

# Data Protection in the 'Med-averse'

The adoption of virtual healthcare in the metaverse  
and its potential legal implications

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In the News Presentation

LAWG536 Internet Law

Sonia Hajo

8 November 2022

# What is the metaverse?

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- A virtual world in which people live, work, shop and interact with each other via a **digital avatar of themselves**
- Considered the **next evolution** of the internet
- In 2021, Facebook changed its corporate name to **Meta**
  - Plans to spend \$10 billion on technologies to build out its vision in the metaverse
  - They are not the metaverse nor do they own it
  - 500+ companies working on the Metaverse as of 2022
- This concept is not new
  - Coined in 1992 novel Snow Crash → dystopian view
  - Several companies later developed online communities based on this concept (e.g., Second Life, in 2003)





## Life in the metaverse

- Aims to **virtually build** out the community and allows **users to live in it**
- Avatars
  - Used to represent yourself, to communicate with each other, etc.
  - Created using a blend of physical and behavioural biometrics, emotional recognition, sentiment analysis and **personal data...**
- Digital economy
  - NFTs and **blockchain** lay the groundwork for digital ownership
  - Can be used to buy **services**, clothes or weapons in the case of videogames
  - You can also own property



# Internet

- Network of computers, servers and other electronic devices
- Once you are online → communicate with others, via and interact with websites, buy & sell goods, etc.
- Somewhere you **browse**



# Metaverse

- Builds on the internet
- Users interact in a virtual world that mimics the physical world
  - Uses virtual reality, augmented reality, AI, social media, digital currency
- Somewhere you **live**

# Reasons for joining the metaverse

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- To experience things, they can't in physical reality
  - Concerts, sport events, climbing Mt. Everest, skydiving over the Grand Canyon
- Unite or communicate with others
- Escape one's physical surroundings
- Educational opportunities
- Want to be someone else than your real self
- If their workplaces start using it
- Creating and promoting a virtual & digital economy
- New opportunities for branding (e.g., Nike)



# Survey - “What would you do in the metaverse but never in real life?”

- Try extreme sports (skydiving, bungee jumping, paragliding)
- Alter your consciousness with the help of VR (instead of drugs and alcohol)
- Pretend to be someone else, create an alter ego of the opposite sex, different age or nationality
- Spend a lot of money on collectible clothes/accessories
- Try big game hunting
- Play adult games that engage in extreme violence and or/sex
- Watch virtual gladiators fight to death
- Conduct unethical experiments on virtual humans
- Watch virtual executions
- Engage in hate speech





# Let's talk about the Medical Metaverse

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# The metaverse could let Silicon Valley track your facial expressions, blood pressure, and your breathing rates — showing exactly why our internet laws need updating

Katie Canales Dec 8, 2021, 11:19 AM



Facebook CEO Mark Zuckerberg giving the metaverse keynote Facebook

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People protecting people.

# Drug Development in the Metaverse

JUNE 17, 2022 | SAILESH K. PATEL, MATTHEW T. WILKERSON

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“Metaverse” is no longer a mere buzzword. Many industries are discovering and developing applications for the Metaverse, and the pharma and biotech industry is no different.

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## Healthcare consortium to offer DNA-based health prediction service through metaverse platform

Park Sae-jin Reporter(swatchsjp@ajunews.com) | Posted : January 4, 2022, 08:52 | Updated : January 4, 2022, 13:54



ENTERPRISE TECH

## The Amazing Possibilities Of Healthcare In The Metaverse

Bernard Marr Contributor

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Feb 23, 2022, 02:38am EST

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The metaverse is a hot topic at the moment, and much has been written and spoken about its potential to revolutionize gaming, entertainment, socializing, work and commerce. Not so much has been said, however, about how it could affect healthcare – but this is another field where its impact could be transformational.



METaverse | June 24, 2022

# The metaverse: the next frontier in clinical trials?

Digital simulation could help break down healthcare barriers, but experts caution the clinical trials sector to go slow.

By Urtė Fultinavičiūtė







# Healthcare

- **Educating** clinicians
  - Students can watch simulations, practice surgeries
  - Collaborate across continents with other HCPs
- **Telemedicine** (routine consultations which don't require a physical examination)
  - E.g., Physiotherapy using computer vision
  - Surge after COVID-19
  - Propose seeing doctors or specialists from different countries as you are no longer limited to your physical location
- Mental health or nutrition **consultations**
  - Aversion therapy for PTSD– patient interactions with situations that cause them anxiety in a safe environment
- **Virtual hospitals**
  - Can address severe shortage of GPs

# Drug Development & Digital Twins

- Virtual model of a patient generated using **real-world data** (avatar+?)
- Used as “**test dummies**” for individuals that can be used to **predict** surgery outcomes, recovery and reactions
  - E.g., Ageing twins by 10 years
  - Reduces cost and time to run clinical trial
  - Real-time information on disease course development using AI
- Blockchain technology may be used as **encrypted databases** that allow **highly valuable health data** to be **stored** and **transferred securely**
  - Only the owner can tamper with it
  - Authentication of virtual identities



ZANNES  
LAW FIRM

# Legal Implications

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Somnium Web  
651 (XL)

# How will healthcare in the metaverse be regulated?

- Currently the entire metaverse is **unregulated**
- No national **boundaries**
  - Determining the applicable laws may not be straightforward
  - Friction with processing **insurance**
    - In Canada, health care is a funded and administered by the provinces (each with their own insurance plan, etc.), but differs by country
- Will it be influenced by the metaverse platform's **terms of service**? Smart contracts entered into within the metaverse and the location of the person transacting within the metaverse?
- **Governments** may extend their reach
  - Barbados plans to open a diplomatic embassy
  - Seoul to create a virtual ecosystem of its municipal administration



# Areas of law that could be used to regulate the Metaverse

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Copyright Law

Regulation of  
NFTs and Tax  
Law

Internet Law

Criminal Law

Intellectual  
Property

Contract Law

Civil Law

Tort Law

Defamation  
Law

Privacy Law

The list goes  
on...

# Data Collection & Privacy

- **Information privacy** is an area of concern
- Companies will collect users' personal information through interactions and biometric data from wearable VR and AR devices
  - **Amount of data collected** in the metaverse >> any company on the Web
- **Nature of data** generated
  - Metaverse can record users' movements, bodily reactions, even brainwave patterns to ensure the most lifelike user experience
  - Analyzing eye and facial movements → identify users & draw conclusions about their behaviour and consumption habits
  - Dilation of pupils → used to infer personality traits and cultural affiliations
  - Eye-tracking technologies can predict the decisions of the person after three seconds
- **Inadequate data security measures** of healthcare facilities in the metaverse may **increase the risk of data breaches**
- Recruiting across multiple countries is already a challenge, as every country has different data protection laws



# Crime

- Once again → completely unregulated
- Potential concerns
  - **Tracking and misuse of personal data**
    - Research by Rutgers University in NB showed **they could hack VR and AR headsets to steal sensitive information** communicated via voice command
  - **Identity theft**
  - Social engineering
    - Taking advantage of human vulnerability to trick victims into **divulging private information through manipulative tactics** (e.g., phishing attacks using deep fake technology to impersonate trusted institutions or avatars such as hospitals or medical professionals)



# How can we remedy some of these issues? Fair Information Principles

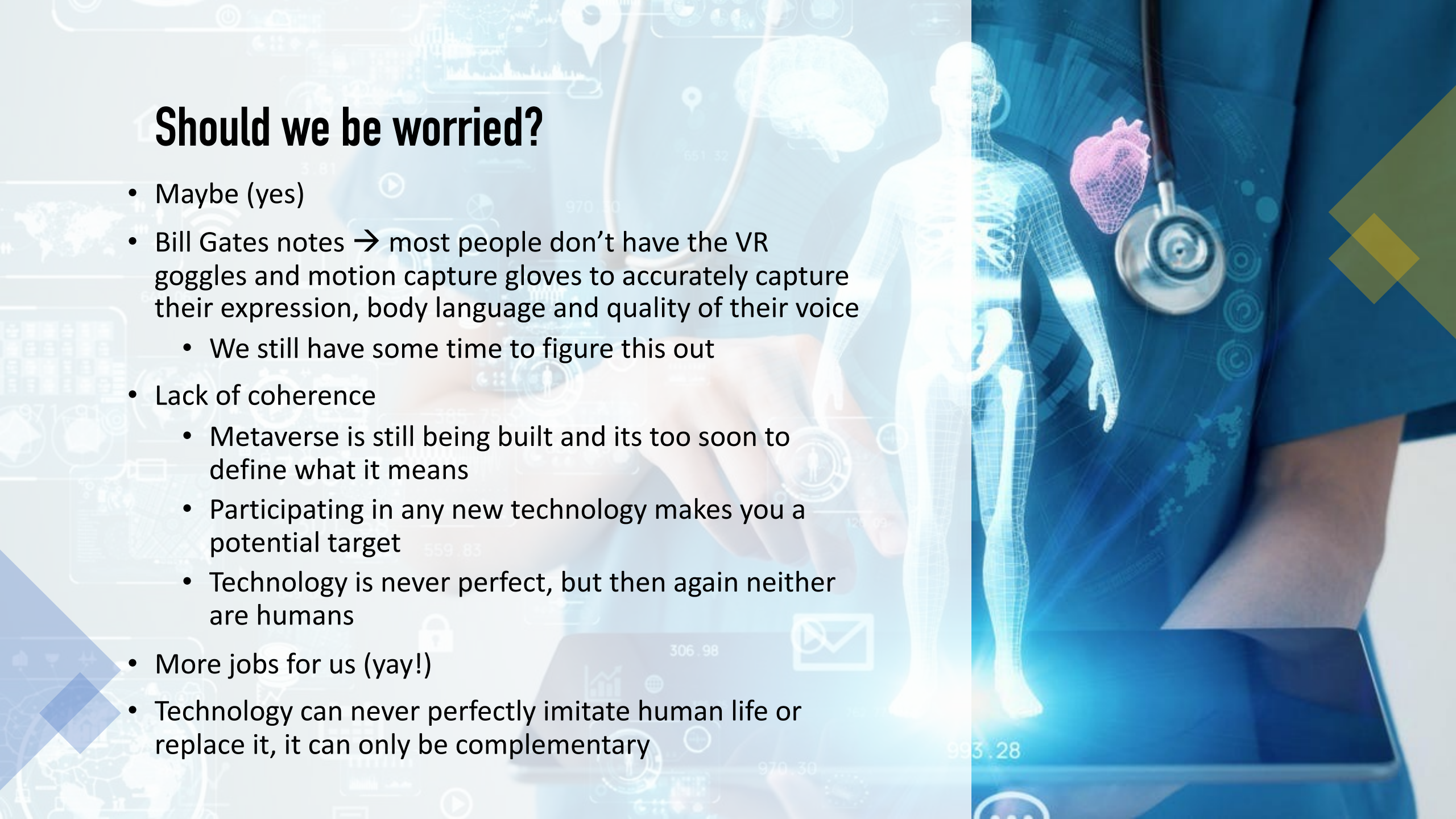
- Data collection details should be provided to users and patients in a **clear and transparent way**, in particular, regarding the **consequences of automated decision-making** based on the data (consent)
- **Data protection rights** of users should be ensured
  - Access to data & requests for a copy of data (PIPEDA)
  - Deletion of data
    - Blockchains are immutable → right to rectification (PIPEDA) & the right to be forgotten (**GDPR in EU**, doesn't apply in Canada)
  - Processing and data portability → poses technical challenges outside of the metaverse (e.g., how can we take our health files from the metaverse to the real world)
  - Restrict monitoring (limit collection, use, disclosure..)
- Potential **solutions** in the metaverse (safeguards)
  - Allow user to inhabit a private copy of space in the virtual world
  - Allow user to become “invisible” to others
  - Put mechanisms in place to ensure we are interacting with a doctor or hospital, not a fake avatar





# Should we be worried?

- Maybe (yes)
- Bill Gates notes → most people don't have the VR goggles and motion capture gloves to accurately capture their expression, body language and quality of their voice
  - We still have some time to figure this out
- Lack of coherence
  - Metaverse is still being built and its too soon to define what it means
  - Participating in any new technology makes you a potential target
  - Technology is never perfect, but then again neither are humans
- More jobs for us (yay!)
- Technology can never perfectly imitate human life or replace it, it can only be complementary



# Some questions I continue to ponder...

- Is it worth **sacrificing your rights to privacy** for the sake of this immersive experience?
  - *Turner v TELUS* (loss of privacy proportional to benefits?)
- Will we get to a point where the resources on earth are so scarce that we **need** to live our lives virtually on the internet (shortage of doctors)?
- Should we **trust** these big corporations with data that could nearly **replicate who we are**?
- If digital twins are a copy of us, but can autonomously make their decisions due to AI technology, can they be granted **legal personality** in the metaverse, despite lacking any consciousness? What if they commit a crime when we are not around? How might laws change to address this problem?

