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The Spooky, Merry Science of the Holidays

By *Andreas Pingouras*

You are sitting in a warm dining room, a familiar array of foods are laid out in front of you, surrounded by familiar people. Songs are playing in the background; songs that you've heard countless times before. The room is full of blinking lights and decorations, and the air is filled with a number of very characteristic smells. 'Tis the season, but how does this make you feel? If you like the Holidays, surely they entail a kind of Holiday Spirit that warms you up and makes you joyful!

Well, according to a study conducted by colleagues at the University of Copenhagen (Hougaard et al., 2015), for those of us celebrating Christmas, a Christmas spirit, can be found within the brain. This spooky but festive spirit makes its home in a cortical network. Specifically, the study found significant activation for christmas-themed stimuli in people celebrating Christmas. This was found in the primary somatosensory cortex, the left primary motor and premotor cortices, as well as the right inferior/superior parietal lobule, all of which saw a significant increase in activation that was not found in groups not celebrating Christmas.

But wait, there's more! Christmas is intimately connected with nostalgia for a lot of us, it takes us back to our childhood and to a feeling of joyful warmth. This is not coincidental! A paper published in the journal *Emotion* (Zhou et al., 2012) presents the findings of a study that related a lower temperature with nostalgia, and a feeling of nostalgia with a feeling of warmth. So, it seems this merry season has a festive reason to be in the middle of the coldest season, after all!

And so, science has helped us understand Christmas, but can science help us have a merrier Christmas? Well, a study published in the journal of *Happiness Studies* (Kasser and Sheldon, 2002) purports to attempting just that, and guess what, all the cheesy Christmas and children's movies are right!

According to the findings, people were more likely be happier during the holiday season when their holidays involved family, spirituality, and environmentally conscious behaviour while people were less happy when their holidays revolved around consumption and money. Surprisingly, the study also found holiday merrymaking to be more successful for older people and males. Hollywood was right all along! Who would've thunk!

Hopefully now you're equipped with the right tools to have an excellently scientific holiday! You can now go to that family dinner confident that you'll amaze your relatives with your newfound knowledge, or just follow science's recipe of Christmas joy: add a few extra years to your age, make sure you are male and go to church to enjoy Christmas to the fullest!



A talk with Joram Mul

By *Siel Hoornaert*

Dr. Joram Mul is a teacher at the University of Amsterdam's Master in Brain and Cognitive Sciences. He is also a researcher at the Swammerdam Institute for Life Sciences here at the UvA. I spoke to him to ask him some questions about how he started researching in neuroscience and what his advice for us students is.

Let's start at the beginning: what is your academic background?

I studied biology at Utrecht University, I started in 1998 (wow). That was a 5-year curriculum which I did in 7 years because I partied too much, and then I did my PhD at the Hubrecht Institute between 2005 and 2010. My PhD was in rat models which nobody at the institute worked on, so I never really got a feeling for how good I was at what I did, and I really loved doing research. I wanted to see how I compared to others, so I went to a lab in the US that worked on this topic to do a postdoc, which was in Cincinnati, Ohio, for 2 and a half years. I moved to Boston and did another postdoc for 2 and a half years, and then I moved back to the Netherlands to work at the AMC for almost 3 years and then started this summer at the UvA.

How did you go about finding your PhD or postdoc position? Did you roll from one thing to the next, did you know someone there, or did you apply to many positions?

I always thought it was chance. As a kid, I had a lot of aquaria with fish, so I wanted to become a marine biologist. But...when I was an early teen I decided I would never find a girlfriend with just aquaria and fish, so I got rid of them and didn't know what to do next. I decided to study biology at Utrecht University. I did a molecular biology course in a very tall building and I asked the PHD student that was supervising us where they do really good biology research in the Netherlands, and he literally pointed at the Hubrecht Institute and he said "there." I looked it up and knew I wanted to do my first internship there. I looked up 3 labs that I wanted to apply to, and I literally had them in alphabetical order. I went to the first one, Edwin Cuppen - with a C - and I had an interview with him. He asked me if there were other labs I was interested in and I said "yes! Ronald Plasterk and Freek van Eeden" and he laughed and told me those were the two labs he collaborates with. So, I got the internship and worked on this genomic analysis of rat models.

During that internship, Mark Vidal, who was a professor at the Harvard Medical School, gave a talk about protein-protein interactions. It was a really cool talk and I thought “wow! I want to do my internship there!” I wanted to go abroad, so the US was an easy choice. I sent a bunch of letters to a bunch of labs, and everyone said, “yes, you are welcome, but bring your own money.” I was about to despair, but then Mark Vidal’s lab said I could go there. There was a Dutch guy working in the lab who took me in, and he said, “We’ll give you a little bit of money.” So, I ended up going to Boston to do that internship. Mark Vidal even offered for me to do my PhD with him, but my Dutch supervisor said “No, I would recommend against it. It’s a very big lab, very successful, but you won’t have any supervision.” In the end, that project that I worked on ended up becoming a cell paper, but you can never know if that would have happened. I ended up going back and writing my thesis for Edwin. I wrote my thesis with him, and he said, “looks good, come do a PhD with me.” And that’s how I did my PhD.

After my PhD, there were 4 labs that I interviewed at. I decided to go [to Cincinnati], even though Cincinnati is not a fun place to live, but for my work, it was a really good option. Then I decided to go to Boston to meet up with my girlfriend at that time. She was finishing up in the Netherlands, so we ended up in Boston, because there were a lot of research labs there.

What are things that you look out for when choosing a good lab vs. a bad lab? For example, the supervision, things that you should take into consideration, etc.

So, the first thing that I look at is the size of the lab. The bigger the lab, the more successful the PI, which is great, but it’s also sink or swim. As an internship student it doesn’t matter that much – it actually might be good if you do your internship with a really famous person because it will help you in the future. But as a PhD student you might not get the supervision that you need. As an internship student, though, pick the topic that you love most of all. Get a glance of how big the lab is, how many people work there, see if there’s anyone that you know who works or worked there. Preferably people from your native country that you can talk with and get the inside information.

When I went to Boston, I got the information that it was fantastic and they had a lot of facilities, but that wasn’t the case. It was definitely not as high-tech as I expected from a Harvard lab. So, talk to people, talk to your network, talk to supervisors you’ve had, or teachers of courses.

Do you think it’s a crucial experience for a researcher to experience to go to another country and see how they do research there?

No, I don’t think it’s crucial. It used to be that if you wanted to apply for grant money in the Netherlands, you had to have foreign experience, which I don’t think is the case anymore. I still advise any student to do it, because it’s a fantastic chance to just go somewhere and have fun for a few months. It’s not that long, a few months. Anyone will survive; your family, your relationship...

The way we train people in the Netherlands is very efficient. So, people work from 9 to 5, but they work very efficiently, whereas in the US it can be a little bit less efficient... People think they work long hours, but they don’t really work that hard. In the Netherlands, we are also relatively blunt. That is a stereotypical thing you usually hear, but I think in science it’s usually true. People will say “this is a bad design” or “this is nonsense.” But in the US, people are much nicer and more theatrical. Right now, in the Netherlands, we are becoming more and more strict regarding our ethical approval for both clinical and preclinical research. That means you have to do a lot of paperwork. It’s good that there are strong ethical controls, but it almost seems to become a little bit too strict, whereas in the US it’s relatively easy. You still need ethical approval of course, but there is much more flexibility in the US. If we had an idea, maybe in the same week we could start an experiment, whereas in the Netherlands, it might take up to a year just to get that approval. So, I think in a country like the US, there’s a lot of money in research and there’s a lot more flexibility, and therefore also a lot of the cool new things that are developing; the new revolutions are usually from the US. Having said that, the Netherlands does really well. Our level is really high and for such a small country and the small amount of people we have in research. So, I think it’s a great combination to be trained in the Netherlands and then going to the US.

And it’s hard to pinpoint what you learn, but having worked for several PIs, you pick up the good things from each PI and you hopefully ignore the bad things. Ideally, you become the best version of all of them together, which is the value of the internship; not just learning about a cool topic or about what you want to work on in the future, but meeting new people, meeting international communities. Different cultures can be hard work and stressful but it’s also a lot of fun. There’s also a lot of social events: you play soccer together, go out together... So, it’s a great opportunity to go abroad and experience some things that you haven’t experienced before.



So, based on that, do you have any advice for any of us?

I never really knew what I wanted to study. It feels like [master’s students] these days already have to know what you want to work on. In my days, when you scored a 6 that was fine.

I think you guys are much more graded for high grades. There’s much more pressure on your shoulders. There’s so much going on in the academic world, so much to work on, even just within psychobiology, for example.

Talk to people about different topics. Follow different topics. I purposely worked on rat models that became obese and the yeast to hybrid system, which was completely something else. Complete different model, different questions, but you could study protein-protein interactions, and I could see if I liked it or not. It made me go back to the animal. Seeing whether a rat became obese or thin to me was cool, whereas other people love sitting behind the microscope and seeing DNA structures.

NEUROPUNS

"I love this"

- Andreas while choosing a meme

Overheard something funny? Email the quote to us at newsletter.cognito@gmail.com



We want you!!!

InCognito is ran by first-year students (Anastasia, Andreas, Angela and Siel, pleased to meet you!) but we want you all to participate in this adventure! If you have something you want to share with us, please write us at our email.

Get a feel for what you like. The only way to know what you like is through experiences; through courses (you don't have much time, so pick courses that you know aren't all on the same topic, even if it's not your favourite topic, do something that's out of your comfort zone.).

Attend as many talks as you can, also the ones that are not that interesting – usually those are the ones that end up being the most interesting, and maybe you'll learn something new. Just get experience and talk to people about topics before you pick, and really **prepare your internship.** I get so many requests for doing an internship with my team in my lab now. Most of them are just generic emails like “hey can I do an internship with you?” Really prepare if you are really excited about a topic or a lab, really make an effort to approach them in the right way, a way that really oozes your enthusiasm because that will really increase the chances that they will get in touch with you. **Do that in time!** Start thinking about those things way before you have to start them, and that's hard because you're still busy with other things. But prepare in time, get as much information as you can, talk to teachers, lab people, you can go to your professors at your university and just talk to them, their door is open – you can just ask them! Tell them “I'm interested in this, who should I go talk to?” If you go on the internet yourself you're not going to find the really cool things.

My advice is to go abroad. It's a great chance, later in life you'll get a PhD position or kids, and you get stuck. You can't do that [go abroad] for a long time, you could still do a postdoc of course, but go to a country that you like, that you want to experience – for me that was the US – and yeah, **make the most of it!**



Christmas Honey Pastries

Melomakarona

By Anastasia Dima

Source: Akispetretzikis

For every Greek and Cypriot, Christmas means a happy (aching!) belly full of melomakarona! We know that the holiday season has arrived when grandmas start preparing these traditional sweets, alongside the Christmas tree decorations, and the sweet aroma of orange, honey, cinnamon and cloves, which fill the house with a feeling of christmassy nostalgia...



Preparation: 15min, Cook time: 30min, Portions: 80

Ingredients

- For the syrup: 500 g water ~ 800 g granulated sugar ~ 150 g honey ~ 3 stick(s) cinnamon ~ 3 cloves ~ 1 orange cut in half
- 1st mixture: 400 g orange juice 400 g seed oil ~ 180 g olive oil ~ 50 g icing sugar ~ 1/2 teaspoon(s) cloves ~ 2-3 teaspoon(s) cinnamon ~ 1/4 teaspoon(s) nutmeg ~ 1 teaspoon(s) baking soda ~ zest of 2 oranges
- 2nd mixture: 1 kilo all-purpose flour ~ 200 g semolina, fine
- To serve: honey & walnuts

Method

For the syrup:

- Boil all of the ingredients for the syrup, apart from honey, until sugar melts. Remove from heat. Add the honey and mix till combined.
- Let syrup cool for 3-4 hours. It must be cold by the time the cookies come out from the oven. You can also prepare the syrup from the day before...

For the cookies:

- Preheat the oven to 190* C (370°F).
- To make the cookies, you need to prepare 2 separate mixtures.
- For the first mixture, add all of the ingredients in a large bowl. Mix, using a hand whisk.
- In a separate bowl, add all of the ingredients for the second mixture.
- Combine the first and second mixture.
- Mix by hand, very gently and for a very short time (10 seconds at the most). If you mix longer the mixture will split or curdle.
- Form the cookie dough into oval shapes, 3-4 cm in length, 30 g each. Try to keep them as similar as possible.
- Bake for about 20-25 minutes, until they are crunchy and dark golden brown.
- As soon as you remove them from the oven, soak the hot cookies in the syrup for 10 seconds.
- Allow them to drain on a wire rack.
- Drizzle with honey and chopped walnuts.

Finally... enjoy!

December Around the World

By Andreas Pingouras

December is a month full of traditions, celebrations and festivities for a lot of people around the world. These traditions can vary greatly in different cultures. From getting drunk to making logs poo, this festive month marks a time of cultured merrymaking important to many of us for a lot of different reasons. We asked our fellow students to tell us the fun traditions they have for the holiday season. Here is what you had to say:

The Netherlands:

"In The Netherlands, a lot of people visit huge department stores on the 26th of December ('Second Christmas Day', or Tweede Kerstdag). They go to IKEA for example, or to huge furniture stores. I don't know why this is a thing either!"

Germany:

"In Germany, it's a tradition to go to the christmas market, get smashed on Glühwein and then keep the mug because the design changes every year. Then once you're home you realize you actually have way too many cups and it's kinda weird to use a christmas themed one throughout the year so in the end they always end up in the shelves of office kitchens, where they are only used once all the other cups are dirty because someone forgot to turn on the dishwasher again...Happy Holidays."

"The time between Christmas and New Years Eve is called 'Zwischen den Jahren' in Germany, which means 'Between the years'. I don't even know, why I love this expression so much. But probably because I connect it with home more than any other holiday, even Christmas itself. Just those few, calm days between exhausting celebration duties. They feel more real and especially ever since I moved away from home, they make me feel genuinely close to my family."

"We have an Adventskalender containing a small present every day to count down the days till Christmas."

Lithuania:

"In Lithuania, Christmas Eve dinner ('Kūčios') is the highlight of winter holidays. The meal and the time before it includes Christian but also pagan traditions due to our long pagan history. The house is thoroughly cleaned in the preparation for the dinner. Empty plates are placed on the table in memory of deceased family members or those who could not be there, typically only for very serious reasons. People fast during the advent period, as well as on the day of Kūčios.

It is traditional to serve twelve different dishes (including snacks) for the dinner, however, meat is not served. The night after Kūčios is believed to have a mystical significance: the old legend that animals talk during that night is typically always mentioned at the table, and various old games that are said to predict the upcoming year are played after dinner."

Australia, UK, NZ:

"For Christmas dinner in UK, Australia, NZ (and maybe other countries), we pull Christmas crackers before starting the meal. The cracker is pulled apart by two people but only one person is the winner and gets the contents - they contain a little joke or fun fact, a small toy, and a colourful really thin paper crown. Everyone reads out their joke/fact and wears the crown for the rest of the meal!"

Australia:

"Apart from barbecues and Christmas on the beach, we celebrate Boxing Day with sports in Australia! It is the Boxing Day Test match which is a cricket game held in Melbourne, as well as the start of the Sydney to Hobart Yacht Race. We also play backyard or beach cricket on Christmas Day."

Greece:

"In Greece, on New Year's Eve, when the year changes, the person who first gets in the house, enters through the door with their right foot and smashes a pomegranate on the floor outside of the house for good luck (the tradition originates from the Greeks of Minor Asia-coastline of Turkey). Going shopping on Boxing day (Dec 26th!)" "We usually gather at our grandma's house and eat until we pass out, while watching some of our relatives quarrel about every kind of stuff but in the end they too will go back to eating and we will have a lovely atmosphere once again. We make Greek traditional treats such as melomakarona, baklava and kourabiedes which are delicious and full of calories We gather at the Port of my town and let candle lanterns in the sky while making a wish"

Cyprus:

"In Cyprus Christmas is largely celebrated in the same ways as in Greece, but we do have our own traditions in addition! Christmas is celebrated on Christmas day, usually during lunch time. The main dish is always a stuffed turkey in addition to a wide variety of a lot of other traditional dishes. Dessert includes melomakarona (honey cookies), kourambiedes (sugar coated cookies), and Christmas cake, a cake made of fruit fermented in syrup, among others.

In both Greece and Cyprus, Santa is actually Saint Vasilios who celebrates on the 1st of January and brings us gifts on new year's eve. We leave Vasilopita, a cake made especially for him, on a table next to a glass of wine. In the vasilopita we hide a coin and whoever finds it in their own piece has good luck for the rest of the year. On new year's eve, in Cyprus, we also play a game in which you throw small twigs in the fireplace while singing a poem to Saint Vasilios asking if a specific person loves you. If the twig makes a cracking noise, they do."

Catalonia:

"Caga tio ('uncle poo') - At the beginning of December a log of wood with a face drawn on it wearing a red beret-like hat rings the doorbell. The family then puts food on a plate for the log (so it gets big and fat). On the 24th of December, everyone in the house sings songs while aggressively hitting the log (now covered in a blanket) with sticks to make the log 'poo' out presents."

No man's Land:

"We hide a little orange astronaut in the house and the first kid to find it wins \$50."

"Dad, cousins, and I all doing tequila shots out of my great grandmas fine crystal and seeing how many we can do before getting caught by the older generation."



By Ángela Santiago

And as all the good things, the first and last Newsletter of the year finish here! We want to thank you all for your patience while waiting the 2019/2020 Newsletter. We have finally organized and we will give our best to deliver monthly issues from now on.

From the whole newsletter team, we wish you the best this holiday season

