

# Not for profit, but for use: is philosophy good for practice?

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CHES Working Paper No. 2020-05

[Produced as part of the Knowledge for Use (K4U) Research Project]

Durham University

December 2020



The K4U project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 667526 K4U) The above content reflects only the author's view and that the ERC is not responsible for any use that may be made of the information it contains

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## ***Prologue***

In 2010 (in the immediate aftermath of a global economic crisis of huge proportions) Martha Nussbaum vindicated the 'not for profit' value of the study of the arts and humanities disciplines, the importance of teaching critical thinking and reflection, and the need for developing a human model of education for the health and survival of our democracies. (Nussbaum 2010)

As counterintuitive as it might appear, investing in the humanities is ultimately a profitable pursuit. It prepares for responsible citizenship, better opportunities of employment and not last, meaningful lives. 'For profit' and 'not for profit' is a false dichotomy. "A strong economy is a means to human ends, not an end to itself." (Nussbaum 2010, p.10) Privileging the former to the detriment of the latter would deprive the purpose of economic growth of one of its most powerful tools of success. On the other hand, even succeeding in "(p)roducing economic growth does not mean producing a healthy, engaged, educated population in which opportunities for a good life are available to all social classes." (Nussbaum 2010, p.15) Numeracy and technological training do not immediately translate into sensitivity about class, race, gender, or historical or political awareness.

Already in the 1980s, Bernard Williams made the point that the Humanities are under-supported, and they need defending. (Williams 1987) One widespread form of attack is to say that the humanities are a 'luxury article' and we live in historical hardship. A response that claims that the humanities are the gateway to a civilized society is weak in that it implicitly accepts their luxury status. Another response argues that the humanities are a necessity if we want to produce educated, honest, truthful, mature individuals. But this is also a rather weak line of defence, as we are not told how these 'better' individuals are meant to relate to the wider society and what advantageous consequences such types of individuals would bring to society itself. All in all, it is a defence that lacks in political vision as it focuses – in a sense akin to the previous defence – on "desirable qualities of cultivated individuals."

These types of defence take the wrong starting point. Instead, Williams argues, we should proceed from discussing the "necessarily institutional pursuit of certain subjects, of certain kinds of knowledge", or understanding "what they are and what they do", and only then assessing their possible role in society.

Of course, when we come to question types of knowledge, in our societies the first domain that comes to mind is that of the sciences – in particular, Williams claims, when it comes to understanding society we think of the social sciences. But relying on social scientific investigation without a well-informed critical understanding of the historical, philosophical, cultural background wherein such investigation is carried out, and questions are addressed and answered, will not deliver the results sought for. It is the symbiotic connection between social understanding and what the humanities have to offer to such understanding that justifies the latter "as subjects, and on-going research into them as forms of knowledge."

The same, we can add, goes for the connection between the humanities and the natural and life sciences. And here philosophy in particular has a role to play, as will be argued in this paper.

In what follows I will first identify the context of practice where philosophical investigation might prove its worth. I will then analyse the epistemic conditions that allow philosophy to take up the challenges originating from that context and how philosophical inquiry is to respond to those challenges. I will use an illustration from the specific field of the philosophy of science to demonstrate how philosophy and practice can interact, and with what consequences. In so doing an idea of applied philosophy able to engage with practice is explained and articulated.

### **Philosophy and the sciences in ‘knowledge societies’**

Knowledge is a central and highly controversial concept in our societies. It has long been argued that modern societies are *knowledge societies* (Stehr 1994), which is other than *information societies*, i.e. societies inundated by the production and often unregulated diffusion of information coming from all sorts of sources. They are instead societies that look and invest on knowledge as a ‘commons’, i.e. as a resource shared by a community (Hess-Ostrom 2007) in view of promoting public good.

The type of knowledge at the centre of this model of society is normally science-based. It is precisely this type of knowledge that has on one side entered the day-to-day negotiations among individuals (Cerroni 2007), and on the other has informed policy making processes and political action. However, injecting social negotiations and policy/political decisions with ‘knowledge as commons’ is not a miraculous cure. First of all, science-based knowledge brings with it a vast amount of risk and uncertainty, typical of that knowledge and the contexts where it is applied – modern societies have also notoriously been defined as *risk societies* (Beck 1992) – one of the possible consequences being that of becoming a source of inequality and social exclusion.

Secondly, the political and social use of that knowledge, though potentially beneficial, is not automatic, or a given. As we read for example in a 2007 European Commission report: “Policy making should not stop at simple or mechanical solutions; it should address the complex issues of science and governance honestly, thoroughly, patiently and with humility” (p.12) Looking for example at the way the so called ‘Evidence-based Policy and Practice’ movement has been used and implemented, one wonders whether it has indeed been taken sometimes as one of those ‘mechanical solutions’, and whether – despite its widely recognised value and relevance as a form of governance – it should rather be better assisted and supplemented by an in-depth, meticulous, comprehensive analysis of what makes evidence really useful to, and usable by, policy (e.g. on the model put forward by Cartwright-Hardie 2012), and what a concept of ‘evidence’ should really include. The evidence that drives policy decisions should not be mono-dimensional. This is partly because scientific evidence might be uncertain, or incomplete. But even when best science is available, decisions should include a wide array of factors and elements that have to do with the

wider socio-economic-political context science itself is a part of.<sup>1</sup> Besides, this analysis should not only look at the quality of scientific evidence in the contexts of its use, but – we might add – at the quality of the *scientific advice* based on the available evidence, and under the wide spectrum of conditions of complexity and/or uncertainty that concern both science and policy making.

Thinking of scientific advice in the context of knowledge societies requires critical skills that often go beyond the single expertise (either of the scientist or of the policy maker, or even of both paired together). This opens the ground to acknowledging the role and value at the same time of interdisciplinary collaboration and of philosophical contribution. Let's start from analysing the latter.

### **Applying philosophical insight**

When the American Philosophical Association (APA) was founded in 1901, a number of roles were thought out for the philosophers of the 20<sup>th</sup> century in order to define their professional role, and their position among other professional figures in the academia.

Philosophers could be “synthesizers of academic knowledge, offering a global perspective on knowledge; formalists, providing the logical undergirding for researchers across the academy; disciplinary specialists who focused on distinctively philosophical problems in ethics, epistemology, aesthetics, and the like; interdisciplinary and transdisciplinary generalists who sought to translate insights to other branches of the academy and to the world at large; a branch of the social scientists, addressing the ethics and values dimensions of societal problems”. (Frodeman 2013, p. 1923-24)

This categorization would have been interesting for the discipline as a specific issue to discuss, but this did not happen at the time. The specialists and the formalists triumphed (at least in the Anglo-Saxon world) and philosophy was by and large practiced this way for the rest of the century.

It has not always been that way for philosophers. Leaving Aristotle at rest for once, and to use an example from the 17<sup>th</sup> century, John Locke in the ‘Epistle’s to the reader’ in his famous *Essay* talked of the philosopher as an ‘underlabourer’ of the scientist.

‘in an age that produces such masters as the great Huygenious and the incomparable Mr. Newton, with some other of that strain, it is ambition enough to be employed as an underlabourer in clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge.’ (Locke 1689)

What Locke meant is that the philosopher, by means of his analytical and logical skills, is to apply himself to the elimination of mistakes, nonsense, vagueness, etc. from the vocabulary of the scientist. Also, and more specifically, the philosopher should be able to spell out the meaning of

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<sup>1</sup> More on this below.

scientific terms, and to put forward general criteria for the correct use of those terms – that is, being able to say which terms can be rightly and validly used in science, and under what conditions. The under-labourer’s task then, despite what the expression seems to suggest, is not after all so trivial, and certainly not so humble as Locke would have us believe. In fact, within this view, the philosopher seems to offer a contribution along the way to knowledge, which is a preliminary condition for achieving this knowledge.

This view has been variously challenged. On the one hand, why should we believe that philosophy has such a special (normative) role to play vis a vis empirically formulated issues? On the other hand, why should we not believe that science can look after itself, also when more theoretical or abstract or normative questions arise? Arguably, these questions are elicited by its own practice.

Despite the various answers put forward to these queries, I would suggest two preliminary thoughts. Firstly, philosophical questioning should not be taken as being separate from, or external to, empirical or factual inquiry. Empirical inquiry and philosophical questioning might be thought of as addressing the same domain of knowledge, though from two rather distinct perspectives of analysis. However – and this is the second thought – this should not incline us to believe that the philosopher is not any different from any practicing scientists. Scientists (natural, social) might indeed encounter philosophical problems while carrying out research, but the resources made available to them by scientific theories, laws or experiments, and the aims they set themselves in pursuing scientific research, are not appropriate for addressing these problems, for evaluating their consequences, or assessing the scope of their implications. Philosophical investigation is one of the tools made available by a certain community of practitioners to pursuing the general task of defining the domain of issues, problems, and aims of the various fields of empirical research. The way in which philosophy does so is by offering a type of expertise, which allows to formulate a series of questions, and to understand and evaluate models of answer to these questions.

A double-edged corollary should be added here. When scientific enquiry is itself used for purposes other than the very production of scientific results – for example when science is ‘used’ in the sense, mentioned above, of serving social purposes – philosophy finds itself challenged by further domains of questions to address and models of answers to evaluate.

These further challenges originating from the external world (external to the insular practice of ‘pure’ philosophy) have become particularly pressing in our contemporary societies, and philosophy more and more is called in to reflect on these challenges. To be up to the task philosophers need to become

“active *participants* in ongoing debates on policy problems, working on the project level with scientists, engineers, policy makers, public agencies, and community groups. Philosophers need to get out of the study, and into the field.” (Frodeman 2010)

Science is in constant dialogue with society, but the rules that drive this dialogue are not always explicit, and the dialogue is not always a good one. One of the aims of philosophy could be that of identifying what conditions, models and practical tools might help understanding how scientific knowledge is actually used, and how it could be used better.

Scientific knowledge is expensive. It is mandatory to learn how to make good on the investment. This entails a holistic approach that includes using different methods, calling on different kinds of expertise, appealing to standards of use different from those typically found in the sciences themselves. And it also typically involves relying on the tools and approaches of different disciplines, and learning how to bring them together at the point of action.

In this sense, philosophy should stop being insular and start 'dediscipline' itself, as has been intimated. (Frodeman 2013) Philosophers should acquaint themselves with different types of expertise (different from their own) in order to be able to work with other professionals and learn to converse with them. Philosophy might play the role of the *integrating element* across the disciplines, and engage in a policy-oriented philosophical practice. As another philosopher put this:

"We philosophers of science are faced (...) with a hard job. (...) in the natural and social sciences, in policy, and in technology, we can help. But to do so we need to figure out how better to engage with scientific practice and not just with each other". (Cartwright 2012, p. 988)

By doing this philosophy becomes a new opportunity in the panorama of knowledge-producing disciplines: it makes us look, among other things, at how to emphasise the value and use of effective interdisciplinary and collaborative research.

### **Interdisciplinarity: turning application into a real option**

The first to use the word 'interdisciplinary' was Jean Piaget:

"Enfin, à l'étape des *relations* interdisciplinaires, on peut espérer voir succéder une étape supérieure, qui serait "transdisciplinaire", qui ne se contenterait pas d'atteindre des interactions ou réciprocitys entre recherches spécialisées, mais situerait ces liaisons à l'intérieur d'un *système* total sans frontières stables entre les disciplines." (Piaget 1972, p.144)

If we follow Piaget's suggestion, the emphasis of interdisciplinarity must be put both on *relations* and on *system*. This means on one side, finding a way to combine the different disciplines in view of achieving an understanding of the objects of investigation that proves to be more satisfying than what could be achieved by means of the tools made available by single disciplines. On the other side, it leads us to rethinking the borderlines of the single disciplines as being open, malleable and permeable in view of achieving a result of shared understanding. Both tasks are methodological,

but they entail an underlying answer to an ontological question: when we pursue interdisciplinary research, what are we applying the different methods to?

This is not a simple question to address. One outcome of disciplinary training is that different disciplines tend to see the world differently. They specialise in studying different phenomena or different aspects of the same phenomenon. And this of course might lead to disagreement and conflict. If the aim is to pursue a type of research that benefits from the different perspectives, rather than being hindered by their interaction, how can differences be managed? A suitable tool in interdisciplinary research literature is offered by the concept of 'boundary objects'. The concept was introduced by Susan Leigh Star and James Griesemer (1989):

“Boundary objects are objects which are both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. (...) They may be abstract or concrete. They have different meanings in different social worlds but their structure is common enough to more than one world to make them recognizable, a means of translation.” (Star and Griesemer 1989, p. 393)

Some of the boundary objects that Star and Griesemer list include specimens, field notes, and maps of particular territories. These objects interact with members of various social groups (including amateur collectors and museum professionals) but are used to very different ends by each group.<sup>2</sup> Boundary objects are a common point of reference that yet entails layers of differences. For example, the concept has been usefully employed in the field of physics by the historian of science Peter Galison to show how different scientists belonging to different traditions can actually understand each other. (Galison 1997) It could also be used to illustrate the objects of research in the social domain. Take for example the concept of race as described by Efstathiou and Mirmalek (2014).

A hot topic of debate (and disagreement) in the United States is 'racial health disparities', and how to measure them. “'Racial health disparities' are differences measured in the average health outcomes of people from different 'race/ethnicity' groups in the US.” (Efstathiou and Mirmalek 2014, p.236) For example, they can be expressed by statements such as 'Black adults are 40% more likely to be diagnosed with diabetes than non-Hispanic White adults'; or '71% of people with HIV/AIDS reported in 2010 belonged to racial and ethnic minorities'; or 'tuberculosis was diagnosed 8.5 times more in Blacks than in Whites in 2007'; etc. Because of insurance and geography, people identified with particular categories of 'race' and ethnicity have a harder time getting health care, and when they do get care, it is on average of poorer quality than health care

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<sup>2</sup> To use as illustration their example of the maps of the state of California: “The maps of California created by the amateur collectors and the conservationists resembled traditional roadmaps familiar to us all, and emphasized campsites, trails and places to collect. The maps created by the professional biologists, however, shared the same outline of the state (with the same geo-political boundaries), but were filled in with a highly abstract, ecologically-based series of shaded areas representing 'life zones', an ecological concept. Starr and Greisemer, 1989, p. 411.

given to non-Hispanic Whites. In 2010 a National Institute of Minority Health and Health Disparities (NIMHD) was set up with the explicit aim to target disparity by looking into its causes, and causes were identified in three areas: society, the environment, and genes.

So here is the situation: one problem, and at least three fields of expertise to deal with it (social, environmental, genetic). In Efstathiou and Mirmalek's words:

“Health experts might agree on the challenge, broadly put: How can we get everyone to have good health, irrespective of their ‘race’ or ethnicity? Yet, exactly what is at stake here is not so clear. Health scientists trained in the social sciences tend to see social and economic solutions to this problem, whereas scientists with training in genetics and molecular biology are pursuing pharmaceutical and pharmacogenetic solutions.” (Efstathiou and Mirmalek, idem)

Different groups of experts tend to see things through the lenses of their own field of expertise, and sometimes ignoring different perspectives. Each group might think to hold the right perspective, rather than one among several. However, the very fact that they all ideally sit together trying to solve a problem called ‘racial health disparities’ suggests that there is a shared starting point for inquiry – an issue for which negotiating a solution that might take into account the different sources of expertise is a worthwhile pursuit.

A useful way to try to resolve differences is to understand and agree on the use of terminology. In this case, do social science health professionals and bioscience experts mean the same thing by ‘race’? The category of ‘race’ is used to classify people according to their physical features (facial attributes, skin colour, hair texture etc.), ancestry (referring to one's parents, parents' parents, etc.), and geographic origin (in particular in relation to continents, i.e. Asia, Africa, America or Europe). Even if the category of ‘race’ is controversial, it is used across disciplines to draw out questions on social justice and health. Some scientists use ‘race’ to study how physical features, ancestry and geographic origin matter for socio-economic phenomena, such as education, financial or social achievement, legal rights and benefits, etc. Bioscience experts use ‘race’ to think about how the same aspects of race relate to biomedical phenomena, such as disease-associated phenotype or genotype, evolutionary process, etc.<sup>3</sup>

Interdisciplinary science need not negate context-specific understandings. It makes differences meet on some common ground. The problem though becomes how to find a common ground, i.e. how disciplines can communicate with each other without talking at cross purposes.

### ***How working together becomes possible?***

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<sup>3</sup> Another example of a widely debated social object of inquiry is that of ‘well-being’.<sup>3</sup> When we use the expression ‘well being’ to refer to the happiness of a nation, do we refer to the same concept that we use when we talk of the ‘well-being’ of, say, children or of the aged? In measuring ‘well-being’ different disciplines (psychological sciences, development economics, gerontology and medicine) purportedly ‘measure’ different things. See Alexandrova (2017).

Coming from different disciplinary backgrounds, practicing different styles of research, and adopting conflicting work cultures turn communication into a big issue:

“communication involves the integration of two or more disciplinary languages with the aim of generating a common understanding” (Holbrook 2013, p. 1869)

Communication is an action, and integration is its driving force. But integration (in the sense of ‘uniting’ or ‘combining’ into a unified system) does not entail achieving an outcome of sameness.

We still need to preserve differences and capitalize on their contribution to overall understanding. How can differences be integrated without losing their input? Besides, differences are sometimes radical (incommensurably so), and integrating perspectives becomes a difficult if not impossible task to achieve. And yet it is often because of the limited resources of one tradition of research, or of one discipline, that we need to look outside the borderlines of a single discipline – in order for example to solve some problem, which a disciplinary paradigm might not be well equipped to handle.<sup>4</sup> This does not mean necessarily the end of cooperative research, but researchers from different paradigms encounter the problem of searching for ways that allow them to communicate. In the practice of research, they often develop further special languages through day-to-day exchanges or negotiations among discipline-specific terminologies, ending into project-specific or other context-specific vocabularies. Here a further metaphor, used by Galison (1997), becomes a useful aid to imagination: the expression ‘trading zones’. Literally it refers to real situations in which different peoples are able to exchange goods, despite differences in their language and their culture. Metaphorically it points at how scientists from different paradigms and different communities can find a way to collaborate/coordinate with each other despite their differences, and to exchange knowledge across disciplinary boundaries. Developing new languages and new ideas in interdisciplinary settings demonstrates the need for finding wider systems of understanding and effective tools for making communication among disciplines and fields of enquiry a realistic and desirable outcome.

### **Philosophy: applied or engaged?**

Where does applied philosophy locate itself vis a vis a backdrop of interdisciplinary research? First of all, we need to understand what ‘applied’ means, and what it entails, when referred to philosophy. There are several conceptions of what applied philosophy is, as there are different views about what philosophy can apply to. (Lippert-Rasmussen 2016 distinguishes among seven senses of ‘applied’) A conception that suits the types of issues we have been discussing in this paper goes under the name of ‘relevance conception.’ Leslie Stevenson put forward this view in his (1970) article, which interestingly takes its cue from an insightful quotation from Wittgenstein:

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<sup>4</sup> This is the classic situation that T. Kuhn describes when anomalies arise in the context of a scientific paradigm and the resources of normal science show their limits in solving arising challenges. As is well known, Kuhn denies that the situation can be handled in cooperative ways among paradigms, and the only response is a crisis that ends up in a scientific revolution.

“What is the use of studying philosophy if all that it does for you is to enable you to talk with some plausibility about some abstruse question of logic, etc. and if it does not improve your thinking about the important questions of everyday life ...?” (Wittgenstein quoted in Stevenson 1970, p.258)

By applied philosophy, Stevenson means philosophy that is ‘relevant’ to questions of everyday life, ranging from “existential ones such as why death is bad to political questions such as what we should do about global warming.” (Lippert-Rasmussen 2016, p.4) But being relevant in this case does not only imply taking certain topics into account and turning them into ‘philosophical objects’ of inquiry. Relevance entails *sensitivity* towards these topics – non just in the sense of ‘caring’ about them, but in the sense of the willingness to adjust philosophical conceptualisation and argument to the epistemic (and non epistemic) needs of the topics addressed as relevant. And here some of the lessons learnt from the analysis of interdisciplinary research become useful.

First, making a topic relevant to philosophical investigation does not mean analysing it in exclusively philosophical terms, but making it fruitfully interact with all the disciplines and domains of inquiry, which might also prove relevant to understanding it. Relevant objects of inquiry are boundary objects precisely in this sense. Secondly, in order to acknowledge interaction, disciplines must be prepared to change, modify, adapt their conceptual and methodological apparatus and meet the epistemic (and non epistemic) needs of the topic under investigation. The field of inquiry becomes a ‘trading zone’ where communication is made possible by not only making different domains of expertise available to the general understanding but by actively embedding them with the issues raised by the topics from within their contexts of investigation.

When philosophy applies to socially relevant contexts it cannot just be plainly ‘applied’. It should ‘engage’ with those contexts and accept the challenge of being transformed in the process.<sup>5</sup> To illustrate what is here suggested I will use an example from my own field of expertise – the philosophy of science.

### **Evidence and evidence for use**

The topic of evidence is one of the most discussed in philosophy of science. Scientific evidence is taken to be that body of factual information able to support and justify a belief concerning the truth of some conjecture. It is not enough to imagine how things might be. Even if it makes much sense to imagine or conjecture that things are a certain way, we need to be able to prove that they are that way, that we are right in explaining them in a certain way. This is what distinguishes knowledge from fiction.

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<sup>5</sup> For an interesting analysis of the idea of ‘engagement’ see Douglas (2010).

To establish whether a hypothesis is true, credible, trustworthy, in science we proceed by looking at a pool of data and empirical reasons that function as evidence for the hypothesis under scrutiny (evidence that can confirm or disconfirm it). To say that a result is acceptable in science is at the same time saying that it is supported by adequate *evidence*, that it is justified by facts that are at the same time true and relevant.

The philosophical concept of evidence is normally described in probabilistic terms. Philosophical theories of evidence focus on the probabilistic relations between evidence and hypothesis. For example, many accounts demand that, for *e* to be evidence for a hypothesis *h*, *e* should increase the probability of *h*:  $P(h/e) > P(h/\neg e)$ . In other words, probabilistic theories of evidence strive to attach degrees of certainty to a piece of evidence, ensuring – by so doing – that evidence, as they define it, does what it is supposed to do, i.e. providing grounds for belief in *h*.<sup>6</sup>

To ensure that evidence does its job properly and accurately, traditional philosophical theories mainly focus on issues of truth (namely, the reliability of the empirical facts used as evidence), as well as of quality (the question of how good as evidence a piece of information is in supporting a certain hypothesis, and of how good or better the hypothesis is because of the evidence), and of efficacy (how good evidence is under ideal or controlled circumstances, e.g. an experiment or a trial). However, if philosophical theories of evidence are asked to assess the role and value of evidence in a practical context such as that of, say, the formulation of a policy, the order of priorities might dramatically change, and these theories – as we know them – might not be of real help. First, in policy making we already know that evidence for a policy conclusion should make the conclusion probable. But if evidence is to make a policy conclusion (or recommendation) probable, what needs to be established beforehand is, for example, *what kinds* of facts are needed for making the conclusion probable; what makes these facts *relevant* to the conclusion they are meant to support; how these facts *combine* with a whole array of other facts and factors brought forward by the circumstances addressed by the policy in question; etc.

Second, the purpose of producing evidence is indeed to support the acceptance (or rejection) of a hypothesis with (high) probability. However, in practical contexts, we often find ourselves making decisions before such probability can be provided, or even when such probability is unforeseeable (there are contexts in which only evidence produced in a less than rigorous way might be available). Arguably, in such contexts (and often policy contexts are of that kind) non-conclusive and less than rigorous evidence might be better than no evidence at all. Even if we cannot do the job perfectly, there is still a job to be done. Value judgements might for example enter in deciding whether some evidence is to be used, and how to use it. (Douglas 2010; Montuschi 2017) They might also help in accepting ‘new evidence’, evidence which – though not yet well established at a particular time – might still ‘speak in favour of or against’ a certain conclusion. This does not necessarily downplay the role that evidence has in making the decision, but it does require that we rethink the way in which that role is played.

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<sup>6</sup> For a discussion of these issues see Cartwright et al. (2007), and Montuschi (2009).

Third, whether or not an intervention can work under ideal conditions (e.g. within the boundaries of a 'randomised control trial') is no guarantee that the same intervention would or would not work in a real-world type of situation. Conversely, whether or not an intervention is effective in the real world might depend on reasons and/or conditions other than those which makes it work in the ideal situation. This means that what needs to be addressed is how, and whether, such a transition from the ideal to the real can be made, and what (if anything) makes it possible.

Finally, in practical contexts rarely only one piece of evidence can be conclusive, even when this is produced by following so-called 'golden rules'. Evidence brought to the fore by the best methods (in a sense of 'best' normally qualified in terms of rigour, formal consistency, etc.) is not necessarily best evidence, let alone the only relevant evidence. A typical illustration is legal evidence. Legal cases involve a rich mass of evidence of various and different types. Most evidence will be unquantified, and at times it may be hard even to determine precisely, what the evidence is (e.g. a witness's demeanor). But even in cases where quantified evidence is involved (e.g. DNA match probabilities in criminal cases), this must be weighed against and combined with qualitative, 'softer' evidence. The final verdict ought then to take into account different types and sources of evidence, and be issued 'on balance'.

'On balance' is an important but tricky connotation. On the one side, it alerts us to the necessity of not excluding evidence, which might, despite the way in which it is formulated, prove relevant to assessing a certain hypothesis. On the other side, it brings up the problem of how the balance of evidence is to be pursued. Combining pieces of evidence is not automatic, nor simple. It must be method-driven. But what methods of combination are to be used? Aggregation? Bayesian nets? Literature reviews? The choice is vast, and yet none of these methods might on their own capture exhaustively the type of 'balanced' combination we are after in particular contexts.

Ultimately, when we evaluate evidence from the point of view of its use in practical contexts, a whole series of issues are brought to specific philosophical attention:

- 1) *relevance over quality* (it is questioned how a certain piece of information becomes/proves to be evidence of a certain hypothesis, before dealing with the question of how good that evidence is).
- 2) *effectiveness as distinct from efficacy* (it is questioned how, and how well, an acquired piece of evidence 'travels' from the ideal/artificial settings of, say, an experiment, to a practical/wider/relatively uncontrolled or open context).
- 3) *uncertainty of evidence vis a vis degrees of certainty* (a wider array of methods for acquiring evidence is to be taken into account than only those which purportedly secure evidence by virtue of the very way they are designed; and not all the methods to be included as potential sources of evidence are able to guarantee their conclusions, that is to make conclusions certain).
- 4) *combination of different sources of evidence rather than golden rules* (what counts as evidence is ultimately a judgement reached 'on balance', by weighing and comparing the different and differential pieces of information which bear on a certain result, rather than

simply what a method that ‘works best’ suggests as being ‘best evidence’, or best ‘aggregated’ evidence).

It is then part of the same questioning to reflect on and explain why in a context of use relevance needs to be assessed in advance of truth (what facts actually speak in favour of a policy), that efficacy is no guarantee of effectiveness (the internal validity of a method does not automatically mean that the same method is valid externally, that its conclusions can be generalized), that uncertainty is not necessarily a deterrent against the use of evidence (non-conclusive evidence has a role to play in practice), or how a combination of different sources of evidence to support a policy might be a better bet (though difficult and problematic to articulate) than the use of a ‘golden rule’ method.

Paying attention to these features of evidence (relevance, effectiveness, uncertainty, combination) is precisely where the question of use, and of practical application, imposes due readjustments on a philosophical analysis of the concept of evidence, and requires at the same time that this analysis interacts with all those domains of expertise related to the different potential sources of information. There is more to evidence than believable facts, artificially controlled question-setting, and ideally designed methods or aggregated data collection. Evidence is itself a boundary object that requires appropriate understanding.

Specific issues concerning background assumptions, context and application all come to the fore in view of redefining the borderlines of assessment and evaluation for a concept that might be of real use in practice. Philosophy can help in practice, if it is able to take interdisciplinarity in the direction of ‘engagement’ illustrated so far. And understanding its role becomes a shared task for all those who are involved in making decisions on the basis of socially relevant knowledge.

### **A brief epilogue**

To go back to where we started, I conclude with Williams’ words again:

“The Humanities are concerned with a truthful understanding of what we are and where we have come from, and they, above all, demand a truthful understanding of themselves, and hence a truthful justification of their value. Moreover, society itself and those who are trying to run it also need those understandings. For it is only those understandings that can issue in reasoned demands for change, and the alternative to reasoned change is, as always, not no change, but unreasoned change, which will destroy not only the Humanities but the society that forgets about them”. (Williams 1987, p.189)

It is the core of the argument supported in this paper that philosophy in its applied and engaged version is part and parcel of this demand for reasoned change.

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