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RELATIVISTIC DRINKING MECHANICS

Cleaners at Cambridge recently had to be vaccinated against hepatitis, due to increasing numbers of vomiting freshmen. In this paper we present some strategies related to substance abuse, in the hope that USyd students will be able to hold their liquor.

I. INTRODUCTION

There have been many previous attempts to apply quantum methods to managing alcohol consumption - most notably, the Department of Imbibement Inhibition's attempt to quantize alcohol into standard drinks.

These drink counting methods have invariably failed, as nobody drinks middies or light beer. Exacerbating this problem, a person's arithmetical ability is inversely proportional to their need to know the amount of alcohol in their system.

Here we take a harm minimization approach, whereby we draw direct analogies from Quantum Mechanics. We then correct for relativistic effects.

II. QUANTUM EFFECTS

A. Heinekenburg Uncertainty Principle:

Commonly known as 'beer goggles', this principle states that you can either know what a physicist looks like, or you can be attracted to them, but never both at the same time.

B. Bladder Operators:

Self explanatory. The only thing to note is that the first use of a lowering operator can sometimes collapse your wave function, requiring unusually frequent bladder lowering operations for the rest of the night.

Beer + Mechanics = Engineer. Watch out.

C. Commutation

Commuting operators travel from the Central Coast or the Blue Mountains for a party - due to a lack of transport options, they go home via the same route they arrived. Smooth operators do not commute, as they usually have a pad in the city or go home with someone else.

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EDITORIAL

Issue k seemed to go off without a hitch, plus I have an assignment due (already!). So I'll keep this short.

As our next event is going to be a pubcrawl [or a pubstall, depending on how long we plan on staying at the Lansdowne], I thought the relativistic drinking mechanics article warranted a front page.

And I've left just enough space for a photo or two of Beachball.

Thomas Clement

Engineering/Science IV

Engineers. Watch out, they're drunk ... or sober.

Inside this issue:

Yellow box of semi-interesting facts:

- Chemistry Fallacy: Beakers revealed to be glorified glasses.
- WoW proven to contain Heroin, and geeks.
- Meredith grey dies.
- Don't worry, she's revived in the next episode.
- Warning "Grey's Anatomy" spoilers above.

PRESIDENT'S REPORT

I hope you have all survived your first couple of weeks at university. Now since I have the opportunity to write for this publication I have the opportunity to vent my spleen (editor permitting [Ed: Somewhat].) But, since the venting of my spleen would take up many pages, I have decided to not to vent it just yet... [Ed: Thank you] I'll wait until we are really short of content. SO if you wish to avoid such a large rant, SUBMIT ARTICLES!!!

Physoc had their first event of the semester on Thursday the 8th of March. Designed especially for first years to get involved, there is a full report just down the page I would like to thank Felix Lawrence, who ran the event on the day, Andrew Stefan, for turning up to help out and lecture bashing and Tom Grujic who turned up and helped out as well.

Now, if you're in second or third year and reading about how we love first years - do not despair, we still love you too ... thus, upon the suggestion of Comrade Member Nick (a first year) we have decided to have an early pub crawl, from the Lansdowne to the Crystal Palace (outside Central Station). Starting at about 5pm to about 7pm on Friday of next week [Ed: Friday the 23rd of March] . WHAAAAYYYYY - PUB CRAWL - I'm going to go get some practice in....

Duncan Sutherland

Science XIII

Who would have thought! Food on campus! Get in quick before it's all gone!

QUOTES COMPETITION

After a long silence, Ian Falconer has once again opened his gob and let fly:
"That's what experimental physics is all about - taking fuzzy images and convincing people they're significant."

Joe Khachan has also made a start in this years quotes competition:
"We can't avoid mortality here [in the third year lab]."
"We may have to put two students in the one box."

Ned Ekins-Daukes, has also let a few things slip:
"So you're all saying 'yes, this is simple, I'm bored'."
"This is the number of k-states, this is the volume of our sphere and this is the number 2."
Thanks for pointing that out Ned...
"I'm not torturing you for fun. If I was, I'm sure I could find something far worse."

And Dick Hunstead will not get away with this comment against a certain member of the committee.
"...with your dark glasses, you looked like you'd been let out for the day."

I will have my revenge.

All of the things that Tim Bedding has said have been entered before, even his lectures are straight out of the textbook. I know. I've checked.

But the School of Maths and Stats, have also made a good start in their attempt at taking the quotes competition prize away from its sacrosanct place on Physics road:

D.J. Galloway's efforts:
"When people try to solve non linear problems...they kick them in the groin until they turn into linear problems."
"...and 10 steaming pages later, you'll have the answer."
"There's quite a lot of waffle in the notes."
"I'll try to keep a constant p. I've managed it so far this lecture."
"Stagnation is a nice word. Its got this sense of something bad and evil smelling..."

And David Ivers:
"You'd have to call the Greek letter alpha, um, I don't know, um, A...L...P...H...A, or something like that." Referring to variable assignments in FORTRAN.
"Some people think diagrammatically. In pictures and so on."

So have any of your lecturers opened their mouths and let their stomach rumble? If so...submit the quote to Jeremy: usydphysoc@gmail.com, Be in the running for great prizes. YES - the submitter of the quote wins a cool prize! [Ed: Metaphorically, not liquid-nitrogeney.]

Duncan *"Oooh yeah. I submitted all of the above"* Sutherland

Science XIII

[Ed: I think I've got a winner, from Robert Brian Howlett, mathematics:

"You don't have to think, you just have to be able to copy"]

UPCOMING PHYSOC EVENTS

Alright, here it is. The Physoc Calendar. Uncertainties in the predictions are implicit.:

Little Pub Crawl: Friday March 23rd. Meeting place: Lansdowne @ 5pm Contact Details: If you're going to be late (well before 5pm Friday) e-mail usydphysoc@gmail.com and we'll send you details about what bars at what times closer to the date.

Poker Night: When we can be bothered to organize it.

Big Pub Crawl: A little while after Easter.

Bowling Night. Maybe, we'll see.

Zone 3: Yeah, probably a huge pipe dream. Lasers!

BBQ: We really need to have one soon, otherwise members might be feeling sheepish about giving us $0 for their membership.

Duncan Sutherland

Science XIII

PUZZLE SECTION

I still think it a smart idea to include a puzzle section, especially from the feedback given by some of the more informed (Read: bribed) readers. Consequently, I have no recourse but to flagrantly rip off (with citation of course) the puzzles by William Wu (http://www.ocf.berkeley.edu/~wwu/riddles/intro.shtml) again.

The 100 prisoners and a light bulb problem still stands as the year long puzzle. So far we have received no solutions. However, we'll start a new problem this week:

Single-file hat execution:

10 straight-jacketed prisoners are on death row. Tomorrow they will be arranged in single file, all facing one direction. The guy in the front of the line (he can't see anything in front of him) will be called the 1st guy, and the guy in the back of the line (he can see the heads of the other nine people) will be called the 10th guy. An executioner will then put a hat on everyone's head; the hat will either be black or white, totally random. Prisoners cannot see the color of their own hat. The executioner then goes to the 10th guy and asks him what color hat he is wearing; the prisoner can respond with either "black" or "white". If what he says matches the color of the hat he's wearing, he will live. Else, he dies. The executioner then proceeds to the 9th guy, and asks the same question, then asks the 8th guy ... this continues until all of the prisoners have been queried.

Quality hats right here. Only the best for our soon to be dead prisoners.

This is the night before the execution. The prisoners are allowed to get together to discuss a plan for maximizing the number of lives saved tomorrow. What is the optimal plan?

After you have solved the above problem, generalize. There are N prisoners and K different colors of hats. What's the optimal plan?

Hint: if there are N prisoners, you can save N-1 lives, guaranteed!

Hint: Number/Coding Theory

This puzzle is well documented on the internet, so don't worry about submitting a solution. But it's a great mind stretch.

EASIER PUZZLE SECTION

Somewhat easier than the above. Thanks Will again!

Infinite Quarter Sequence:

You are wearing a blindfold and thick gloves. An infinite number of quarters are laid out before you on a table of infinite area. Someone tells you that 20 of these quarters are tails and the rest are heads. He says that if you can split the quarters into 2 piles where the number of tails quarters is the same in both piles, then you win all of the quarters. You are allowed to move the quarters and to flip them over, but you can never tell what state a quarter is currently in (the blindfold prevents you from seeing, and the gloves prevent you from feeling which side is heads or tails). How do you partition the quarters so that you can win them all?

So anyway, you can Google the solution. If however you've answered the 100 prisoners drop us a line:

usydphysoc@gmail.com

SUBSKI, A RANT

13th of March has finally come around. Time to ski... Drink... Whatever... something about snow...

Sweet I start at midday tomorrow, that gives me time to write this article...

Anyways, I arrived. Got a free drink ticket thing. Left, came back, got another free drink ticket thing. This combined with my other free ticket drink thing totaled 3 free ticket drink things, later to be exchanged for 3 equally free drinks. Awesome.

Also free, was the foodstuffs. Sausages in bread with a variety of 2 sauces. They tasted as free as that red squishy couch that that guy threw at me advertising student lounge or whatever... Free.

But, unfortunately, whilst retrieving my free sausage and co. something magical occurred. The fairy from table-land, in modern times referred to as Melbourne, visited said bar of cargo and determined that it was time that she retake possession of my table. What a bitch. I mean that had like coasters and stuff that I could throw on it.

Oh yeah, it was at Cargo/Bar. Which isn't Cargo/Lounge... at least that's what those big guys in black told me.

Stephen Clement

Architecture I

[Ed: Physoc does not endorse or condone drinking at Subski events, just ours]

BEACHBALL, A RANT

The perfect excuse to get absolutely drunk and hit on first years.

I really should write something more about the atmosphere of the first semester summer party (held in autumn). Really should write something about how awesome the dance floor on the bottom level was, how sweet Manning bar was (especially the $3.50 schooners of Extra Dry), how crap and mediocre the middle "I'm just going to sit over here with the hot first year that I just met and am hooking up with for the rest of the night, and hopefully will head back to her place later" level was.

But I digress.

I'll just concentrate on the incredibly attractive first years, and some pictures that were taken throughout the night (but not of said first years).

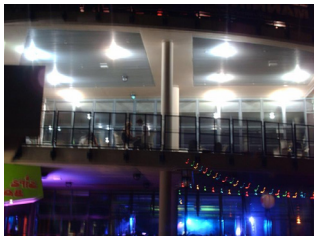
Thomas Clement

Engineering/Science IV

P.s. Purple Sneakers was awesome.

Random Drunks

Random Drunks - Outside



The absolutely crap second level

Just Plain Randoms

RELATIVISTIC DRINKING MECHANICS

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D. Wave Function

A surfer's do is known as a wave function. They can get out of hand, so it is useful to have a commutation relation (a sober sibling with a car), as wave functions are mostly situated in the Northern Beaches away from public transport.

III. RELATIVISTIC EFFECTS

When intoxicated, several relativistic effects also need to be corrected for. The most obvious relativistic effect is the Twin Paradox. The best method of correcting for this involves adaptive optics. Accept that you are seeing double, put your left hands in your pockets (without looking), and move your right-right hand towards the pint on the right, while ignoring the left-right hand that is moving towards the pint on the left.

If a group of physicists begin talking about Special Relativity with a non-physicist present, suggest for him to 'light cones' and begin smoking them. Before long he will have come up with the successor of String Theory.

The final relativistic effect that must be corrected for, is that when intoxicated, time passes faster than when you are sober. This is an effect known as Time Dilution, and often leads to misjudging a nightclub's closing time. Time Dilution can spoil a blossoming relationship based on the uncertainty principle, if you forget to leave before the club's ugly lights come on. The ugly lights remove all uncertainty, separating your and your partner's mixed states.

IV. CHAOS

Finally, it is important to note that after large quantities of alcohol, your system's behaviour can become chaotic. Under extreme cases of super-saturation, it is said that a butterfly flapping its wings in Brazil could

cause a Technicolour whirlwind into a George St gutter. And while such chaotic behaviour may be a Lorentz Attractor, it is far from a Chick Magnet.

V. CONCLUSION

Physoc supports responsible drinking. Just like all the alcohol companies do.

Ronan Skared

Science IV

And as always, we are just one publication of many, which without USU probably wouldn't be here. So thanks USU.

OMG USU FTW!

Your Loving Editor,

-TC-

RUSSELL'S TEAPOT

This article on the probably non-existent teapot in between Earth and Mars could valuably be replaced by someone's cool ideas, thoughts, pictures, pornography, advertisements.

See, this is YOUR opportunity to see something YOU do in print! Just send us an e-mail:

usydphysoc@gmail.com

(P.S. No illegal pornography)

[Actually, no pornography. Ed.]