

In Search of Transdisciplinarity

Review of Two Workshops Supported by Situating Science:

*Varieties of Empathy
in Science, Art and Culture*
University of British Columbia
October 10–12, 2008.

*Critical Debates
in Evidence Based Medicine*
University of Toronto
November 14–16, 2008.

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Disciplines have a way of imprisoning their creations. Entrenched in an incommensurable discourse, ideas grow stagnant. Whether ideas transcend this imprisonment is a matter of adapting, flexing, and mobilizing knowledge. This is the aim of Situating Science: Cluster for the Humanistic and Social Studies of Science.¹ Promoting transdisciplinarity among researchers, stakeholders, and the public, the Cluster brings diverse groups of scholars to sit around a common table and discuss a common theme. My aim in this short review is to capture some of the central themes and discussions of two such workshops, one on empathy, the other evidence-based medicine. Both workshops provided a fascinating multidisciplinary perspective on topics that easily transcend disciplinary boundaries. Yet the divisions between participants were clear, leaving some discouraged about producing collaborative work. As both workshops boasted a broad range of speakers and participants, my challenge has been to identify common themes without diminishing or disregarding this multiplicity of perspectives. I have only sought to highlight some of the most thought-provoking ideas.

Varieties of Empathy in Science, Art and Culture was a three-day workshop held at the Peter Wall Institute for Advanced Studies at the University of British

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¹ Situating Science (www.situsci.ca) is a seven-year, \$2.1 million Strategic Knowledge Cluster Grant from the Social Sciences and Humanities Research Council of Canada. Strategic Knowledge Clusters promote collaborative discussions between an “international network of researchers... located across a variety of institutions both within Canada and abroad... to bring research knowledge to bear on issues of intellectual, social, economic, environmental and cultural importance with a focus and force that would not otherwise be possible.” See www.sshrc.ca for more details.

Columbia.² The conference brought together scholars to present and publish a multidisciplinary account of empathy. The keynote address was delivered by Jean Decety, professor of social cognitive neuroscience at the University of Chicago. Days were packed with thematically arranged presentations, with over twenty speakers throughout the course of the workshop. The breadth of perspectives was outstanding and overwhelming; this included historiographic, aesthetic, neuroscientific, phenomenological, literary, and cultural papers. With such diversity, it was clear that the group would have to overcome their disciplinary differences. Generally, the speakers addressed two basic questions: (1) *Why* do we empathize with certain people, objects, or events; and (2) *How* do we empathize with these things so readily, passionately, and unconsciously? A complete answer to these questions requires a manifold perspective, comprised of science, art, philosophy, and culture.

The history of empathy is one of philosophers, poets, and psychoanalysts. The modern English word is a rough translation from the German *Einfühlung*, best interpreted as *in-feeling* or *feeling-into*. *Einfühlung* expresses an imaginative projection of the self into an object of cognition, a *becoming* of the Other in order to comprehend it. The term is meant to express the broad array of things with which a person can empathize, whether a work of art, architectural structure, or literary character. With the acknowledgement of empathy as a genuine psychological phenomenon came the realization that it was not universally experienced. While the origin of the term *Einfühlung* stretches back to the mid-nineteenth century, the medicalization of empathic-absence only occurred in the 1940s and 1950s. Individuals who lack the empathic impetus are either unable to recognize and interpret the emotions of others (narcissists) or recognize such emotions without feeling them personally (sociopaths). Empathy (*feeling-into*) is distinct from sympathy (*feeling-with*) because we can identify with someone's feelings (empathy) without feeling troubled by their plight (sympathy). Empathic cruelty exemplifies this distinction: A torturer may empathize with his/her victim, in order to better inflict torture, without ever feeling remorse.

While the reasons *why* we empathize are diverse, each act of empathy betrays a hidden humanness. Pragmatically, empathy allows us to recognize, interpret, and trust the emotions of other people. Abstractly, empathy allows us to shape and see the world in human form. The pragmatic and abstract are connected by the concept of *empathic symmetry*, a common theme throughout

² The empathy workshop was the fourth event this year sponsored by Situating Science. Co-sponsors and supporters included The Peter Wall Institute for Advanced Studies and the departments of history and philosophy at the University of British Columbia. Participation in the open workshop was free, though dominantly attended by preregistered participants. Presentations were video recorded and presented papers will be assembled for publication. See <http://www.empathy.pwias.ubc.ca/> for more details.

the workshop. Empathy is a process of *experiencing* the emotions of others *symmetrically*, such that their mental phenomena become our own. It is a coupling of perception and expression that is autonomic, instantaneous, and unconscious. Catching a 'contagious' yawn, for instance, seems to require empathy, whether it occurs between you and your friend or you and your pet. Emotions become contagious and vicariously experienced. In neurophysiology, this process has been identified in 'mirror neurons' of the Macaque monkey, which fire both when they perform an action and when they see the same action performed. In phenomenology, the embodied empathic experience is a feeling of potentiality in the muscle-sense—a kinaesthetic extension of apperception.

Empathy is so central to the way we interact with the world that it is easily taken for granted. Stephen Turner, professor of philosophy at the University of South Florida, presented the idea that even rationality is empathically communicated. Unlike the structuralist who believes in innate cognitive rules of rationality, the empathist believes that the rules of cognition are socially grounded; empathy is used to apperceive what and how others think. Is empathy, then, an ultimate and proximate cause of rationality? Is it impossible to communicate rationally with those whom we do not empathize? That empathy places limits on whom and what we connect with was a theme explored by many of the speakers (and I continue the discussion below).

In the abstract sense, we engage empathic symmetry when we connect with objects in the world. Architectural styles, for instance, reflect the embodied forms of people, metaphors of the corporeal body, and the sentiment of an epoch. In its most extreme, aesthetics becomes neuro-structuralism: that which is pleasing to the brain is pleasing to the artist. The result is a subtle and elusive animism of the natural world, a pan-psychism projected outward from within. To the scientifically inclined, this 'shaping of the world' may seem to undermine objectivity. A clear example can be found in the origins of ethology, the scientific study of animal behaviours in their natural environment. Marga Vicedo, historian of biology from the University of Toronto, presented a historical account of Konrad Lorenz, Austrian zoologist and founder of modern ethology. Lorenz's intimate relationship with animals allowed him to study his subjects as a deeply intuitive 'participant observer'. Yet his ethos of self-restraint and quest for an objective ideal led him to reject empathy in the description of animal behaviours. The degree to which scientists empathize with their objects of inquiry is contentious and this rejection of the scientific self has a complex history of its own. This scientific pursuit of objectivity transforms the question into 'why *should* we (or why *must* we) see the world through empathic human eyes'?

A complete answer as to *how* we engage in empathy must also cross disciplinary boundaries. In clinical settings, where some of the earliest explorations of empathy were first performed, physicians must walk the fine line of empathic engagement. Freud's psychoanalysis eschewed the empathic relationship, which tempted subjective interpretation. Neutral objectivity could

only be achieved by using empathy as an asymmetrical, task-focused, explicit tool of diagnosis. Yet the need for experts and caretakers to be like us (what McGill psychiatrist Laurence Kirmayer referred to as the “Sarah Palin effect”) is absolutely crucial in building and maintaining trust. The fine line is even more precarious in multi-cultural cities, where patients and physicians are unlikely to share a common culture. Ethnic matching and cultural competence are often preconditions of an empathic connection.

Kirmayer referred to this fine line as an *aesthetic distance*, like that between theatrical performers and their audience. The magic of theatre (and fiction in general) lies in the elimination of this character-spectator distance; fully engaging with a character requires an unhindered empathic connection. This concept of self-other elimination was common to many of the workshop's discussions. Karsten Stueber, professor of philosophy at the College of the Holy Cross, argued that this empathic connection disintegrates when a character's moral reasoning is too far beyond our own. The suspension of disbelief that is necessary to engage in any type of fiction is met by an 'imaginative resistance' when moral (rather than factual) truths must be suspended. Though we might enjoy fiction that challenges our normative beliefs, authors seem to lose authority when 'higher order' moral truths are inconsistent or ambiguous. What then are the limits of empathy, if any? If there are limits, how are they best defined? Consider, for instance, the limits of empathizing with non-human animals or social deviants that may not appear to exhibit 'higher order' morality.

Only one session of speakers touched on the project of naturalizing empathy using imaging and experimental techniques (functional MRIs, psychopharmacology, lesion and animal studies, etc.). Social cognitive neuroscience interprets the empathic process as that of 'neuronal symmetry', where actions and perceived actions have isomorphic brain states. Cognitive mimicking is nearly instantaneous (~25ms) but must be learnt by newborns, suggesting that empathy is not an innate reflex. Jean Decety, as keynote lecturer, presented a non-reductionistic, working model of empathic pain perception. From watching a baby cry to envisioning torture, pain is culturally ubiquitous and its cognitive 'pain matrix' has been well documented. The pain matrix is composed of neuronal circuits associated with subjective awareness, attention/response selection, and defensive behaviours. Individuals asked to imagine or view another's painful experience consistently display activity in this matrix. Physicians, who often must inflict pain in order to heal, display reduced activity in these areas due to a supposedly enhanced self-other distinction. This often leads to physicians underestimating the pain in others both inside and outside the clinic.

It was clear from discussions at the workshop that most participants felt the scientific perspective to be incomplete and unable to adequately account for the phenomenology of empathy. Empathic symmetry seems to be a far richer

phenomenon than the symmetrical alignment of narrow neuronal networks. At the very least, it offers a useful first approximation that aims to explain phenomena at a different level of causation. Whether this explanation is satisfying depends on what question is being asked, and social cognitive neuroscience seeks answers to a hard question: what is it about the brain that allows us to empathize?

Science, art, and culture intertwine in the embodied experience of empathy. The workshop exemplified the possibility of an open forum that transcends disciplinary boundaries while still respecting disciplinary expertise. What emerged was an overlapping mosaic of common themes, such as empathic symmetry, aesthetic distance, and the limits of empathy. Though varied perspectives may not lead to a unified model of empathic experience, perhaps unification was not the goal. Instead, the goal was to develop a multiplicity of perspectives about an issue that cannot be described by a single viewpoint.

Critical Debates in Evidence Based Medicine was a three-day workshop held at Victoria College at the University of Toronto.³ Evidence-based medicine (EBM) is the application of quality-assessed medical evidence to clinical practice. The goal is to prioritize scientifically derived practices over non-scientific methods, namely expert-, experience-, and pathophysiology-based medicine. What remains is a hierarchical categorization of 'evidence', ranging from expert opinion at the bottom to randomized control trials (RCTs) at the top. The EBM movement began at McMaster University as a response to practitioners whose methodology had become resistant to change. Proponents argue that physicians unable or unwilling to stay up-to-date are a hindrance to public health. Others contest (as did Mona Gupta, a Toronto psychiatrist) that EBM may, at best, prevent physicians from doing something "really foolish".

John Worrall, a philosopher of science at the London School of Economics, began the workshop by offering a critique of RCTs as the infallible gold standard of medical evidence. He argued that philosophers, ethicists, and physicians need to start from a fundamental perspective offered by the philosophy of science. This perspective aims to assess the logical relationship between evidence, background knowledge, and medical hypotheses. He presented several arguments to the effect that RCTs do not successfully control for unknown confounding factors, as their proponents claim they do. In addition, while RCTs

³ The Evidence-Based Medicine workshop was the fifth and final event this year sponsored by Situating Science. Co-sponsors and supporters included the Canadian Institutes of Health Research as well as the Institute for the History and Philosophy of Science and Technology, the Joint Centre for Bioethics, and the Connaught Foundation at the University of Toronto. Participation in the open workshop was free, though again dominantly attended by preregistered participants. The workshop had one well-attended public panel and a series of breakout sessions after each presentation. Participants were randomly distributed at each breakout session and asked to answer thematic questions that were then reported to the entire workshop group. Presentations were video recorded and should be available online sometime soon. See <http://www.situsci.ca/en/past.html> for more details.

provide strong support for a particular medical practice within a particular patient population, they seem to eliminate the need for background knowledge and physician judgment. In a sense, RCTs may provide impeccable evidence for the wrong theory—one that assumes medicine is simply a matter of science, deemphasizing the experience and tacit knowledge of physicians.

The public panel began with Cheryl Misak, a philosopher at the University of Toronto, discussing the role of narrative and testimonials as legitimate tools of medical evidence. In recounting her own experience as a hospital patient, she asked what it would take for narratives to act as evidence. The dilemma is that testimonials, whether expert or lay, have the capacity to mislead and persuade those attempting to make justified decisions. If critically done, Misak argued, narratives can act as informative medical evidence so long as they are internally consistent and open to criticism. If a patient's confidence and trust in an attentive physician influences the outcome of treatment, then narrative may play a vital role in acknowledging the patient's autonomy and unique perspective. Presence and empathy cannot be neglected.

Kumanan Wilson, physician and associate professor at the University of Ottawa, continued the panel with a balanced discussion of EBM's clinical implications. EBM has been shown to improve practice when combined with basic critical thinking. Yet RCTs cannot be used to create cookbook differentials for diagnosis; they never guarantee that a particular patient will benefit from the practice encouraged by a controlled trial. What conclusions can be drawn from a study that is just barely insignificant? How do physicians deal with important subgroups that have been neglected by RCTs? While these questions may be neglected, EBM may simply be the best we have.

The final panel speaker was Ross Upshur, physician and departmental director at the University of Toronto's Joint Centre for Bioethics. Providing a strong critique of EBM, Upshur outlined the challenges facing any form of evidence prioritization. EBM carries with it a powerful authority that can easily be exploited if publications lose their integrity. In addition, the effectiveness of EBM hierarchies is taken for granted, and none are based on an internally consistent form of 'evidence' (where is the RCT that shows EBM to be most effective?). While RCTs remain at the top of every EBM hierarchy, more than fifty different configurations are being used in practice. Upshur also addressed the challenge of time. As physicians spend more time searching for evidence than with patients, the healing qualities of empathic presence are lost. In an age of 'Google-doctors', this is given less and less priority. Overall, the public panel was well received by the audience as a balanced and critical discussion.

The workshop clearly demonstrated that debates over the use and misuse of EBM continue to rage. In a fascinating discussion of EBM's bioethical implications, Ian Kerridge outlined the problems associated with a foolhardy trust in EBM. Touted as a moral, epistemic, political, and ideological authority,

EBM provides power and legitimacy to certain forms of knowledge. It displaces clinical judgements, patient values, and narratives from decision making. How is pain, suffering, justice, cultural integrity, or quality of life incorporated into the EBM hierarchy? How do physicians deal with data that is culturally biased, unethically generated, or motivated by financial interests? In answering these questions, physicians are forced to look outside EBM. Perhaps more attention should be paid to narrative, care, and presence rather than allowing the mechanics of controlled trials to dictate decision making.

It seemed to be the general sentiment that EBM has been incorporated into clinical practice without a concerted effort to thoroughly evaluate its ethical, social, or epistemic implications. EBM's uncompromising structure may obscure the messy, complex, and value-laden quandaries of medicine by making them appear as a mere matter of empirical investigation. Social scientists end up asking the harder questions and performing the complex *post hoc* tests that RCTs cannot. Although EBM has addressed many of these critiques, often by incorporating them *ad hoc* into its framework, many still dispute the underlying legitimacy of the practice. Implicit in the pessimistic tone of the workshop was the underlying doubt that the complexities of care can ever be addressed by EBM.

Do open dialogues encourage collaborative research while dismantling the seemingly impermeable boundaries of the Ivory Tower? As a graduate student aiming to build interdisciplinary networks and explore ideas from a wide variety of perspectives, I found the workshops rich and rewarding. I worry, though, that my enthusiasm was not shared by all participants and that little collaborative work will result. Despite my high expectations for interdisciplinary openness, the workshops made it clear that the search for transdisciplinarity requires patience, compromise, and a willingness to engage in new modes of thinking. Only with these qualities in mind will Situating Science fulfill one of its central goals: to create an accessible forum for the non-academic community.

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