What Does It Mean to Explain? An interdisciplinary symposium report

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Abstract

We summarise and reflect on the symposium 'Let me explain: Reason-giving across disciplines', held at the University of Warwick's Institute of Advanced Study in June 2024. The event brought together scholars from four faculties to discuss the concept of explanation and its relationship to interdisciplinarity. We pick out four questions that participants found especially stimulating: Is a good explanation really more than a good description? How does agency change the structure of explanations? Who explains to whom? And what does interdisciplinarity mean for the practice of explaining? We end by highlighting the refreshingly disruptive potential of genuinely interdisciplinary forums of knowledge-exchange.

Keywords: interdisciplinarity; explanation; research communication; research culture; AI

Introduction

We all do it. Biologists do it, lawyers do it, art historians do it, even philosophers do it (on a good day). No matter their field of research, academics *explain* stuff. The question *Why?* is the prime mover of scholarly activity, and explanations are what follows from this impetus.

Yet do we all do *the same* when we provide explanations? Explanations are sometimes taken to be statements that render a phenomenon understandable by providing the correct reasons for why something happened, or why someone acted in a certain way, or why the things are as they are. But disciplines often have their own ideas about which kinds of reasons can perform this function, how they must be presented, and what phenomena are capable of being understood. One academic's elucidation is another's obfuscation. We all explain, but what we mean by an explanation is itself in need of one.

Against this background, the University of Warwick's Institute of Advanced Study (IAS) hosted a symposium titled 'Let me explain: Reason-giving across disciplines' on 10 June 2024.[i] The event, organised by Simon Gansinger (who also co-authored this paper), brought together scholars from Warwick's four faculties who were asked to explore the assumptions of their explanatory practices and to identify opportunities and potential challenges for inter- and transdisciplinary explanations. The symposium began with a panel on 'Explaining *explaining*: On the meaning of asking *Why*', chaired by Manuela Marai (Department of Classics and Ancient History), followed by a panel on 'Explanatory paradigms in interdisciplinary settings: Challenges and opportunities', chaired by Joana Almeida (Centre for Applied Linguistics). In the final segment of the event, members of the audience were invited to join presenters for a concluding plenary discussion.

In this report, we first summarise each presentation. We then highlight four themes that discussants kept returning to throughout the event: the conceptual proximity between explaining and describing; the problem when and how to account for agency in explanations; the role of power in the context of reason-giving; and pragmatic differences across disciplines in communicating explanations. We conclude with some thoughts on the need to develop paradigms and practices that facilitate the generation, transmission, and application of genuinely interdisciplinary explanations.[ii]

The Symposium

In his talk 'Explanation and causation: Some ongoing problems in biology', Andrew Cooper (Department of Philosophy) discussed the notion of explanation in relation to causation. Teasing out the philosophical aspects

of biological enquiries, Cooper used the halteres of dipterans – secondary wings that do not generate lift for flight – to illustrate changing approaches to *Why*-questions. Why do halteres exist?

Cooper introduced Aristotle's four causes or explanations (i.e., the material, the formal, the efficient, and the final) to analyse the explanatory approaches of modern philosophers and scientists. For example, Newtonian physics refers to natural laws to explain the make-up and motions of the natural world. However, it can only describe *what functions* halteres play – it cannot illuminate *why* halteres are the way they are.

To answer this question, later theories of biological evolution invoke the process of natural selection. However, Cooper suggested, these explanatory attempts also do not sufficiently address the *Why*-question but are, once again, directed at *What*- and *How*-questions. What is left out of the picture is Aristotle's 'final cause', that is, the reason for which something is done or takes place – yet exploration of this final cause is necessary if we take *Why*-questions seriously. Cooper concluded by highlighting a recent attempt in biological research that reintroduces teleological explanations by recognising the agency of organisms in shaping their environment and adapting themselves to it.

The next panellist, Steve Fuller (Department of Sociology), discussed how the idea of explaining, as well as its relationship to describing, has changed over time. In a presentation on 'Overdetermining and underdetermining explanations', he first compared Aristotle's view to the modern approach. Whereas Aristotle endorses 'a patchwork conception of the world', according to which different things have distinct essences and hence are not subject to a single overarching explanation, modern science aims at universal laws that can explain as much as possible. However, whether science has the authority to explain was at times a delicate question. In the 17th century, attempts to probe into the laws of the natural world were associated with speculating about 'the mind of God'. While some scientists, such as Isaac Newton, diplomatically claimed to do no more than to describe God's creation rather than to explain it, others, such as Gottfried Wilhelm Leibniz, contended that even descriptive science aims to understand God's all-good, all-powerful essence. In the 19th century, the relation between description and explanation changed again. As private enterprises challenged the academic monopoly on the production of knowledge – think of the industrial revolution – universities strove to defend their institutional prerogatives by re-defining the purpose of scientific enquiry: they do not simply offer descriptions, practical solutions, or technological innovation – they offer *explanations*, epistemic tools that help us navigate the present and guide future research.

Fuller suggested that this institutional shift occupies the social sciences to this day. Should human behaviour be subject to explanatory research or should we be content with describing or understanding the complexity of the social world? Some scholars argue for a 'final cause' in human history, with history moving towards a pre-determined end. Others contend that history is completely open-ended and could go in any direction at any point. Fuller proposed a third option: although history may have a default path, human actions taken at critical moments can change its course dramatically. Research plays an important part in identifying, utilising, and explaining these moments.

Adela Glyn-Davies (School for Cross-faculty Studies) kicked off the second panel with a presentation on 'Designing / Making / Meaning', in which she investigated how her own field, design studies, is driven beyond disciplinary preconceptions by the very nature of its subject matter. Glyn-Davies began by noting that the 'process of designing is a process of sense-making': whatever is designed must make sense to both the designer and the users. But the meaning of artefacts, spaces, or programmes changes across time and people. 'Since design is never finished', Glyn-Davies cautioned, 'it's never done understanding'. For both the researcher and the practitioner of design, it is critical to understand not just which needs the product responds to, but also how it can make itself available for new purposes.

Methodologically, Glyn-Davies argued, such an endeavour is inherently pluralist. Rather than fixating on isolated problems, good designers are, first and foremost, informed by a holistic view. 'Systems-thinking understands that everything around it is interconnected', she emphasised and highlighted some parallels between designing and explaining: 'If we dig deeper why a symptom comes up in a system, we're also getting a much better understanding of causation.'

Matt Spencer (Centre for Interdisciplinary Methodologies) shifted the focus from practices of understanding to explanations-as-objects. In a talk titled 'Security vulnerabilities and the efficacy of explanations (in the wrong hands)', he asked: Why wouldn't we think of cyber security vulnerabilities as 'bundles of explanatory knowledge'? Spencer elaborated on this proposal with reference to a vulnerability called Rowhammer, which corrupts computer memory as a result of high-volume repeated accesses being made to memory cells in RAM. Put simply, 'Rowhammer' is the name we give to a collection of information about a specific type of manipulation that can be applied to computer systems. On an interventionist account, this is also what explanations do: they provide information on 'how things work', information that generates the capacity for purposeful manipulation.

Does this mean that Rowhammer *explains* the memory system that it targets? Spencer wanted to resist this conclusion. Rowhammer is better understood as a bundle of provisional and evolving explanatory knowledge, which researchers, cyber security professionals, chip designers, and electronic engineers can draw on to understand how systems they care about may be vulnerable to illicit tampering or subversion. Explanatory knowledge of this kind links up multiple spheres of practice which share a concern in the possible manipulation of digital technology, thereby helping them define, understand, and defuse the risks that computer systems are exposed to.

The panel ended with Carla Toro's (Medical School) exploration of interdisciplinarity in mental health research ('When is mental health unhealthful?'). Toro, a long-term researcher of schizophrenia, shared that she started her academic career from the biomedical model of mental health, which views psychological disorders primarily as biological diseases which conventionally require pharmacological interventions. Only later, when she joined Warwick, did she work together with social psychiatrists, who stress the psychological impact of social connections and are consequently less focused on medication as a first line of treatment.

Toro argued that the encounter with new paradigms of mental health was not just valuable to herself, as a researcher. A holistic notion of mental disease is crucial to clinicians as well, since patients can benefit from a diverse range of interventions, some of which might go beyond the biomedical model. By reflecting on her own journey towards an interdisciplinary understanding of schizophrenia, Toro illustrated the epistemic and practical barriers to scholarship that aims to be open-minded in its choice of paradigms, as well as the potential that such scholarship holds.

Four Questions

While each presenter considered the overarching question of the symposium – What do we do when we explain? – from a different angle, shared observations quickly emerged. Across both panels, discussants noted that social factors influence which phenomena we take to be worthy of illuminating, that explanations often travel with difficulty from one discipline to another, and that it is important to think outside of one's academic box in order to generate novel solutions and fruitful puzzles for further research. This critical piece explores four questions that audience members picked up on in the Q&A sessions and that continued to occupy the workshop participants.

Is a good explanation really more than a good description?

First, and as already indicated, the discussion returned repeatedly to the relation between descriptions and explanations. Descriptions carry no ambition to disclose causalities. They are epistemically *flat*, providing a fuller picture of an object without looking into the 'Wherefrom' and the 'Wherefore' (that is, as Cooper discussed, Aristotle's efficient and final causes). On the face of it, explanations are epistemically *deep*, in that they dig into the hidden origins of a phenomenon, for example, by giving a justification for why something happened instead of merely offering more details of the event.

The longer we look at it, though, the less clear it becomes how to draw the boundary between flat, descriptive accounts and explanations. Sometimes, we lack understanding not because we are in the dark about the causal structure of the world but because we only have a partial view of the matter. Imagine looking at, for the first time, a tiny portion of Pieter Bruegel's *Tower of Babel*. You want to understand what is going on ('Why is this man climbing a ladder?'). But to understand, you first need to see the whole painting, or have it described to you. By adding complexity and context, descriptions can perform the kind of meaning-making functions that we conventionally associate with explanations.

Arguably, this indicates that explanations and descriptions cannot be separated *ontologically*, that is, with respect to their context-independent nature, but only by looking at their function in acts of reason-giving. An explanation responds to an explicit request or a perceived need for clarification. Depending on what exactly is requested, descriptions can fulfil this function. Even more than that, the same statement – e.g., 'They are building the Tower of Babel' – can be explanatorily innocuous at first and later attain explanatory significance ('Oh, now I get it – they are building *the Tower of Babel*!'). If this is true, then the boundary between explanatory and non-explanatory statements is pragmatically defined: it comes down to whether it allows us to make sense of a phenomenon that we did not understand before.

How does agency change the structure of explanations?

A second theme that occupied participants throughout the day concerns the role of agency in explanations. To illustrate, consider the following: Which kinds of facts do you need to include in your explanation to answer a question like 'Why did Helene destroy Anna's car?' It all depends on what kind of entity 'Helene' refers to. If Helene is a person, we will typically want to know the facts in the light of which she acted. Did she destroy Anna's car intentionally? If she did, what was on her mind? Did Anna do something to her that could justify such an action? In short, our

explanation will draw on the reasons that Helene had when she performed the action.

However, Helene might not be a person but a tropical cyclone, in which case it will be wholly inappropriate to explain Anna's misfortune as the result of an action. Before we get into the business of explaining, we need to establish whether our *explanandum* involves agency or not. If it doesn't, we can't (and we shouldn't) put ourselves into anyone's shoes to understand what happened. All we need is sufficient clarity about the relevant causal factors: the force of the storm over North Carolina, the net weight of a Ford F-150, Anna's ill-fated decision to park it on the riverside, et cetera.

Sometimes, however, this pre-explanatory challenge – Are we looking at an action or at 'stuff' simply happening? – is tricky to settle. Participants were especially vexed by the problem of what to make of ever-more sophisticated AI-models, whose behaviour is often unpredictable even for their developers. In the discussion, a cautious consensus developed that this might best be understood as a normative question: How ought we to relate to AI? Ought we to deny that computers act for reasons? Ought we to reserve the dignity of agency to humans? Here, explanatory puzzles intersect with broader philosophical ones.

Who explains to whom?

In the Q&A, a participant raised the following issue: 'Is the idea of explanation useful when we enquire into social lives? [...] "Let me explain" [the title of the event] suggests that I am capable of giving an explanation to someone else' – and that that other person better listen up! Now, should academic researchers, a group of people not exactly representative of society at large, explain to the non-academic public what the world is like? In other words, who explains what to whom with which authority?

It is tempting to give in to a sceptical attitude towards academic explanations that is itself reflective of a postmodern turn in some academic disciplines. Traditionally, university researchers are seen as authoritative knowledge producers and the public as passive consumers. In contrast, in the postmodern condition, there is a rejection of 'meta-narratives' or 'grand narratives' that claim to offer universal truth, objective knowledge, and all-encompassing explanations about individuals and society.

On the one hand, a good measure of doubt towards explanatory authority, especially one's own, is certainly valuable. Researchers would do well to be sensitive to epistemic injustices caused by uncritical explanatory practices. For example, unexamined power-differentials can lead to social scientists adopting a patronising stance towards the people that might

benefit from their research. On the other hand, as a rhetorical gesture of protest, 'Who explains to whom?' can become the vehicle for a dismissive attitude towards truth-seeking in general. More productively, the question should inspire us to investigate how one formulates and negotiates meaning in processes of explanation. For instance, what do I mean by explaining? How do I explain? How do I position myself and my audience in the explanatory narrative I offer? How do I relate to other perspectives and how do I deal with alternative or conflicting explanations and their underlying worldviews? How do I engage with other views while presenting my own perspective? Whom am I addressing? What do I assume about my audience?

By asking these practical questions, researchers can engage with the idea of explanation in a more nuanced way, using it thoughtfully and reflectively to navigate the complexities of their work. Rather than abstract entities in the heaven of knowledge, explanations are communicative acts among flesh-and-blood beings, all with their own interests, needs, insights, and biases, and they should be treated as such.

What does interdisciplinarity mean for the practice of explaining?

Throughout the symposium, two forms of interdisciplinarity were on display. The first involves engaging with and integrating multiple disciplinary perspectives or paradigms within one's research project. The second concerns interdisciplinary communication, namely, relating and explaining one's own research to audiences with other disciplinary backgrounds.

Interdisciplinarity-as-plurality-of-perspectives has for some time received significant attention within the academic community. In contrast, interdisciplinarity-as-communicative-practice is much less discussed and theorised, even though many research events, such as this symposium, foster conversations across disciplinary divides. Crucially, though, at events like these, we can observe much more than the exchange of specialised knowledge. All participants, including organisers, speakers, and audiences, bring with them specific assumptions about how to transmit knowledge, which they have developed by getting socialised into their respective institutional cultures. For instance, two people from different departments might have vastly different ideas regarding the modality of one's presentation, the genres of one's speech, communicative purposes, linguistic resources, the forms of events, appropriate activities at events, and the rules around face-to-face interactions, Q&A sessions, and group discussions. These culturally shaped assumptions and practices in turn shape the processes and outcomes of knowledge exchange. As a result, what may appear accessible and normal to some people may be alienating and excluding to others.

The five speakers at this symposium opted for different formats, including presentation slides, spontaneous oral speech, oral speech based on prepared bullet points, and delivering a prepared text. Group discussions at the end of the symposium revealed heterogeneous reactions to these presentational styles: some showed a strong preference for slides, finding pure oral talks difficult to follow; some were shocked by the practice of reading out a written text; some found the spontaneous delivery of thoughts engaging and impressive. Arguably, both the speakers' choices and those audience reactions expressed their assumptions about what constitutes a 'normal' academic presentation and how a research exchange event 'normally' looks like. Even the very choice of a symposium as a forum for academic exchange reflects the research culture of its organiser. Most *inter*disciplinary communication relies on pre-established forms of *intra*disciplinary communication. However, if interdisciplinary communication is to negotiate and transcend the established boundaries between disciplines, then shouldn't we also negotiate and eventually transcend the very forms in which we communicate and exchange knowledge?

Concluding Remarks

This final theme connects to what we took to be the central takeaway from the symposium, which concerns the power of interdisciplinarity to disrupt paradigms and challenge institutionalised patterns of thought and speech. Research cultures are difficult to break into and even more difficult to break out of. As students, researchers learn how to explain effectively; and as teachers and writers, they pass on what they have learnt. Disciplines can be thought of as giant cycles of reason-giving that keep turning in virtue of the continuous momentum of repetition.

Being an academic researcher requires us to prove – to university administrators, funding bodies, hiring committees, publishers, colleagues, and students – that we can do our bit to keep the spinning top afloat; that we know what to say, how to say it, and what the point of saying it is. Against the background of this demand, it takes strength to pause and reflect on the academic customs that have become second nature to us. It is an effort that is repaid not in citation numbers but in understanding. By decentring from the explanatory traditions we participate in, we gain insight into the paradigms that influence our research, language, and professional identity; and we may be enabled to revise, for the better, our practices of reason-giving.

Interdisciplinarity may or may not be valuable for its potential to improve the impact of research – it all depends on our stance towards a given research paradigm. However, a more profound value lies in the counter-paradigmatic, centrifugal force freed by interdisciplinary encounters: in its

ability to unsettle established networks of knowledge, by challenging our habits of sense-making, so that we may make place for the sense of wonder that made many of us ask *Why?* in the first place.

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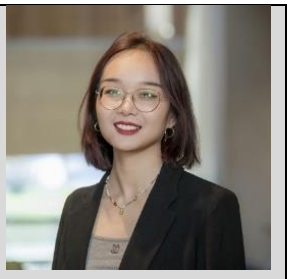

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Endnotes

[i] https://warwick.ac.uk/fac/cross_fac/ias/researchandnetworks/calendar/upcomingevents/symposium/ [Accessed: 17 March 2025].

[ii] The literature on what it means to explain fills entire libraries. For a selection of consequential publications, see (**Achinstein 1977; Alvarez 2010; Dancy 2000; Friedman 1974; Hempel and Oppenheim 1948; Kearns and Star 2008; Mittelstadt, Russell, and Wachter 2019; Nozick 1983; Pearl 2009; Turner 2010; Woodward 2003**).