

Visions, needs and requirements for Future Research Environments: An Exploration with Historian of Ideas and Science Fiction Author Gwyneth Jones

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We live in remarkable times: the world is changing at an increasing pace, our societies face challenges that extend across national and geographical borders, and we are flooded with (dis)information. The scientific process has already changed extraordinarily in the past half century with research environments evolving from isolated and loosely connected islands to dense networks of researcher and institutional cooperation.

Still the world is changing and we need to ensure that science remains a global effort. Building a global network and infrastructures to support that aim, however, takes time. We need to start such building processes now and – most importantly – we need to develop and explore visions for research, science and society that give us ways into desirable futures. Thus, we launched an exploration series to elaborate visions on how research will be conducted in the future and to explore different perspectives on research.

“Make the present a work of progress towards a desirable future”

TU Wien: What can we learn from Science Fiction in the context of building future research environments?

GJ: Science Fiction claims to be about the future, but we have no knowledge of the future, we only know the past, so really it comes out of history. History, like any other part of discourse, changes people, and these historical changes are personal to the writer. Thus, the mechanism that I use in my utopian novels is my parents' history, which is the history of the Second World War and the terrible depression that preceded it. What my Science Fiction says, therefore, is that there is no straight way up to Utopia. You have to go down into the Valley of Hardship first and then climb up again, preserving what you can on the way down, so that you still have the marvels, which you had on the way down, when you're coming out of the depression and the wars. That seems to me almost an inevitable sequence, once you get into the global situation that we are in now. It's a question

of preservation, even in the most dystopic situations.

TU Wien: Which means depression is unavoidable?

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GJ: I don't know that it is. I'm saying that Science Fiction sees the future as a version of the past. But from looking back into the past and looking for models of where we are now, a temporary depression is not what I'm afraid of. I care about what will happen 100 years from now and, at the moment, 100 years from now is looking grim, indeed. My Science Fiction reflects that: it's about a need to conserve, protect and survive, rather than build giant star ships.

TU Wien: How do we best go about that?

GJ: When you are finding out how to save the future, you're also finding out how to save the present. The more you work on thinking of how you want the future to be, the more you learn about how you want the present to be. That is how to find ideas for mechanisms to make the present a work of progress towards a desirable future.

TU Wien: Given the fact that we now live in a

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highly interconnected and globalized world such projections and predictions might be difficult to achieve.

GJ: I don't think globalization in itself is a problem, because human civilizations of the past have always worked and lived in a world that they believed to be the whole world, and behaved accordingly. Obviously, globalization is a dangerous situation, but it's not a new situation. We can deal with situations being global. The difference is that unlike people who lived in the distant past, we've run out of space: we don't have anywhere further to go. That's the big problem.

TU Wien: Let's consider opportunities that do come along with globalization. For example, potentially, we have more knowledge as well as mechanisms at our hands to make it more easily accessible than ever before. We do have all the building blocks for a completely literate society. But: how do you bring all people along in order to create a more inclusive society?

GJ: Too many young people are not educated in a way that makes them feel comfortable with

science and with the manipulation of data. I think one of the really interesting and good things you could do as the European Open Science Cloud is to become a presence in schools, and introduce data literacy into the curriculum. People need to learn how to put things together in the data medium, and how to make connections.

TU Wien: What we find is that knowledge is evolving so fast that it is outdated very quickly while adaptation and seeing the effect of curricula changes is rather slow. It, therefore, is extremely hard to get data literacy into the school curriculum.

GJ: Then you have to find something that is basic and that can be used as a connection to more complex systems. A very good construction comparison for that is traditional “literacy”, which is a constant. I don't think you'll find many teachers who don't like literacy, and if you can convince them that *data* literacy is as important as learning to read, you'll be on your way to a far more accepting regime in education.

TU Wien: Thinking of future research environments, what elements do you want to see as part of the desirable ones?

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GJ: In Science Fiction, there are systems that are super-efficient, where everything works exactly according to plan. They are dystopic. People are like feedstock for the machines and for the AIs. They are objects, being moved around and worked with. Dystopian settings are really extraordinary and fascinating places, but they are too pure to be

human. Utopian settings are dirty. They have messy places in them. They have unexpected corners. They have puzzling developments that nobody really knows how they got there. Thus, whenever you want to say something (a world, a society) is perfect, you end up saying it's dystopic. Absolute control and absolute knowledge come out looking unpleasant, no matter how perfectly designed. It's messiness, with parts that are incredibly complex, full of surprises even for the most expert knowledge – and with parts that, frankly, don't work— these worlds feel hopeful.

TU Wien: So what we want and aim for, actually, is something that keeps changing.

GJ: You want to be able to set the smart programs working, but find a way to be able to live with the unexpected and the unnecessary at the same time.

TU Wien: Would we be willing to share all sorts of data in such utopian settings, or would we want to stay in control of some aspects? Should there be any rules on the kind of information that governments, industries and companies are allowed to collect?

GJ: In the first instance, I can answer this question quite personally. I'm indifferent, or accepting, about sharing my data. The thing that annoys me is that only very few people, and not society, are benefiting hugely, financially, from collecting large volumes of data. The benefits tend to concentrate in fewer and fewer hands. If you can substantially reduce the system's tendency to benefit only a very few ridiculously wealthy men then you will, for me, have got rid of the problem of social privacy. I suppose this is because I was a child brought up in post-war England, in the welfare state: believing that people having the information about me that they needed was not a bad thing.

TU Wien: So what mechanisms would you think were helping in those days that sharing data was not a matter of concern and the lack of which, obviously, now lead to the sharing of data turning into a massive concern for a large part of society?

GJ: Fairness and fiscal honesty – or at least the appearance of it – made it less of a concern. Thus, there has to be an awareness that the people who are benefiting from using my data are not benefiting outrageously. The fact that wealth is accumulated only by very few makes the whole system look untrustworthy.



Gwyneth Jones studied European history of ideas at the University of Sussex in England, and is most renowned for the Bold as Love-Series. Jones won several awards for her work, including the Arthur C. Clarke Award and the World Fantasy Award.