms.

So first: what are the top earworm songs according to the study? See the result in the table on the right. The results might be a bit skewed culturally and it is clear that the survey was taken a few years ago, but personally I recognize the earworm-factor in all of these songs.

Analysing all of the songs from the list, the researchers discovered some interesting things apart from the conclusions I mentioned above. In terms of pure song analysis, it appears faster songs are more likely to stick than slower songs, but there are also some other interesting phenomena. The paper concludes, for instance, that melodies that stick to a well-known pattern are likely to stick, even if they are not heard that often. It does also help if a song contains an

unusual pattern of pitch movements, which makes sense, since boring songs usually do not stick. The best earworm-recipe can thus be summarized as follows: make a not too experimental song that contains a small plot twist somewhere in the melody, and you should be all set.

A later CNN article on the matter points out that a lot of songs for children are specifically written to have a very clear pitch contour: 'Twinkle, Twinkle, Little Star' is a good example of such a song that can be remembered very easily by toddlers. For those who grew up in Holland, classic tracks like 'Smakelijk eten, smakelijk eten, hap hap hap...' might come to mind, or the even more relevant 'Wakker met een wijsje!'

Why these features typically invoke the earworm-effect is not really clear yet, as the researchers did not dive into the actual psychology of the participants. A possible explanation for the earwurm-ishness of faster songs might be that these are more danceable and thus are more likely to be played in clubs where more attention to the music is paid than when, say, listening to music while working, but this has not been researched yet. A different theory is that the type of instruments used and the way the harmonics between them are shaped comes into play as well, but the paper I used for this article did not dive into that yet (and there is no follow-up research yet).

That also applies to the 'why' of earworm songs: it's clear that hearing a song can get it stuck in your brain almost instantly, but memories can also play a role in them. I know this from experience: in 2016 I went to see Fame, and my mind replays the title track every time I bike past the Parktheater. Indeed you could say I did remember her name...

Is there a trick to get rid of a song playing in your head? Here we do have some survey-based research, again from the UK. First of all it should be remarked that over two-thirds of the interviewed people do not find the presence of earworms offensive, which probably depends on the song in question as well. The most common strategies to get rid of the worm-songs are

A) listening to the song from beginning to end, and B) trying to sing a different song. When asked which song was used for option B, most participants answered "God Save the Queen", in true British fashion. A third strategy that allegedly works is playing the song yourself, which is allegedly the way Neil Young gets rid of earworms.

" Smakelijk eten, smakelijk eten, hap hap hap... „

So although there is no universal trick to fully rid yourself of a musical earworm, science is luckily able to answer some more questions about the how and why of this interesting phenomenon. Speaking for me personally, I hardly ever feel the urge to listen to the British national anthem. Instead I usually go for a classic song that is sticky in itself, but fun to listen to. Usually I end up with something by ABBA, for example, a tape that collected of their most popular and most earworm-prone songs on a popular top-20 album that's fittingly called ABBA: Gold.

EARWORM TOP 9:

	SONG	ARTIST
1	Bad Romance	Lady Gaga
2	Can't get you out of my head	Kylie Minogue
3	Don't stop believing	Journey
4	Somebody that I used to know	Gotye
5	Moves like jagger	Maroon 5
6	California gurls	Katy Perry
7	Bohemian Rhapsody	Queen
8	Alejandro	Lady Gaga
9	Poker face	Lady Gaga

Inimum: Strange or funny quotations from a teacher, a student or faculty member.
Here you can find infima sent to the Supremum commitee. inf.gewis.nl

Niet nader te noemen wiskunde student: "Misschien moet ik maar gewoon van een gebouw afspringen."
Arjen: "Ik zou Vertigo nemen, die is lekker hoog."

Collin: "Maar waarom is het een neger dan?"
Arjen: "Ja, omdat hij zwart is!"

Tijdens de intro: "Waarom ziet Henk-Jan eruit als een facemorph van Bor naar Jeroen die halverwege is stilgezet?"

Niekie vertelt over een spel op vakantie

Niekie: "Als je 10 minuten erin bleef dan won je een drankje, als je 20 minuten erin bleef kreeg je een etentje, en als je 30 minuten erin bleef dan kreeg je een gratis tripje naar het ziekenhuis!"

Wesley: "Waar zat je dan in?"

Niekie: "In een ambulance!"

Sander: "Web Science bestaat niet meer. We zijn een uitstervend ras."

Bram W: "Wesley, vind jij Heineken ook beter smaken als het door de faculteit betaald wordt?"

Vinz: "Ik zou me liever inbeelden dat ik masturbeer dan dat ik me zou inbeelden dat ik een drol eet."

Evie N tegen Pim B: "WAAROM HEB JIJ ZO'N ONBETROUWBAAR HOOFD"

Ruben v N nadat hij gehoord heeft over crackertrekken: "Ik vind secret Hitler toch leuker"

Wietske: "Ik ben zó goed in zuigen!"
Vinz B: "Ik zuig gewoon altijd met beleid."

Tamara: "Ik word echt al de hele week nat gespoten door allemaal jongens."

Sjoerd: "Dan moet je een hefboom maken: Hefboooooom! Met takken! Kuthefboom!"

Tobin: "Waarom ligt er zo veel zooi op jouw bed?"

Stijn D: "Nou het lag eerst op de grond dus ik heb het opgeruimd."

Bart: "Waarom kunnen we geen normaal gesprek hebben? We hadden het net gewoon over slavenhandel en nu hebben we het opeens over penissen!"

Dante: "Als je iets voelt als je mij knuffelt, is het niet mijn portemonnee."

Vinz B: "Waarom is het eng dat ik een kat kan zijn?"

Kutjeroen: "De wortel van 32 is 8"

Wietske: "Ik ben geen alcoholist, ik heb maar 9 lessen!"

Lucy: "Je wilt graag bevallen want dat is leuk."

Wesley heeft het over de nieuwe stagair van de introcommissie.

Jim, die er net achter komt dat er echt een stagair is: "Oh, ik dacht al die tijd dat je het over Wout had."

Chantal: "Gijs, kun je even stoppen met software uitstalleren op mijn laptop?"

Sander B.: "Vraag maar aan iemand anders, ik ga even lekker een kater hebben"

Maas: "Nee Romy, ik stop hem niet overal in."

Tim H: "Doe je morgen een broek met korte mouwen aan?"

Wietske: "Maar katten voer je toch niet?"

Niekie: "Het is helemaal niet moeilijk! Kijk, een Matrix is eigenlijk een hoop getallen bij elkaar, en dan haakjes er omheen!"



Wietske: "Er is een verschil tussen zij die weten dat je fapt, en zij die zien dat je fapt."

Bart: "Maar zoete witte wijn is ook gewoon voor 16-jarige hockeymeisjes"

Dobin: "Dat is fijn, iemand die geen mening heeft als je andermans moeder neukt"

Rick Wouters: "GELIMBO is tegenwoordig best wel hetero hoor"

Kutjeroen pakt een zak chips uit de koelkast:
"Waarom ligt er thee in de koelkast?"

Leon: "Het ging gewoon slecht. Ik had te weinig tijd om voor te bereiden."

Illona: "Omdat je zat te kaarten 's avonds?"

Bor de Kock: "Het is niet communistisch, het is anti-kapitalistisch."

Bram: "Bor, ben jij homo?"

Bor: "Nee, NSB'er"

Wesley: "Ik heb echt een stem alsof ik net een heroïnehoer gepijpt heb."

Introgroep of Sabine G talking about lap dances

Laura K: "I don't want to get wet!"

Wout R tijdens de intro: "Waar zijn je ouders?"

Sigi M: "Thuis!"

Rik R: "Ah, hoeren, deze muis is kut. Waarom maakt Tim deze nou nooit schoon?"

Wout: "Ken je het GEWIS-lied niet?"

Illona: "Jawel! Langs de dommel"

Willem Mouwen: "Alsof je babies serveert in een uitgehouden mens."

Wout tegen Ralph: "Er is iets mis met je fiets! Er zit licht op."

Patricia: "Bij ons is het geld uitgeven eerlijk verdeeld: Ruben betaalt de boodschappen en ik betaal mijn kleren."

Sjaars Steven over de magische driehoek: "Ik keek gisteren een filmpje over rekenen in de vierde dimensie en dat was makkelijker dan dit."

Romy: "Tanken met suikerwater!"

Celine, refererend naar een mogelijkheid voor muziek: "Weet je wat we zouden kunnen hebben, maar we nu niet hebben?"

Yoram, onsubtiel: "Seks."

Ruben N: "Heb jij het al gedaan vandaag?"

Evie N: "Ja!"

WINFIMUM

The Winfimum is chosen by the editors as the winning, most funny, infimum.

Een mevrouw: "Verderop staat er ook eten!"

Rob de W: "Wat?"

De mevrouw: "Verderop staat er ook eten!"

Rob: "O! Dat laat ik mij geen twee keer zeggen!"

Sent in by: Bor de Kock

Laura K hoort dat flikflooib doet: "Waar is het mis gegaan?"

Ian W over zijn intro-ouders Twam m en Willem L: "Jullie waren tenminste chill, ik mocht tenminste laat komen!"

Laura Kuntze tegen Tim Meeles: "Ik kom nooit meer in pak voor jou."

Niekie: "Je kunt ook knuffelen zonder je piemel!"





ADVVERTORIAAL

TEM HET GDPR-BEEST MET DATA VIRTUALISATIE

Jouw persoonlijke data beter beschermd door nieuwe EU-wetgeving; de General Data Protection Regulation (GDPR) moet ervoor zorgen. Een terechte maatregel voor de consumentenveiligheid, maar ook één die consequenties heeft voor bijna alle bedrijven en instellingen.

TEXT Fris Geerlings (CTO)
Rudy van Haandel (Sales Consultant)

Onder GDPR moeten bedrijven namelijk altijd expliciet toestemming vragen voor het krijgen van toegang tot persoonsgegevens, om deze data op te slaan of om derde partijen toegang tot persoonsdata te geven. En als bedrijven zich daar vanaf 25 mei 2018 niet aan houden, hangt er een flinke boete boven hun hoofden. Die kan per overtreding trouwens oplopen tot 20 miljoen euro of vier procent van de wereldwijde (!) omzet van het bedrijf. Om nog maar niet te spreken van de negatieve publiciteit door zo'n incident. Maar hoe zorg je als bedrijf ervoor dat je zonder ingrijpende, peperdure veranderingen toch compliant kunt zijn?

EXPLICITE TOESTEMMING & AUDIT TRAILS

Naast dat organisaties onder GDPR altijd expliciet toestemming moeten vragen voor datatoegang, opslag en toegang voor derden, moet persoonsdata bovendien altijd inzichtelijk zijn voor consumenten. En let op: consumenten hebben het recht om 'vergeten te kunnen worden' (inclusief data uit back-ups). Kortom, consumenten krijgen door de GDPR-wetgeving meer controle over hun eigen gegevens.

Voor organisaties is het onder GDPR uiterst belangrijk om te kijken naar het ‘wie kan waarbij’-principe. In veel gevallen levert dat een ingrijpende verandering op voor applicaties die persoonsdata bevatten. Een simpele individuele login voor die applicaties is onder GDPR namelijk achterhaald en organisaties moeten overstappen naar een role based access control(RBAC) en complete data audit trails gaan vastleggen.

FRONT-ENDS MET RECHTSTREEKSE DATATOEGANG

Steeds meer front-ends binnen organisaties maken voor businessstoepassingen gebruik van de consumentendata. Zoals je wellicht al voelt aankomen, is die data vaak opgeslagen in verschillende databases, core systemen, grids en zit verstopt achter API's. Die data worden opgehaald via directe SQL-verbindingen of andere rechtstreekse communicatie over het interne netwerk of het internet. Juist het grote aantal onderlinge verbindingen betekent dat het technisch gezien lastig kan zijn om op verschillende data-toegangspunten een controle- en audit-traillaag toe te voegen.

Voor gecontroleerde toegang en benodigde rapportages kan de implementatie van een complete API-laag op verschillende services natuurlijk een oplossing zijn. Echter, API's vragen een stevige investering en een tijdrovend ontwerpproces, die je bovendien puur voor GDPR-doelstellingen lastig terugverdient. Maar, er is ook een andere manier om, veel minder ingrijpend, hetzelfde resultaat te bereiken: Data Virtualisatie.

“ API's vragen een stevige investering „

DATA VIRTUALISATIE BIEDT TOEGANG, CONTROLE EN INZICHT

Data Virtualisatie (DV) zorgt ervoor dat uit verschillende bronnen data worden opgehaald die realtime in een ‘virtuele laag’ worden gepresenteerd. Deze virtuele laag is gecontroleerd toegankelijk voor de front-end en back-office applicaties. Het voordeel is bovendien dat DV gecentraliseerde security policies biedt voor

alle databronnen. Daarbij kan zelfs eenvoudig specifieke toegang tot bepaalde kolommen uit tabellen worden gereguleerd. Daarnaast biedt DV uit zichzelf mogelijkheden voor RBAC en standaard volledige audit trails. De techniek achter DV is al jaren beschikbaar en daardoor bewezen, ook onder hoge load en bij miljoenen klantrecords.

“ Daarnaast biedt DV uit zichzelf mogelijkheden voor RBAC... ”

De implementatie is eenvoudiger en sneller dan van verschillende APIs en brengt daardoor een kleinere investering met zich mee. De toegangstechnieken kunnen identiek blijven en nog steeds via bijvoorbeeld SQL worden geregeld.

De belangrijkste implementatiestap die goed moet worden doordacht, is het mappen van data uit de bronsystemen met de doelapplicaties. Hier komt echter geen kostbare softwareontwikkeling bij kijken, maar alleen configuratie van DV.

Meer weten over Data Virtualisatie?

Mail naar: welkom@isaac.nl



ISAAC

DIMPLES & MEN'S STYLING

Regarding style and men's styling in particular, there are a lot of conceptions that totally depend on your 'tribe', your direct surrounding social group that also determines your status. What is acceptable and good looking for one tribe might be awful for the other. Examples of this are outfits corresponding to motorcycle groups (*Hells Angels*) and football supporters (*PSV* or *Ajax*). At GEWIS, there is the conception that a tie with dimples, "pisgootje(s)" in Dutch, are a bad thing. There is, of course, a difference between intending a dimple and having a dimple by accident, but an intended dimple is the way to give a personal touch to your tie.

TEXT Vincent Keltjens

So let's start at the beginning, why am I writing this piece and why do I feel the need to?

Ever since I joined "In Vino Veritas", I saw this fraternity as the subtribe of GEWIS in which I could develop my personal style, focussed on classical menswear; of course being inspired by Monseigneur Sanders. Over time, I have spent a lot of time reading about and watching videos on classical men's style, as I find the message that your appearance conveys a fascinating concept.

When I graduated, I wore my (first) bespoke suit. When I arrived at GEWIS, I got some comments on the "pisgootjes" in my tie and people actually felt the need

to fix my tie, even though I put the dimple in with intention, since I'm convinced that dimples make your tie so much more beautiful. Therefore, I thought it would be a good idea to write about it in the Supremum, to clear up this misconception.

Being a member of GEWIS, I am fully aware that I take over a big part of the customs of our association. I am shouting "Twee bier in de hand!" to people queueing their beer (or holding someone else's beer, but being oblivious to that fact), and "KUT B.O.O.M!" or something similar when a group of people think they should announce their presence through shouting.

When I was less experienced with ties, I also used to tie my tie without dimples.



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1

Tanner Guzy, 3 Ways to Wear Chambray.



In this video, Tanner wears a beautiful dark green knit tie, tied very nonchalantly, which matches the daring, rakish elements of the rest of the outfit. Altogether, I love the way the combination looks, but there's probably few men who can pull off such a look. Personally, I'm not a big fan of having the back of your tie longer than the front, since it kind of looks silly.

The reason that I dislike ties without dimples is that it removes a certain elegance from the tie. A tie tied without dimple always has very little variation, has little depth, doesn't stand out as much, is symmetric and somewhat boring. To me, tying a dimple into your tie gives it a unique twist every time you tie your tie, it contains much more depth as light and shadow appear differently on the tie, adds a little bit of flair by being asymmetrical and it adds your personal touch to the tie.

Actually tying a tie with a dimple requires technique, whereas tying a tie without dimple is just a matter of adjusting it correctly.

Therefore, the next time you're tying your tie, you might consider tying it with a dimple. If you're not sure on how to do this, I would recommend the guide of Sven Raphael Schneider from Gentleman's Gazette.

Oh, and by the way, Dimple is an awesome whisky!



2

1

Sven Raphael Schneider (Gentleman's Gazette), Four in Hand Tie Knot Tutorial - Step by Step How To Guide.



In this video, Sven ties a gorgeous striped rep tie. He uses the Four in Hand knot. Personally, I like the knot, simply because it's elegant, slightly asymmetrical and fits really well with dress shirts which do not have a very broad collar. Tying a dimple with the Four in Hand knot simply gives that little extra dimension to the tie.

2

Me rocking my bespoke suit with an orange micro pattern tie. I love the blue colour of the suit, which is picked up nicely by the blue in the dress shirt and tie. The orange tie works really well with the colour of the suit, a bit of playful dissonance. Just like the pink flower, which nicely matches the colour of my skin. Of course, the tie has an asymmetric dimple.

THE PRICE OF GOLD

While preparing for the Study Tour by the South African Far Foreign Adventure (Saffa) Committee we regularly come across oddly fascinating, unusual and fun trivia about South Africa. We would like to share our findings with all the members of GEWIS in the Supremum edition up until we embark on a Study Tour to South Africa in 2018.

TEXT Geert Derk - Saffa

Did you know that about half of the present gold stock originates from South Africa? In 1970, the country accounted for 79% of the world gold supply. This Supremum's theme has played a major role in the history of South Africa. The discovery of the precious yellow metal has brought fortune to a region that was mostly inhabited by farmers of Dutch origin in a time of colonization by the British. As you can count on, this resulted in a major conflict called the (Second) Boer War.

PRE-GOLD ERA (1835 – 1880)

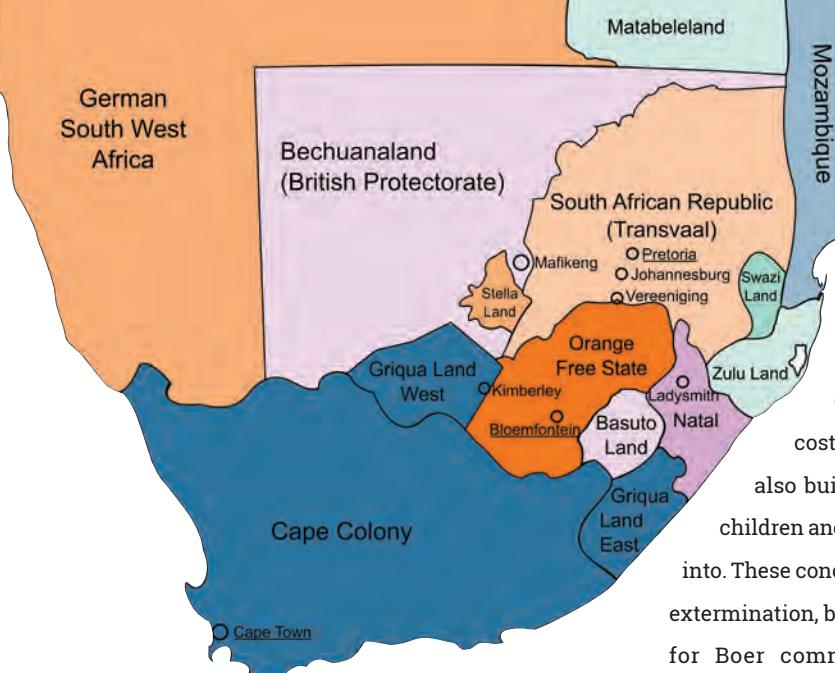
During most of the nineteenth century, South Africa was occupied by the British. Natal and the Cape colony were prospering regions where the colonists and Afrikaners of Dutch origin as well as the native inhabitants lived. Between 1835 and 1846, about 15,000 Voortrekkers left the Cape Colony to establish a free state in the rural interior of South Africa. This Great Trek was a result of tensions between the Trekboers (nomad-farmers) of European origin and the current administration of the British Empire. The Boers established two independent republics Transvaal or South African Republic (ZAR) north of the Vaal river, and Oranje Vrijstaat north of the Oranje river. Both republics were recognized by the British empire in the Sand River (1852) and the Bloemfontein (1854) conventions. Transvaal received limited independence from the Brits as they did not pose a threat to them due to the poor terrain. Vrijstaat eventually received equivalent rights, but both republics were still dependent on the British army.

In 1867, diamonds were discovered in Kimberly on the border of Cape Colony and Oranje Vrijstaat. This discovery was one of the causes of a deterioration of the relationships between the independent republics and the British colonies. Sir Henry Bartie Frere annexed Transvaal and sent troops to Zulu in 1877. Zulu defeated the Brits in the battle of Isandlwana and gained independence from the empire. Transvaal revolted the annexation, which led to the First Boer War in 1880. The Boers won this war within four months and the Pretoria Convention was concluded stating the independence of both republics.

MINERAL REVOLUTION (1880 – 1899)

After the First Boer War, gold was discovered in 1886 in Witwatersrand – the Rand, South Africa's current currency, is named after this – in Transvaal. Johannesburg evolved into a boom town and a Mineral Revolution is unchained. Transvaal flourished thanks to the gold and became one of the richest states. Since the Boer population was rather small for exploiting the immense gold treasure, uitlanders (foreigners) were allowed into the republic. To prevent these foreigners from seizing the power in Transvaal, the uitlanders were regarded as second-order citizens by law.

In the meantime, the Brits were seeking to enlarge their empire and wanted to incorporate the free republics. The fact that most uitlanders were of British origin contributed to the eagerness to commence war. The Brits sent 57,000 soldiers to the Transvaal borders. Kruger – who the national park is named after –, president of Transvaal, filed an ultimatum for the Brits



to retreat, but when a reaction from the Brits remained absent, they instead declared war on October 11th, 1899: The Second Boer War.

BOER OFFENSIVE (OCT – DEC 1899)

The Boers besieged the British cities of Ladysmith, Mafikeng – defended by Baden Powell, founder of the Boy Scouts Association –, and Kimberley. Within a week, called the Black Week, they conquered all three cities. For the Brits, this came as a surprise as the Boer army was a citizen army while the British army was a professional army, which should have been able to fend off the attacks.

BRITISH OFFENSIVE (JAN – SEPT 1900)

When on February 14th, 1900 new British troops arrived, they changed the tide. Mafikeng was freed on May 18th, 1900 and the Boers lost the battle of Paardenberg in February. Boer commander Piet Cronje was captured as a prisoner of war along with 4000 fellows. At March 13th, the Brits conquered the capital Bloemfontein and at June 5th Pretoria was captured. President Kruger fled to Eastern Transvaal and escaped to Europe.

GUERRILLA WAR (SEPT 1900 – MAY 1902)

The Brits hoped that the Boers would surrender as their capitals were conquered, but the Boers changed their tactics instead. The Boers adopted guerrilla warfare as their strategy and applied a hit-and-run tactic. This tactic of destroying British infrastructure

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proved effective.

British commander Kitchener decided to focus on preventing the Boers from resupplying from home base. He adopted a scorched-earth policy in which 13,000 houses of Boers were burned down, which cost the lives of 13,000 Boers. The Brits also built concentration camps where the children and wives of Boers were forcibly moved into. These concentration camps were not meant for extermination, but rather for deprivation of supplies for Boer commandos to induce a surrender. Unfortunately, and unintendedly, many people died in the concentration camps due to diseases.

AFTERMATH

The last Boers, the bitterenders, surrendered in May 1902 and the war ended with the Treaty of Vereeniging on May 31. Officially, the Brits had won, but they had to pay £3,000,000 in damage cost to the Boers. Transvaal and Oranje Vrijstaat ceased to exist as independent republics and became part of the Union of South Africa, which was ruled by the British empire. The old republics were granted limited self-government which was enforced in 1906 and 1907. After three years of war, the Boer war was the most expensive war the Brits had ever fought. The war had cost them 200 million pounds, nowadays 250 billion euros.

CONCLUSION

The discovery of gold near Johannesburg has certainly had its impact on the region. The Boer war is just one out of the many turbulent times that have shaped South Africa to the country it is today. The period of the Boer wars is situated between the Dutch colonization and the two World Wars and then the Apartheid era. Africa's southernmost country has gone through a lot from being named the Dutch Cape Colony (1652) to being named the Republic of South Africa (1961). The history of South Africa teaches us that gold is not only a symbol of success and wealth but also a symbol of jealousy and desire that has the potential of causing conflicts that last for decades.

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Map of South Africa showing British possessions, July 1885



HOW TO FIND GOLD?

For centuries, people have tried to find gold. In the 19th century, several gold rushes in remote areas of the world caused migrations of miners who were hoping to become rich. Of course, some of them got rich, and others did not. The problem of estimating the concentration, or density, of gold contained in ground is also interesting from a mathematical point of view.

TEXT Anne Engels

In 1951, Danie G. Krige defended his MSc thesis, which contained a method to estimate the most likely distribution of gold in the ground based on soil samples from only a few boreholes. His ideas have been formalized by George Matheron, and the resulting method is still called "kriging".

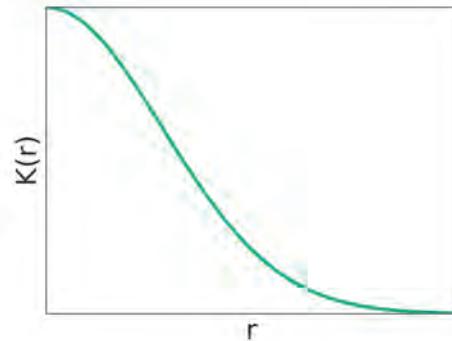
“ However, the gold is not at, but far below the surface and digging takes time ”

The problem can be described and simplified as the following: suppose you arrive first at a new, unmined location, of which it is known that it contains gold. More people are on their way, so you need to be fast to get most of the gold. Because it is a mathematical problem, the location is one-dimensional and exactly the interval $[0,1]$. At each x in this interval, the concentration of gold ore is $f(x)$, and $f(x)$ is a continuous function. However, the gold is not at, but far below the surface and digging takes time. How would you start your mining?

The mathematical concept behind this setting is called “Gaussian processes”, especially Gaussian process prediction, and it is a generalization of the Gaussian distribution. At each x , the concentration is normally distributed with a certain mean $\mu(x)$ and standard deviation $\sigma(x)$. If we measured the concentration at a location x , then this $\sigma(x)$ reduces to zero. But these

distributions are not independent: since $f(x)$ is continuous, nearby locations will have a similar concentration of gold. Therefore, a covariance function is necessary which couples the measurements, just as covariance between two normal distributions couples them. This introduction is way too short to completely explain Gaussian processes, but I hope the idea is clear. So you can start mining gold!

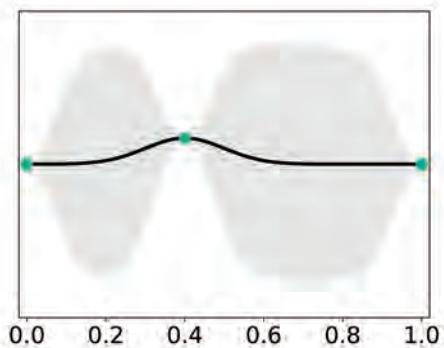
First, you determine (or in practice, guess) the covariance function K , which tells you how measurements at different locations are related. One function often used is the squared exponential function.



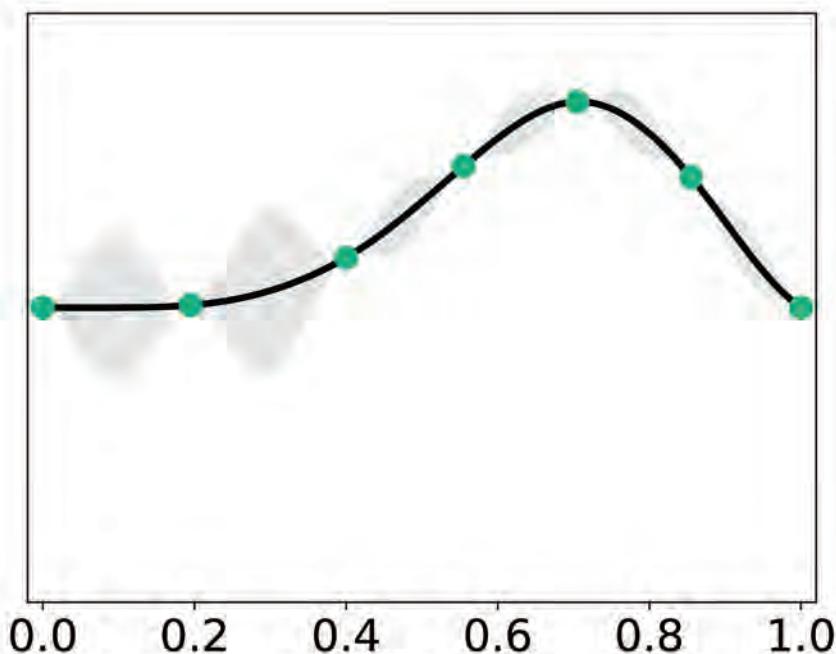
You can see that for zero distance between measurements ($r=0$), the covariance is highest, while it decays for larger distances.

Then, you can start the actual mining and you start digging at a few chosen locations, which we call x_i . From the soil samples, you determine the concentration

of gold ore at these locations, which we call $f(x)$. This does not only give us information about the location itself, but also about its surrounding locations, as can be seen in the figure. Red dots represent samples, the black line the estimated concentration and the gray zones represent the uncertainty (95%-confidence interval). The concentration at $x=0$ and $x=1$ is found to be zero. Since Gaussian processes do not know that concentrations are positive, the uncertainty zones also include negative values.



Now, we do not have a lot of information, so we take more soil samples, each time at the location which has the most uncertainty. After 7 measurements, we found the following structure:



So we found where to dig! Or, at least, approximately, since the uncertainty zones still contain other peaks, but with a small probability. How do we know there is no completely different maximum? Actually, we do not: but we do not expect another maximum because of the covariance function.

“ So we found where to dig! ”

Of course, this is somehow related to my own work. In my case, the soil samples are simulations of wind farms and I am not looking for a goldmine, but how to reduce the uncertainty (gray bands) as far as possible with only a small amount of simulations. This is especially hard since the problem is high-dimensional and its input variables x are dependent on each other.

THE GOLD CARAMEL POPCORN CAKE

As some might have tasted the cake at AV 159, this is the recipe on how I made a gold popcorn cake. There are of course many varieties to it and you can use a different kind of batter or buttercream if you want to.

TEXT Wouter Boschman - GETAART

INGREDIENTS

CAKE BATTER FOR BISCUIT CAKE:

- » 150g sugar
- » 150g flour
- » 5 eggs
- » 25ml milk

DECORATION:

- » caramel souce
- » buttercream (around 200g)
- » premade caramel popcorn,
regular popcorn is also possible

the sugar and mix them together. Then add the milk and flour and mix until everything is nicely combined.

4. Once you have both your egg yolk mixture and egg whites ready, take a little bit of the egg white, put it in your egg yolk mixture and softly fold it into the batter. Then pour all of the egg yolk mixture into the egg white and start folding it in. It is important that you don't mix in the batter but carefully fold in the batter so it stays light and fluffy (this may take some minutes).

5. Now that the batter is done. Put a piece of baking paper on the bottom of a 24 cm round baking pan and put oil in the pan. You can also bake the cake in 2 different pans so later you don't have to cut the cake into two layers. Fill the pan(s) with all the cake batter

HOW TO MAKE THE CAKE BATTER:

First off, this is the recipe to make biscuit cake. The reason for using this kind of cake instead of any other cake recipe is because it is light and fluffy, which will complement with the rich flavours of the caramel popcorn.

- 1.** Preheat the oven to 150 degrees Celsius.
- 2.** Separate the egg whites from the egg yolks. Start with mixing the egg whites and mix them long enough until you get nice stiff peaks. It is very important the mixing bowl was clean and that none of the egg yolks were still in the egg whites, otherwise the egg whites won't get nice and fluffy.
- 3.** In another mixing bowl add the egg yolks and





and put it in the oven for around 30 mins. Do not open the oven for the first 20 minutes, because then the cake will collapse. After the 30 minutes, check if the cake is ready. If so, take it out of the oven and let it cool for 2 hours.

PUTTING THE CAKE TOGETHER:

I have not included any recipe for buttercream or caramel sauce, otherwise the recipe would be way too long. So, just look on the internet and try to find one you like and make it while the cake is still cooling down.

1. Once the cake has cooled down, cut the cake into two layers and put the top part aside.
2. Spread a thin layer of buttercream on one side of the cake and on top of that layer add half of the popcorn. Then add again a thin layer of buttercream on top of the popcorn and drizzle as much caramel on top of that as you want.
3. Put the other half of the cake on top of it, spread another thin layer of buttercream on it and add the leftover popcorn on top of that. Again drizzle as much caramel on top of that as you want and then you are done. You can of course cover the sides of the cake with buttercream as well but that is additional and then you will not be able to see the popcorn in the middle layer.

After that, the cake is finished. Put it in the fridge to cool, and most of all, enjoy!

sugar
Flour
Eggs
Milk

| infimum: Strange or funny quotations from a teacher, a student or faculty member.
Here you can find infima sent to the Supremum commitee. inf.gewis.nl

Dante S: "Fijne dierendag allemaal"

SjaarsRick: "Dierendag is toch 8 maart"

Dante: "Nee 4 oktober"

SjaarsRick: "Oh, wacht laat maar 8 maart is een andere dag. Dacht dat mijn moeder jarig was op dierendag, maar het is wereld vrouwendag."

Niels V. nadat hij gezegd heeft dat er nog nooit een **infimum van hem ingestuurd is:** "Ik moest wel drie keer slikken voordat het weg was."

Twan terwijl hij in gesprek is met natuukundestudenten: "Natuukundestudenten komen altijd superslim over voor ons, maar dat valt eigenlijk wel mee."

Frank over porno: "Ja maar vroeger, toen kon je gewoon nog een hele website downloaden, dan had je hem gewoon op je computer!"

Ruben B: "Ja dat weet ik maar is iets mod 10 altijd 1?"

Bram B: "Ja daarom zit er ook plastic om een komkommer, dan kan je hem nog eten na gebruik."

Dante is naar de kapper geweest.

Willem: "Je ziet er wat meer oostblokkerig uit."

Over het aantal deelnemers voor de eetlijst van de LaTeX training.

Levi: "Ik denk dan dat deze twintig deelnemers verdubbelen met een factor vier!"

Spouwsjaars: "Jeroen, ga je bij de AC ofzo?"

Jeroen N: "Ja"

Spouwsjaars: "Ben je daar niet 7 jaar te oud voor of zo?"

Na een waterpolowedstrijd van Nayade, een biertje op het terras

Vincent K: "Jongens, zijn jullie Nayade ofzo? Want jullie lopen echt ver achter!"

Tim: "Wat is 100/1.25?"

Lars: "80."

(even later)

Lars: "Wacht hoe kom jij op 80?"

Tim: "Dat zei jij."

SjaarsRick, nadat hij zijn meuk bij de free-for-all gevonden heeft: "Wat is dit voor een Jodenclub, een Synagoge is er niks bij!"

Tamara W: "Kan je je hand daar niet insteken?"

Hondenhaar: "Nee, mijn hand is daar niet breed genoeg voor"

Peter V: "Hij zat niet meer in mij, dat was het probleem."

Mattijs B: "Mijn hoofd is zwaar."

Yanelle S: "Ik voel het."

Michael Y: "Hersens wegen veel."

Mattijs B: "Water nog meer."

Jeroen N: "Ik weeg nog meer."

Ruben: "Water ligt toch alleen maar in die grote bakken? Oceanen toch?"

Tijdens college terwijl er een willekeurige TSP op het bord getekend wordt.

Celine: "Heej dat lijkt op Limburg!"

Hondenhaar: "Als je bang bent voor edelgassen, heb je dan xenonfobie?"

SjaarsRick: "Ik heb net engineering design gehad, en ik ben nu al het meest capabele groepje dat mijn tutor ooit gehad heeft!"

Laura Kuntze: "Wat moet ik raden? Ananas of een kut?"

Introkiddo: "Tim Meeles, is dat niet die clown met die schort?"

Tobin: "Jeroen snijbloem, of hoe heet die gozer ook al weer?"

Boudewijn van Dongen: "Danish people are even weirder than Dutch people."

Luuk: "Wat kan ik nog doen?"

Jet K: "Bier drinken en kut roepen!"

Poes: "Kutkutkutkutkutkut!"

Wesley in de McDrive: "Doe maar 2 dozen 40 kipnuggets!"

Verkoopster: "Welke saus wilt u daarbij?"

Wesley: "Doe maar van alles wat. Maar vooral zoetzure saus."

Wesley: "Weet u wat, doe alleen maar zoetzure saus!"

Wesley: "Ik tong echt niet graag met mensen die zoenen."

Poes: "Ik heb zelfs niet over me heen geplast, goed he!"

Thijs: "Als we 4 van de 3 groepen verliezen is dat best een acceptabel loss."

Niekie op de FLUP met een flesje bier in haar handen:

"Het voelt weer net alsof ik een slaapfeestje heb zoals op de basisschool!"

Levi: "Ralph, hoe kun je er nu al zo moe uitzien?"

Ralph: "Ja, jij bent natuurlijk niet gewend dat je 90 mensen op je lunchlezing hebt"

Naomi: "Ik vind het altijd kut om mijn eigen stem terug te horen."

Pieter: "Er zijn twee soorten Thor-meisjes."

Christine Ingwersen: "Lelijk of Lesbisch."

Stefan H: "Hey AviCo, jullie weten hoe plafondplaten werken!"

Wesley B: "We kunnen ook GETAART vragen, die doen toch niks."

Ellen: "Het is een man, die is in drie tellen klaar."

Semi: "Nou, waar gaan we vanavond tanken?"

Wesley: "Nou, Paul schijnt dicht te zijn..!"

Niekie: "Ja, maar we zouden ook lekker tanken!"

Sako: "Niekie, zeg je nou dat Paul niet lekker is?"

Eline: "Ik zou echt geen geneeskunde kunnen studeren, ik hoorde dat je dan in een lijk moet snijden."

Twan: "Een dood of een levend lijk?"

Siauwani (Sjaars) over het Pacman logo: "Oh dat is GENERDS!"

Twan: "Ik wil die nootjes hebben! Iemand heeft ze onderop gedaan."

Tim H. tegen Ilse: "Ik denk dat ik jullie relatie best wel kan opspieren als ik een keer meedoe."

Bouke: "Een paar extra tieten komt altijd wel van pas."

Siauwani (Sjaars) tegen JoeJoe: "Aangenaam, ik ben medeChinees."

Hondenhaar: "Ja, want Enschede Kennispark ligt langs het PSV-stadion."

Sabine G: "Maar Evie, je hebt leuke momenten overgehouden aan vorig jaar, Teun enzo!"

Evie N: "Als je dat leuk kan noemen..."

Tijdens het maken van Advanced Algorithms

huiswerk is Wout R. zijn bewijs aan het vergelijken:

"Ja, kijk, die +2 die ik hier heb die hebben zij ook hierz.. ehh.. da.. oh ja! ja, bij hun is het een -2 onder de breukstreep, maar dat is hetzelfde als mijn +2 boven de streep, dus we zitten goed!"

Renee v H. tijdens college Business Information

Systems: "Nu krijg ik zin in een groot stuk vlees!"

Leon: "Ik vind één klaplong, euhh ik bedoel twee klaplongen, wel genoeg!"



LET'S SHARE OUR GOLD



Lately I found myself in several conversations discussing the childhood and upbringing my friends and me have experienced. Maybe these conversations happen more often when we are getting older or they are connected to the fact that my group of friends has become more international since I moved to Eindhoven. Most of these discussions made me realize how thankful I have to be for the environment I grew up in and for all the things my parents provided me with.

TEXT Anja Syring

I grew up in a small peaceful city in the south of Germany, where I lived in a big house together with my parents and my two sisters. The elementary as well as the high school were a short walk away and I went there until I finished my A-levels. During my childhood, money was never an issue: I had a closet full of clothes that regularly drove my mom crazy because I was too lazy to sort them, plenty of school utensils because I obviously needed pens in five different shades of each colour to get high grades in school, sandwiches for the school breaks - although I would regularly 'forget' about them and rather buy something sweet and unhealthy at the school bakery. If there was a school trip it was never a question whether I could join or not. Even when I earned money during my Bachelor studies and lived at home, I did not need to pay rent, which enabled me to afford a semester abroad in Dublin. Also, when I decided to apply at the TU/e for my Master my parents were very supportive.

" I believe that our university is a similar naive bubble... "

This might now sound like I am a spoiled little princess but I think my parents did a great job in teaching me how to handle money. Although it was clear that we could afford certain things, they did not simply hand me the money but made me work out a plan how I

could afford the things I wanted. Looking back on my life so far, I can clearly say I have been more than fortunate.

On the other hand, this review on my life has also occasionally made me feel like I grew up in a protected, naive bubble. All my friends seemed similarly privileged as I was and although we heard from teachers that there are people who have to worry about how to afford food for an entire month, this always seemed far away and like they wanted to scare us into getting good grades to get a good job and not end up poor after leaving school. I could not really connect to these stories and it took several years until I fully realized that there are more poor people living in Germany than I would dare to believe in such a highly developed country. I could not imagine another family not having enough money to serve the kids proper food after they came home from school or afford to send them to the sports practice like all the other kids.

I believe that our university is a similar naive bubble since we can all afford to go there. Also, dropping or failing courses does not seem like a big issue to a lot of my friends although it means that their study has to be extended by a few quartiles to catch up on ECTS - which obviously also results in more study fees. There are of course students that get supported by a scholarship or a government loan but as long as we are able to afford unnecessary expenses as partying in Stratum or fancy coffee at Starbucks I would say our life is pretty comfortable.

With my current point of view on the Netherlands I was very shocked when I read that in 2015 about one out of ten households lived beneath the poverty line which is drawn at 1.020 Euro for a single person [1] (which is still pretty high compared to other parts of the world). This statistic just does not seem to align with my image of this country and it woke an urge in me to pop this secure bubble that is surrounding us. How can I live in a city where 12.3 % of the households are considered poor without ever noticing it [1]. How can we complain about the cantine raising the prices by a few percent when our trays are still full of food? How can we skip classes just to sleep a bit longer while other people our age cannot even go to university because they need to get a job to support the family?

“ ... several things you learn at TU/e aim to improve our life... ”

In general, this topic caused me to think about the goal of our studies. Of course several of the things you learn at TU/e aim to improve our life by, for example, supporting sick or old people with new technologies or preserving our planet, but at the same time I feel like all of them will, in the end, mainly increase the wealth of the mostly already wealthy owners or inventors of these certain technologies and products. To me the environment we are living in is out of touch with the parts of our society that are less fortunate. But at the same time it should be us that are working on minimizing this gap. We could simply blame it on the way our capitalistic world works, but shouldn't we be made more aware of the inequality in our world and can't this play a bigger part in our university as

some sort of social responsibility? Thankfully there are several organizations and charities like UNICEF that work on changing this inequality and have already achieved a lot. However, I believe that many of us students and professors could engage even more in supporting them. I don't mean that from now we should give up our comfort of living and give away all the money we earn, but sometimes before buying something I like to stop and question myself whether I really need it. If I come to the conclusion that it is just another unnecessary gadget that would probably end up in the closet after a few usages to collect dust, I decide not to buy it and put the saved money in a pot (a little pot of gold) which I will donate to a charity by the end of the year.

But what do I actually want to achieve with this article? I definitely did not want to judge anyone who has so far been blind about this topic and I also don't want to tell you like a missionary that you should go and donate money. If you are reading this and you're thinking "What the hell are you talking about" and you don't want to share your hard earned money, then so be it. But I hope that I have motivated a few more people to pop their own bubble and look at different parts of our society. I want to believe that I am living in a society where most of us care about other people and where we share our gold with the less fortunate - and hopefully this is not another naive thought of mine.

SOURCE

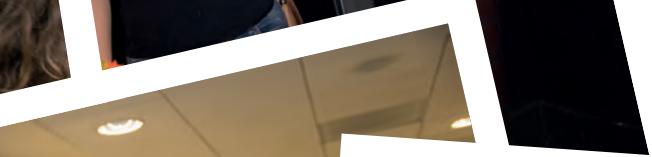
[1] Nu.nl, Zo ziet armoede in Nederland eruit, visited on 08/10/2017:
<https://www.nu.nl/weekend/4185176/zo-ziet-armoede-in-nederland-eruit.html>



FLASH! FLASH!

Where are those coming from? If you see flashes from the corner of your eyes, there is a good chance it might be us. And in this year of celebration, we as GEFLITST are ready to take a lot of lovely photos! We hope you enjoy them on www.gewis.nl/fotos!

Here's a festive sample of pictures! Enjoy!



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SUPREMUM

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