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Exploring Difference: Transdisciplinary research and its impact at higher education institutions:
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Revealing the Possibilities of Collaboration

Prof. Pauline Nestor

Senior Associate Dean and Associate Dean (Research) in the Faculty of Arts, Monash University, Australia



You're Senior Associate Dean in the Faculty of Arts at Monash University and have a specific role in building interdisciplinary research teams. What do you do?

A part of my job is to promote interdisciplinary research across faculties, not just within the arts faculty. It's a real challenge. For example, we have a project with our medical faculty, with a center of „Healthy Ageing“, where our language students work with elderly people whose first language isn't English. What the medicos have come to recognize in this project is the importance of language in the ageing process – particularly with dementia often having taken away patients' second acquired language – and seeing that language is an issue of health, for example. And our students gain language proficiency and confidence.

Sometimes it's just a matter of revealing the possibilities to a range of researchers, and sometimes there are inevitable failures. I mean, it's would be wrong to pretend there's some sort of Esperanto of interdisciplinary language in every project; sometimes there are conflicts.

The people who do it best put a lot of time into understanding and trying to forge a new language between the people who are contributing. And sometimes, inevitably, they have to win the respect of their colleagues in bringing to bear a completely new perspective.

There are different institutional models of interdisciplinary research at Monash. Can you describe them?

One is a stand-alone institute, the Institute for Safety, Compensation, and Recovery Research. The funding comes jointly from the university and industry partners, which covers the insurance compensation schemes for the Transport Accident Commission and for workers' compensation. These institute allows the schemes to draw on a wide range of university expertise – on industrial deafness, for example, or chronic pain and 'return to work'. So, within the partnership we have established the research agenda, and then our job is to go into university and broker and develop the kinds of projects and collaborations that might be of interest to industry. That initiative has substantial funds, and that makes the challenge slightly easier.

Another version of the same thing, an industry partner and the university, which I have been very involved in, is a partnership with the Department of Health and the Department of Human Services in our region, which is a very extensive state bureaucracy. We try to be outward looking – to understand the ways in which their workforce needs might be met by the university, for example, in preparing a future workforce, or in enhancing their current workforce skills. And again, in setting a research agenda, rather than endeavouring to impose research priorities, we are careful to explore what burning research questions they have that we could contribute to?

And the final example is a team that has evolved because of the passion and dedication of the researchers

concerned. Called the Center for Water Sensitive Cities, it is possibly our most successful example of interdisciplinary studies. It's a multi-faculty team with 40 graduate students and staff members, who are exemplary in the way they meet all the time to keep forging that common language. They have more than 50 partners from water utilities and municipalities all around the country; they're doing consultancy work with Israel, and they've got international partners in Holland and Singapore. They have economists, sociologists, historians, lawyers, climate scientists, and engineers all contributing to the challenge of sustainable urban water management. And the common thread in all is that they are outward-looking, and scrupulous in their consultation and communication with their industry partners.

It might be difficult for people in the humanities to contribute to this.

I understand that - I'm a Brontë scholar; no industry partner wants to know or pay for what I have to say about the Brontës. However, one can be inventive. One of the projects I'm very proud of – because we never say never in the humanities – involves an internationally renowned

medieval scholar who has partnered with the Franciscan monks to do a project on the beauty of poverty. It's about the place of poverty in the Franciscan tradition. There will be an exhibition that comes from it and there will be pure humanities research coming from it. So, on the one hand, I think we shouldn't give up the endeavour to find new forms of relevance. But, on the other, as I always say to my colleagues, no one should distort their research in order to fit a paradigm of interdisciplinary research or research partnership. No one ever should do that. It's a balance between being true to scholarship and being open to the possibilities through which we can bring our knowledge and research to bear in ways that various aspects of the community want, need, and can benefit from.

Given ideal conditions for interdisciplinary research, what would be your own personal dream research project?

I must say, mine would be a project on memory – how the self is constructed through memory. I could imagine it having medical implications, philosophical implications, and it certainly has fascinating literary and historical implications. So I guess that would be my ideal project.



„It's About Intellectual Maturity and Openness“

Prof. Simon Goldhill

Director of the Centre for Research in the Arts, Social Sciences and Humanities (CRASSH),
University of Cambridge, UK



You are the director of the Cambridge Centre for Research in the Arts, Social Sciences, and Humanities. How do you promote interdisciplinary research?

One of my jobs is to encourage people to apply for research grants. So when I see someone who is smart and young, I try to put him or her together with another young and smart person and suggest some areas where they might have some overlap. I might put together a small team of people for us to fund for a year's seminar; after that, we'll see if that goes on to become something bigger.

Then we have the opportunity of doing some interdisciplinary teaching, which is very interesting at the graduate level. So we put together two professors from different departments to look at a particular problem. And we take 20 or 30 graduates and they would do a year's work with these two professors as part of their training. We also run 15 research groups – each one with graduate and faculty members – but again: You have to have an interdisciplinary question. For me, the starting point is always, “Is the question one that needs to be answered by interdisciplinary research?” You need to be very flexible. You can't have one model for all sorts of interdisciplinary research.

Is it difficult to find the right moment to bring together young people? Knowing their field of research is a prerequisite.

You have to be an expert; that is a sine qua non. Without expertise, you have nothing to bring to the table. Of course, you need more time; you need to work hard and you need to be open. I think people think that interdisciplinary work means learning fully how to be a) a mathematician, b) a chemist, and c) a physicist. This isn't necessarily true. In the best of all possible worlds, that might be the case, but it's really about seeing a range of questions, and then seeing what you might need to answer those questions. What takes time is learning to speak each other's languages and learning from within another person's field. But it doesn't mean that you're a 100percent fully trained expert in that field.

If we're talking about collaboration between the natural sciences and humanities, however, it's very difficult to develop a common language.

Between the natural sciences and humanities, you deal with a different sort of interdisciplinarity. There are many questions which are simply irrelevant; I mean, we have to continue with ordinary work, too, and there are many places



where it would be stupid to talk about such things. But there are areas – particularly areas related to biological sciences or those where we come in contact with ethics or political policy – where it is absolutely essential that we bring people together. Now, in those cases you need people who are mature enough to learn how to be open. Sometimes that comes with age, but actually there are also some old people who are very bad at it (laughing). It's about your intellectual maturity and your openness, and these things can come quite early or quite late.

Can you encourage this way of thinking, this openness?

I think you can by creating the right sort of intellectual environment, where you're prepared to look at big questions and see that even questions with a strong disciplinary focus can open out towards other areas. A lot of the time, it's about asking second-order questions – “Why does this question matter?” – which will sometimes take you somewhere else. Not everybody needs to do interdisciplinary work, and not everybody needs to do it all the time. But there are some questions which simply can't be answered without interdisciplinary work; that's when you have to train and learn how to do it.

You worked in an interdisciplinary project concerning Victorian culture for several years. What exactly did this involve, and who else took part?

It was about multiple views of the past in Victorian Britain. I suppose the easiest way to talk about it would be to say that at the beginning of the 19th century, everyone could sit around the table and have a discussion; it didn't matter who you were, you just talked about the past and were fine. By the end of the 19th century, the beginning of the 20th century, you could no longer do that. You could just be a scholar in the 18th century, but by the end of the 19th century, you were a geologist, a theologian, a classicist. What made them different was not just that you had different techniques or subjects, but a different relationship with the past. In some senses, the disciplines that we have today came into being as a response to that problem of the past. That is the general intellectual frame of what we've been doing. Five professors, six post-docs, and three graduates have been involved, making 14 of us over five years – historians, historians of literature, classicists like myself, Egyptologists, theologians, archaeologists. It's been a very good time.

Overcoming Obstacles

Dr. Frank Kessel

Professor of early-childhood multicultural education and Senior fellow at the Robert Wood Johnson Foundation Center for Health Policy, University of New Mexico, USA



You edited a book about interdisciplinary research in health and social science. How did you come to produce that volume?

I was a Program Director at an institution called the Social Science Research Council (SSRC) in New York. The SSRC looks for leading-edge topics and ideas that seem promising and important, but are not being attended to by the disciplines. At a certain point in the 1990s, we had an influential board member who said: „We are in the Decade of the Brain“ [as it was called in the United States]. And the Human Genome Project is making strides. These are very important developments in the world of science. What connections should the social sciences, and thus the SSRC, have with all this, with the biomedical sciences?“

At it happens, the National Institutes of Health (NIH) had recently established a very small but still significant Office of Behavioral and Social Science Research (OBSSR). I had a conversation with the Director of that Office, Norman Anderson. We agreed that more and more people were saying something about “interdisciplinary research”, but the common reaction was: „Oh my God, that is incredibly difficult and complicated.“ Anderson noted that he knew at least two people who had managed to collaborate even though they were from different fields.“ I said, „I also know some such guys!“ So we came

up with the idea of setting up a working group to discuss and analyse the conditions and circumstances that facilitate successful interdisciplinary collaboration. Ultimately, that resulted in the book, which as you said is a collection of case studies of collaboration involving the social and health sciences.

Is there something like guidelines for interdisciplinary research, or special methods or tools?

We asked the collaborators to write not only about the creative theory and findings that emerged from their work, but also in a personal voice about their experiences in finding ways to come together. They all offered reflections on the obstacles they had faced, like the Chairman of the Department saying, „You’re crazy, why are you doing this?“ Or the Dean saying, „You should be teaching courses in your home department, not wasting your time talking to somebody over there in whatever other department or discipline.“ In our commentary on the case studies we labeled these: institutional obstacles or challenges, interpersonal obstacles, and personal-individual obstacles. But we also asked: Despite these, what made it possible for these people to successfully work together? And it emerged that they could flip these challenges over and say: „Well, my Dean supported me. I got funding. We found ways to get published in respectable journals“, and so on. So almost everything that is an obstacle, can be overcome with the right kind of institutional support, the right kind of interpersonal chemistry, and certain kinds of personal qualities – All those are the circumstances that created the successful case studies and that we think can serve as guidelines for others. In the second edition, published about four years later, we asked people to write Postscripts to their chapters. Happily, in most instances they had continued collaborating productively for the same sorts of reasons. These people represented the leading edge in their emerging fields, and in the best cases, their home institutions then saw that their partnership was productive and provided support of various kinds. Moreover, the large national institutions, like NIH, set up different and more flexible funding mechanisms for cross-boundary research. That’s an important part of what has generated this movement, at least in the United States.

If there are guidelines, do institutions of higher education adopt them? What’s your personal impression?

Good question, but it’s impossible to provide a straightforward answer, because how can you generalize about “the United States”?! There are at least 4,000 institutions of higher education in the country. But I can try to offer a few sensible observations. For one thing, I’m sometimes skeptical about the depth of thinking and action in this area -- You can now find any number of presidents, provosts, and deans who say things like, „We are involved, we are committed, we believe in interdisciplinary research.“ (Transdisciplinary is far-from-common in American discourse, but that’s another topic.) But when you look closely, in many instances nothing much changes at the institutional level. Perhaps most important, anybody who gets engaged in cross-boundary work says two things -- „The tenure-and-promotion process is my biggest problem“; and „Where do or should I publish my research?“ And of course these two factors are related. Central to the tenure-and-promotion process, colleagues and administrators decide what the top ‘mainstream’ journals are; and those tend to be discipline-driven or determined. So I think it’s still fundamentally true that one significant way to gauge whether an institution is really serious about this kind of cross-boundary collaboration in the long term is whether they’re self-critical about criteria in the tenure-and-promotion criteria process. What makes me less skeptical is that there are now a wide range of U.S. universities that are taking this very seriously, for example by exchanging ideas and documents.

Let’s come back to the SSRC. Historians of social science have spoken of a „golden age of interdisciplinarity“

in the 1930s in the United States. Could you briefly elaborate on this?

When the SSRC was founded in the 1920s, the mission statement could have been taken directly from some of our writings today: Social science had to be interdisciplinary because real-world problems were too complex and so on, the sort of the basic mantra that many of us adopt. At least a couple of the major U.S. Foundations (notably Rockefeller) provided funds guided by this philosophy funds that the SSRC used to establish a number of initiatives. The same applied at several universities (either in collaboration with the SSRC or separately). And this went on in various ways through the 1930s, ‘40s and ‘50s. At Harvard, for example, they established a Department of Social Relations, which was meant to bridge sociology and psychology. Everybody said, „This is wonderful.“ Similarly in other places and involving different fields. But the Harvard Department died. In fact, there are at least four or five such significant cases, and each probably has its own kind of historical, institutional dynamic. But in too-shorthand form our overall interpretation is that the disciplines became hegemonic, at least within the social sciences, along the lines of „We’re not interested in ‘soft’ Sociology or Anthropology. Psychology has to establish itself as an independent scientific enterprise. And that’s what we’re about.“ So at least for me the question becomes – Despite all the terrific energy and excitement expressed at today’s Conference, and elsewhere, is that still a significant part of the academic pattern, and will the current “Golden Age” suffer the same fate? I hope not!



Applying Research to Greater Society

Prof. Dr. Gerd Folkers

Director of the Collegium Helveticum, ETH Zürich, Switzerland



You are a professor of pharmaceutical chemistry at ETH Zürich and the director of Collegium Helveticum, Laboratory of Transdisciplinarity. What is done there?

It was founded by Adolf Muschg, a Swiss writer, with the very idealistic ambition of functioning as a kind of graduate school that brings together the humanities and sciences. In fact, this idealistic view didn't work so well because it didn't pay enough attention to the fact that we have fundamentally different cultures in the careers of young people. If you give a one-year stipend to a history graduate, for example, he or she will be happy have that year for the book he or she always wanted to write in a secure environment with a monthly salary. If you do the same with biochemists or chemists like me, then you run the danger of distracting them from their careers; they are obliged to have at least two or three papers in review journals during that time – in addition to doing the necessary lab work.

So you've improved the concept?

I believe I have. Or let's be more neutral: I changed it (laughing). I shifted the target age group. Now, instead of inviting young people to be fellows, we focus on more advanced scientists. If they are convinced that they should be involved in these activities, they can find the time. Then I expanded the length of stays at the Collegium. We now invite people to stay for five years, but only at a 20% workload, which means one day a week. This has a number of advantages: First of all, they stay

in their labs, so they can follow their normal tracks in addition to meeting with us once a week. Second, we can now support academic careers – Ph.D students, post-docs, even habilitations – at the Collegium.

Could you give us a rough description of a typical project?

According to the way the Collegium works, when we invite fellows to work with us for five years, the first thing they do is choose one – and only one – project to work on. This means all the fellows from their different disciplines are not centered around or selected for an existing project, but chosen based on their personality and interests. Their first task is to find a project. It's all part of what I call strictly bottom-up transdisciplinarity. "Emotion" was one of our projects, for instance: What is an emotion? How does it occur, and where – in the brain, in the body, or both? And how does it lead to social action? The people involved were from fields as diverse as physics and theology. We started by defining emotions in terms of modern brain research and ended up studying emotion in society. It came down to a matter of trust, which is especially critical at the moment with regard to banks and society – and thus to Switzerland, as well.

From your perspective, what added value does your approach offer?

I think there are two kinds of interdisciplinarity: direct and indirect. We've already been performing a lot of

interdisciplinary work for years and years, especially in life sciences: It's absolutely necessary to have a central hypothesis; then you assemble labs and people around the hypothesis and discuss your data. Your colleagues are responsible for delivering certain kinds of data. In other words, there's a more or less hierarchical structure starting from a strong center that provides the idea.

Then you have strictly bottom-up interdisciplinarity, where you simply gather a bunch of people and try to develop a central hypothesis and a central topic. This is what we do. We then add transdisciplinarity – literally going beyond individual disciplines. We make a point of involving the arts – music, writing, performing arts – as well as society and the economy. Within this construct, the fellows create joint scientific projects according to their common central topic.

To foster public science, we've founded a small start-up company, named W.I.R.E. at the Collegium that

transfers all of our processes, observations, and ideas into relevant parts of society, such as to the economic world. We founded this organization in a 50-50 partnership with a private bank; we also edit a small periodical that presents interesting views of the world every three months. Then there's the unique way in which we're providing scientific education to the public: spectacular parties where we've borrowed the idea of speed-dating. We've invited people to scientific speed-dating at the Swiss embassies in Berlin and London, for example. During the evening, you have to solve scientific questions or interesting societal problems – water management, nuclear power plants, and so on – and switch between three, four, or five partners every 10 minutes. You then have to come up with a hypothesis. At the end of the evening, we try to sort them out and determine whether we have common ideas or not. That's what the attendees really appreciate.



Supporting interdisciplinarity in intelligible ways

Dr. Carsten Dose

Managing Director of the Freiburg Institute for Advanced Studies (FRIAS), Germany



In today's research environment, interdisciplinary collaboration is in many ways a normal way of business. At the same time, there is hardly any disagreement on the value of the academic disciplines – not only as indispensable instruments of cognition, but also as an organizational approach to training the next generation of academics.

So, when dealing with questions concerning the right proportion and the best way to organize things, why are there heated debates about interdisciplinarity in the first place?

My understanding is that the plea for interdisciplinarity sometimes is meant and/or understood as a critique of the current research system – a critique which has its justification:

- Does our research system meet our modern society's needs, given the great number of very complex challenges we currently face?
- Do our universities really make the best use of their great privilege of being a home to a wide spectrum of disciplines?
- Do students get the best possible preparation for their future task of collaborating with specialists from other disciplines in their prospective fields of work?

The talk of interdisciplinarity owes a lot of its thrust to these doubts about the effectiveness of today's academic enterprise. On the other hand, however, perceiving interdisciplinarity as the solution to all of these questions would be a misapprehension of its purpose. Not all new insights develop at the edges of the disciplines,

as a popular saying goes. Rather, interdisciplinarity is one route among others that serves to strengthen our research system and facilitate the search for answers to the complex questions of today's world. This understanding of the approach was emphasized by discussants at the ID-E Berlin conference, who repeatedly stressed the importance of a sound disciplinary grounding when engaging with other disciplines.

However, the discussion also made it clear that interdisciplinary research and researchers who take a personal interest in interdisciplinary collaborations do indeed need special forms of support. Any survey would find a multitude of programs and institutional strategies that support interdisciplinary research. It is in fact extremely hard even to get an overview, let alone an evidence-based judgment of the relative strengths of different approaches. The exchange of experiences thus remains valuable. One such approach that is currently drawing a lot of attention (and was prominently represented at the ID-E conference by Simon Goldhill, Gerd Folkers, and this author) is that of the university-based Institutes for Advanced Study.

A considerable number of research-oriented universities all over the world – the University of Freiburg with the FRIAS among them – have already taken up this idea in recent years, inspired in no small measure by the renowned IAS in Princeton. In Germany, the Excellence Initiative gave this concept a considerable push.

These institutes exhibit very diverse characteristics because they have to be adequately attuned to the contexts of their parent institutions. Their common goal, however, is to cut across existing boundaries and establish new forms of exchange. Research institutes of this sort are grounded in an emphatic understanding of the intellectual potential of academic life at multidisciplinary universities.

The most exciting findings from the last four years at FRIAS have been the many novel ideas that have arisen through the opening of new windows for research. This in turn has led to benefits in the form of time for reflection (as a result of being freed from other obligations), seed money, new collaborations, and support for creating new international networks. Such seemingly small but highly flexible support mechanisms can unleash the enormous potential that lies within multidisciplinary universities.



Das ID-E Berlin Team 2011 mit den internationalen Gastreferenten (v.l.n.r.): Jan-Martin Wiarda, Die Zeit, Moderator | Dr. Herbert Grieshop, FU Berlin | Dr. Frank Kessel, Gastreferent USA | Prof. Pauline Nestor, Gastreferentin Australien | Dr. Julia Haes, FU Berlin | Prof. Gerd Folkers, Gastreferent Schweiz | Ailsa Kienberger, British Council | Daniel Zimmermann, DAAD | Prof. Simon Goldhill, Gastreferent UK | Dr. Rima Dapous, British Council | Gabriele Kawlath, DAAD | Dr. Carsten Dose, Gastreferent Deutschland | Dr. Annette Julius, DAAD | Kerrie Thronton, Group of Eight Australia | Prof. Peter-André Alt, FU Berlin.

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