

Elevenes, Fika and SNOMED CT

I am a general practitioner doing an MSc in data science for health at the University of Durham. My interest is in pre-hospital documentation using speech. The core challenges are the accurate transcription of human language and coding this in a computable form e.g. ICD codes.

I was excited to win a Julian Costello travel bursary to attend the 2023 Medical Informatics Europe (MIE) conference since it allowed me to explore these challenges. It was a deeply worthwhile time in making connections with clinicians, academics and industry, problem solving through discussions and maturing my thinking about medical coding systems.

What do they know of England who know only of England?

MIE 23 was in Goteborg, Sweden. This Scandinavian perspective on medical informatics provided a welcome challenge to our UK assumptions. The opening address from a health minister demonstrated the weight placed on healthcare technology to improve the health of the population- as well as a valuable industry to invest in. Remote and sparse populations encouraged research into telemedicine and innovations in healthcare delivery that could be applied more broadly in resource constrained healthcare systems.

Fika and elevenes

Fika is a common Swedish term for a sort of afternoon tea with friends- I can highly recommend it! There is no equivalent English word. The actual food eaten is not clearly defined (unlike afternoon tea), nor the time of day (unlike elevenes) yet it is a very real and important concept, encoding something of Swedish culture and social practices.

Medical ontologies as languages

I focussed on the Natural Language Processing (NLP) stream, finding three presentations on voice transcription and NLP in clinical care.

Marieke Van Buchem presented a project that classified diagnoses in the emergency department using natural language processing. Daniel Reichenpfader's thesis, "User-Centered Design of a Speech-Based Application to Support Caregivers" sought to increase nurse efficiency through a voice interface for documenting management. It reached the stage of a small hospital trial however noise on the ward proved to be a challenge. Johanna Gerlach's project took transcription in an interesting direction with "Translating medical dialogues into pictographs". This innovative project transcribed text into a 'sentence' of pictures to aid communication with patients where spoken English was a problem. It built on previous work for medical transcription with the additional complexity of translation to a pictographic language.

SNOMED CT is usually defined as an ontology- and it is. It intentionally separates any meaning from each code by using an 8 digit number. Whilst in clinical practice I may remember a

frequently used Read code this is not the experience with SNOMED codes. However, this lack of human readability abstracts meaning from the actual code, it still encodes language, syntax and philosophy- it is still a human language.

Pre-coordinated expressions (e.g. Absent breath sounds (finding) 65503000) are concise and precise and easier to re-use. Post coordinated expressions (e.g. 128254003 |Respiratory auscultation finding (finding)| & 366135003 |Finding of breath sounds (finding)...) are more complex to compute and generate yet offers an infinitely more expressive form.

Language changes and this can be observed in the evolution of systems and the introduction of new taxonomies and ontologies. Despite a vocabulary of more than 350,000 pre-coordinated concepts SNOMED CT (compared to ICD10 14,000 & ICD11 85,000) still does not capture the breadth of concepts that one might wish to describe. Hence, like any language, it continues to grow as we use concepts in different ways or expand the vocabulary. It says something about the complexity of humanity that SNOMED CT with an order of magnitude more terms than ICD10 still struggles to capture the breadth of healthcare.

It is more than SNOMED CT being immature or inadequate. SNOMED CT is a language with the vocabulary, syntax and underlying philosophy that goes with any human language. Whilst this may map well to certain domains or contexts we must be aware that our use of SNOMED CT colours the way we understand therefore our approach to health, healthcare and humanity.

Human connections

Humans are relational and we learn in relationships with each other. The value of the conference was not merely in the content but in the connection with other like-minded people. We learn through these deeply human interactions that encourage or challenge our thinking. We are challenged by an environment that helps us to see our problems through different eyes.

This was my first contact with the BCS primary healthcare specialist group (PHCSG), and it was a delight to get to know them over the week. Several members were presenting their work and I enjoyed the informal discussions through the week along with the formal sessions. I came away having made new friends, the possibility of future collaboration and an invitation to give a guest lecture!

Farewell to Gothenburg... and hello to Athens

Gothenburg is truly beautiful in its architecture and setting. Two of my favourite artists, Anders Zorn and Carl Larsson are Swedish and I was delighted to see their works in the Konstmuseum. The public transport is excellent with a combined bus, tram and ferry ticket for around £10 a day. We used this to escape to Styrösö island on the last evening for a walk and a swim- a fittingly Scandinavian end to the adventure.

I would not have been able to attend without the generous grant, which even covered the gala dinner (along with abba-esque live music!). I am deeply grateful for the opportunity that this gave me, the way it challenged and changed my thinking. I hope that this will translate into increased impact through my research and membership of the PHCSG.

If you are thinking about applying for a bursary for MIE '24 then do it! I hope you are successful and that I get to meet you in Athens.

Dr Michael Claydon

Bipedal/Flippered Mermaid Fountain
Botanic Gardens Gothenburg



Postcard for my children of a mermaid fountain in the botanic gardens