Vinyl or digital medicine?

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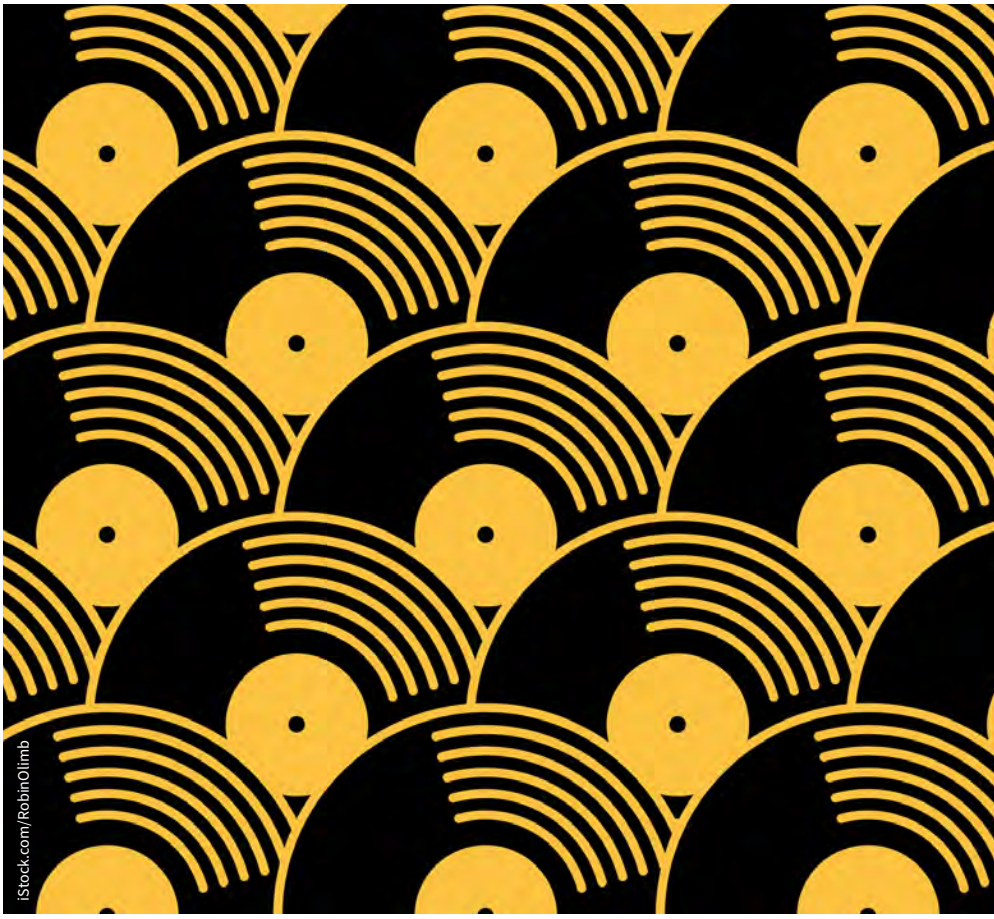
I really did not want to be that guy. Really. You know that annoying guy who, when you tell him you love Arcade Fire says, "But have you heard it on vinyl?" And I was not that guy until I was gifted a record player and Radiohead studio albums on vinyl one Christmas.

I am now that annoying guy. After listening to a lot of my favourite albums on vinyl — particularly those from yesteryear — it was clear that there is something missing in the digital music we stream. Neil Young has been ranting about this for a while: the digital music we listen to is compressed and remastered in a way that reduces its quality. This is largely precipitated by a need to keep the file size small. An MP3 is missing 80% of the music compared with a CD.[1]

So it is clear that a CD is better than an MP3. But vinyl is qualitatively different too. It's an analogue file and has a richness and depth to it that you arguably do not get from digital music. Of course, it also has the many imperfections that go along with analogue files (think crackle and records skipping).

All of this compression is designed in a way that is not supposed to be audible — (i.e., they remove sounds they believe we cannot hear). But studies have shown that people lose their emotional connection to music when it is compressed. And vinyl offers a tactile and visual experience (i.e., beautiful album covers) that streamed music lacks. And this enhances the experience of listening to music.

So what does any of this have to do with medicine? Why do we have streamed music when we know that CD and vinyl recordings are better? It is for convenience, access and options. Have you tried to go for a run with a record player? And you can select any song you want whenever you want with streaming services. So what we give up in quality we make up for in access and convenience.



And most people are willing to make this trade-off.

To a certain extent, this is likely what we will get with the digital health revolution. The "analogue" experience of actually seeing a health care provider will be seen as the better experience — more fulfilling and complete. However, many people may not have access to a health care provider or are too busy to actually go and see one. The digital health revolution is creating myriad new options for accessing health care, making it more convenient and accessible, and providing more options for care. Just like streaming gives you continuous access to music, health apps can permit more regular monitoring of health status such as heart rate, blood pressure, weight and symptoms. Virtual care can provide digital health care connections in remote areas or to patients who cannot leave their homes. Digital personal assistants powered by artificial intelligence (AI) can even provide preliminary diagnoses and advice based on patient-reported symptoms. Given the ubiquity of smartphone devices, digital provides an excellent means of connecting with hard-to-reach populations and empowering them to manage their own care. The digital health experience is not going to be the same as the analogue health experience, but it is better than no experience at all and in some ways can be

an improvement. And on the flip side, analogue health experiences can be bad, just like a badly recorded vinyl record can be a lousy listening experience.

What else can we learn from comparing digital music to digital health? Music made in the digital era works much better on streaming services than music made in the analogue era. It is designed to be experienced in this medium. Digital health will likely be the same way. Trying to replicate the analogue experience of seeing a health care provider will probably always seem unsatisfactory. But digital health can create new experiences using AI, sensors and Internet of Things connectivity that analogue medicine cannot. And it is quite likely that an entirely new form of health care delivery will emerge that is designed to be administered digitally.

But just as vinyl music is making a comeback, I expect sometime in the future, as digital medicine spreads, seeing a health care provider one-on-one will be increasingly treasured — just like listening to an original *Abbey Road* record. Although digital will offer more access and options, there will be something less than satisfying about interacting virtually or with a digital assistant rather than with a health care provider in person. Those in-person experiences will have a lot of analogue information that would not be conveyed digitally that will give the health care provider a more complete picture of the patient just as a vinyl record conveys a more complete musical experience than digital streaming.

When designing the health care systems of the future we need to be cognizant of the ongoing desire and importance of that analogue experience and ensure that it is not lost in the digital transformation. In many ways digital and analogue can be complementary, with digital solutions offloading rote tasks to permit health care providers to spend more time in high-quality direct communication with their patients. What we do not want to see is an overwhelming focus on technology that affects, interferes with and degrades that analogue experience.

Even though our health care system may soon be dominated by digital interactions, we would be wise to expect a future of medicine that will always have an important analogue component.

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Reference

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