

WEEK 4 MEDICINE & THE ARTS – REPRODUCTION AND INNOVATION
IN DIALOGUE ABOUT CREATIVITY

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So Silke has illuminated for us the biological processes of human reproduction, how they work and how they can fail. And she's also explained some of the remarkable innovations in assisted reproductive techniques that have been developed to deal with these failures.

I wondered if there's an analogy with innovation in the ideas of strength in numbers of the spermatozoa, and the power of one of the oocyte. It seems there is in biology an enormous wastage, if you think about it, in the process of reproduction and creation.

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Alireza has asserted that creative thinking can be deliberately planned and anticipated. And he talked of spikes of new ideas penetrating into consciousness, rather like the one successful sperm penetrating the zona pellucida of the oocyte.

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But are these simply interesting analogies, or could they serve us more significantly in generating solutions to complex problems? Francois emphasised the importance of different disciplines feeding into new ideas, that theme of interdisciplinarity that we noted in the first week. And he emphasised also the importance of the context.

Where do your best ideas come from? In a resource-constrained setting, is necessity, as they say, the mother of invention? I put some further questions to our panellists.

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What are the most striking developments in the field of reproductive health?

There are many processes happening around the world. I think probably the most striking has been the recent delivery of a healthy baby following a successful uterine transplant. But other processes involve the possibility of fertility preservation, which plays a very important role for cancer patients, who may lose their fertility potential as part of the medical therapy.

But also important, but perhaps more controversial, is the fertility preservation for social reasons. And we know that one application of assisted reproductive technology around the world is to assist women in having children at a later stage, because they've delayed childbearing because of career, and then late relationship formation and late commitment to parenthood. And so that is, perhaps, more controversial, because a young women may be very worried about her fertility potential. And to some extent it may be very reasonable for her to think about freezing her oocytes. But to what extent is this also unnecessary and unnecessary fear? And, also, obviously, the concern about the commercialisation of this concern that woman may have.

So on the one hand, I think we have amazing developments as far as assisted reproductive techniques are concerned. But particularly in our setting, and in low-resource settings, I think we also need to stay with the basics. And what we need to make sure is that our communities, our men and women that come to see us are well-informed about the basic principles of reproduction, and also how to predict their fertility. Safe sex is important. And to know about what the best age for reproduction is, and then to make choices around that.

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What is the social impact of infertility on peoples' lives?

Because infertility is not only a medical condition, it is also very much a social reality. And we know from research and documentations around the world that infertility can have a profound effect, and certainly causes a lot of suffering. A classification has been suggested into six ever-increasing degrees of severity of the social and economic consequences of infertility representing this continuum of suffering. Starting at level 1 with distress, depression, guilt feelings. At level 2, marital instability, more disharmony. And then ever-increasing severities to level 4 and 5, where there's social isolation, stigmatisation, deprivation, and, ultimately, what has been referred to lost dignity and death.

And no question, suffering happens around the world. But we also do know that particularly in developing countries, where children are highly valued, these social consequences are often more common, and they're more severe. So stigmatisation is not an infrequent event. And women feel isolated. There may be marital instability. They may be divorced or abandoned with little prospect of remarriage.

We also know that, for both men and women, not being able to have children may affect their gender identity. It may affect their social status-- how they're treated within the family, within a community.

And again, generally speaking, the lower the socioeconomic status of a woman, the more social values is linked to successful reproduction. So particularly for women of little means in a poor resource setting, infertility is often a very devastating experience.

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How might we create new ways of thinking to tackle complex, intractable problems?

We need to break down the silos, work between disciplines, bring disciplines together. But that alone is not enough. We need to understand how we can create something that is more than the sum of the parts. New ways of thinking. From industry, we've learned that this interdisciplinarity can be a structured process. Much investment of time and structure are facilitating how different disciplines come together to create new products is a well-defined process.

In social innovation, the process of design thinking is often used in understanding needs and bringing together different actors to develop social solutions, more holistic solutions towards intractable problems. One small example of this is a hackathon. And we've used a hackathon in the public health care setting, where we brought together patients and staff of hospitals to express their needs and sit with software developers, with graphic designers, with system engineers, to think about some of the key challenges that lay within their health care system, and develop many solutions that addressed the very key things that everyone recognised, but no one in their single discipline could address alone.

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In what ways is the biological conception in humans analogous to the creation of new ideas?

I believe that there is a strong analogy between these two phenomena. In conception in human leads to the creation of a new entity. Very complex entity. The creation of new idea is very similar, in this sense that the collaboration and interaction of many ideas in our subconsciousness leads to the creation of a spike.

The point that I want to make, bring to your awareness, is it is our readiness and our awareness of the existence of this spike which is a crucial phenomenon. Spikes happen. But if I am not aware, sufficiently aware, I do not get hold of this spike. Thank you very much.



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