ICEEL

ICEEL 2024: Opening Address

It is my great pleasure, on behalf of the National Center of Competence in Research Molecular Systems Engineering (NCCR MSE) in Switzerland, to welcome you to our ethics conference. I am very much looking forward to discussing with you in the coming days the ethical dimensions of a field of research that many have described as the “emerging field of engineering life”. This is, indeed, one of the most profound questions of our time: How should we responsibly navigate the frontier of life engineering?

I would like to begin by focusing on an essential concept that is central to our discussions here and has been a matter of ethical debate in our research project over the past decade: the concept of *knowledge*. Knowledge, in science and beyond, is often assumed to be inherently valuable and inherently “good”. But is it? Is knowledge inherently good and even harmless? And if it is not, who should decide and take over responsibility?

Our ancestors asked similar questions, capturing their concerns in myths and stories that continue to resonate even today. Perhaps the most iconic is the story of the *Tree of Knowledge* from Genesis. In this story, the “forbidden fruit” is a symbol of knowledge – knowledge that Adam and Eve were warned not to seek. The consequences of ignoring this warning were profound, impacting not only them, but all of humankind. The implications of this story have often been interpreted as a cautionary tale about boundaries – boundaries that, once crossed, can bring unforeseen consequences.

Plato's “Myth of Protagoras“ also talks about boundaries – and the consequences of forbidden knowledge finding its way. When Prometheus had stolen fire from the gods, along with the knowledge that came with it, and gave it to humanity, he empowered us with the means for growth, but also risked our destruction. The gods realized that the availability of such knowledge and the ability to use and abuse fire would lead to disorder and chaos. And so, Zeus commanded that we receive ordering principles, namely *aidos (Αἰδώς)* – a sense of shame or reverence – and *dike (Δίκη)* – a sense of justice. His messenger Hermes, who was supposed to bring these virtues to mankind, needed clarification, so he asked Zeus: *“How should I impart these ordering principles? To a few only (as the arts are distributed) or to all?”* In other words: “Is it not enough to give these principles to a few experts who then can take care of it and instruct the people?” And Zeus answered in what has become known as Plato’s acclaimed anthropological declaration that all men are equally talented and qualified to decide on issues of justice in the community: *“I should like them all to have a share; for cities cannot exist, if a few only share in the virtues, as in the arts.”*

So, these virtues, these ordering principles, must belong to **all** of humanity, not just a select few or a privileged group of experts. They are universal, to be shared among all people. Society as a whole must take part in the responsibility for knowledge if civilization is to flourish – and to survive.

I think this message is very relevant to our discussions over the next two days. Just as Plato’s myth suggests that virtues cannot be confined to the few, our discourse on the ethical challenges of engineering life must reach beyond the walls of our philosophical and theological lecture halls, they must reach beyond the walls of our laboratories and the specialized knowledge of scientific expertise. In a way, this conference serves as a living blueprint for this ideal – where representatives of various sciences and academic disciplines, organisations, schools and

religions come together and join hands with the interested public, jointly exploring the ethical boundaries, implications, and responsibilities of engineering life.

Building bridges of communication and enabling all interested parties to participate in the discourse on an equal footing – with each voice counting as one – is, in my view, a central task and responsibility of everyone involved in the field of engineering life – particularly the scientific community.

To navigate the ethical waters, we all must be open, transparent, and humble in our dialogue with the world. We must make a conscious effort to demystify our work, to explain not only our goals, but the ethical dilemmas we face, and to listen… As we proceed with our program, let us bear in mind that each new insight, each debate and presentation, serves not only the pursuit of knowledge, but the cultivation of understanding, empathy, and respect.

In 1930, the renowned German mathematician David Hilbert famously stated: “Wir müssen wissen, wir werden wissen” – “We must know, we will know”. This idea of unlimited knowledge still echoes in today’s scientific world. But even if this were true – and I must admit, I have my doubts – it would leave a number of crucial questions unanswered: What are we to do with such vast knowledge? How should we apply it, and who is entitled to make these decisions? How will this shape not only our future, but the ethical boundaries we live by?

These questions remind us that knowledge alone is not enough; what really matters is how we choose to use it and what our commonly shared ordering principles are.

In closing, I invite all of you, as participants in this conference, here in Rome and online, to incorporate these stories and questions into our framework for discussions.

Thank you for being here. On behalf of the NCCR Molecular Systems Engineering in Switzerland and of course our partners the Pontifical Academy for Life and Bambino Gesù Hospital: Welcome to the 2nd International Conference Ethics of Engineering Life.

Rome, 18 November 2024

Ralf Stutzki, Head of Ethics

NCCR Molecular Systems Engineering, University of Basel