Colloquium: New Philologies · Vol 4, No 1 (2019) doi:10.23963/cnp.2019.4.1.1

Can the Social Relevance of Research be Evaluated?

An Editorial Introduction

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In the summer of 2014 a colleague of mine working at a prestigious American university at the time sent me an excited email telling me how one of the chapters from his book has been cited in a well-known and widely-read daily newspaper in an article about current US political situation. A few months later, we actually had a telephone conversation where I had to congratulate him on the fact that the same section from his book made it to be referenced in one very popular political show on national television. This was of such importance to his institution that he was bestowed several honors in the subsequent two years (he also ended up appearing in several TV shows as an analyst), all due to the fact that he managed to move his research beyond the confines of academic discourse and on the 'coffee tables of America'. The respect and prestige of scientist who manage to actually engage the general public in the USA (and other parts of the anglophone world) is seen evident in the likes of Carl Sagan, Neil deGrasse Tyson, David Crystal, Richard Dawkins, and many other household names. However, when we look at both informal and formal quality perception of academic work within the frameworks of most European countries, we can see that the 'Science to Public' mode of output is hardly valued at all; all focus being put on 'Science to Science'. Two questions arise from these two diverging views on significance of research outputs, and answering them successfully will

give us first guidance for addressing the issue of whether social relevance and impact can be evaluated and how:

a) Why is successfully reaching the general public with ones (often obscure) research less valued in some academic frameworks than in others?
b) What it is in the first place that can be considered as socially relevant in one's academic endeavour and research results?

Public perception of science

The global popularity of books such as the *Brief History of Time* by Stephen Hawking, the *Selfish Gene* by Richard Dawkins, or *How Language Works* by David Crystal illustrates the fact that there is great interest in the public to learn more about the scientific developments in different areas (widely ranging from physics, to history, biology, and anthropology), or rather about what science has to say about different topics that may hold their interests (a fact further underlined by similar popularity of science-popular documentaries and TV shows). In fact, all of the books I just mentioned are global bestsellers, firmly set on many must-read top 100 lists. What we must note about almost all of them is that they come (with very few exceptions) from the English-speaking world (most notably from the USA and, to a lesser extent, from the UK). Now, while there is something to an argument that they have been written in English and hence find an international audience more easily, in this day and age when most academics produce most of their work in English anyway, this is not the main reason why we do not find similar scientific bestsellers nationally or internationally in most of Europe and other parts of the world. The reasons for this should be sought in the academic traditions (intellectual styles) of the anglophone world on one side and Europe on the other, reflected in how academicians have been presenting their work in writing.

Attributed most probably apocryphally to Albert Einstein, the statement 'If you can't explain it simply, you don't understand it well enough.' perfectly reflects the conceptualization of academic output found in the English scientific tradition as opposed to the German, French, Asian, or Slavic scientific publications. Einstein's own writing, it seems, did not reflect this adage. If we examine his own publications, especially in the early years of his career, we can find all of the hallmarks of what we could consider 'complicated' writing style: long winding sentences, impenetrable academic jargon, assumptions at significant related academic background of the reader, and more. Looking at fields of academia other than hard (natural) sciences, the writing style becomes even more haughty, as delving into any philosophical text written in Russian or French can attest to. An opposite situation can be found in the anglophone world, where simplicity of expression characterized by linguistic and thematic transparency is the major guiding principle. These differences in written presentation of academic work derive from what Johan Galtung described as intellectual styles, listing broadly the 'Saxon', the 'Teutonic', the 'Gallic' and the 'Nipponic' style, to which we should add a 'Slavic' style as well. In a nutshell, the Saxonic intellectual style is characterized by focus on data, poor reference to theory formation, engaging in dialogue with the readers, and a desire for a clear-cut presentation. The Gallic intellectual style, as perhaps the polar opposite, can be seen focusing too much on linguistic artistry, while the Teutonic intellectual style focuses predominantly on fundamentals of theory and a strongly elitist point of view, with academic knowledge passed among 'masters' in a closed community. The Nipponic style is characterized by a heavy recourse to preceding academic work and suffers from wordiness, similar to the Gallic style, while the Slavic intellectual style borrows heavily on one side from the Teutonic one in terms of writing exclusively for other professionals and on the other from the Gallic style in terms of the emphasis it puts on the linguistic virtuosity of presentation. The

historical reasons for such developments are not hard to understand. The very different, non-dogmatic, attitudes of the English monarchy, and more importantly, of the Church of England, towards literacy, academic discovery, and entrepreneurship led to a significantly more democratic and publicly (economically) applicable scientific work which reflected, as one strong socio-cultural condition, onto the way in which academic work was reported. It was meant to be read by (educated) non-professionals, it found practical (and often entrepreneurial) application, it was written in English early on (as opposed to Latin), and hence it never retained the complex appearance the more elitist, closed scientific practice in Europe have displayed. This not only echoed in the manner in which scientific innovation arose and was made applicable in the UK and, by extension, in the USA, in the last few centuries (making the two countries drivers of academic advancement), but it also transferred into how the general public perceived and consumed their scientific work. Not only was the manner in which the work was reported simplified and made approachable and debatable to non-experts, scientific achievements got to be celebrated as markers of progress and economic and political power and prosperity. Naturalists and explorers were celebrated as heroes, archaeologists became superstars, physicists became rich entrepreneurs, and the academic study became a matter of every-day 'coffee table' talk. The ivory tower attitude towards science in the rest of the Europe and the world, obsessed with titles and prestige and influenced by varying political traditions and events, never made the leap towards the practicality and the public perception of socio-economic value of science as the driving force of academic recognition, not even to this day (as the comparative amount of scientific development coming out of the USA in particular can testify to). Therefore, the answer to our question of why is it that reaching the general public with one's scientific results is much more appreciated in the anglophone (Saxon) academic world

than in Europe and most elsewhere, lies in the different socio-historical and linguistic development of the intellectual styles in the given regions which were a clear result of the more practically recognized value of science first in the UK and then later on in the USA as well.

What makes research socially relevant

Over the last several decades, as the questions regarding the financing of academia came into the public eye more and more, the question why a particular avenue of research (or even an entire research field) is being funded from the public budget has gained wider prominence and sparked a vigorous debate. Many papers, books, and reports have been written on the subject of why one particular research agenda is to be considered relevant for the society, with the general conclusion being that it is to be deemed as so if it helps answer some of the existing societal needs. Leaving aside the fact that many scientific developments create needs and open up avenues that did not exist beforehand and that certain needs are not practically communicable nor fulfillable (such as for example cultural development or political enlightenment), the studies go on to suggest that we can have social relevance in one of three ways:

a) developments contributing in a palpable socio-economic manner (such as technological innovation, medical advancements, and policy changes);
b) developments contributing indirectly to the change of the social fabric of society (such as sociological or economic research used as agenda setting tools by the media or political establishments); and most rarely
c) developments contributing directly to the change of the social fabric (such as popular scientific publication directly being read by the non-professional public).

The first type of relevance, economy-related one, is perhaps the easiest to explain as it has the most practical instantiations of social relevance. The knowledge generated by academic research is diluted into services or products that directly influence (benefit) the society. It is not only the easiest dimension of social relevance to measure but it is also the easiest to communicate. For instance, in the cases of technological developments the academic results are not, in fact, being presented to the general public, but to another group of professionals, either from a related field or from the business sphere in general (who are at least superficially familiar with the topic at hand). They are the ones who need to be receptive to the message as they turn it into an applicable use further on. The manner of evaluating the direct impact of research then become relatively simple, as the number of patents set up, number of academia-to-business start-ups, and similar (mostly economic) indicators testifying credibly to that fact. Medical advancements are similar in nature – firstly, they are matter-of-factly accepted by the public when they are publicly communicated (as in 'there is a new cure for x') and are also measurable in terms of economic factors related to medicaments sold or procedures applied (not to say in terms of lives saved as well). We can also make such a case for policy changes. This kind of relevance has traditionally been the backbone of the recognition of importance of science in the anglophone world and has in the last several decades become so worldwide as well. However, while it did have time to influence the perception of scientific achievement in some less practical research areas in the UK and the USA, the recognized practical importance of academia has not had the same opportunity to foster wide-spread general recognition of other field in Europe in a parallel manner.

As mentioned previously, being in a position to consult or to be referred to in the general (popular) media is in places such the US regarded as a major academic achievement. This is understood as one

successfully communicating one's ideas to the extent that one is recognized as an expert and by referring to her or him the media who recognize her or him as someone who is worthy of using to form the public's opinion regarding the topic at hand. Whether it is the case of politics, economic crises, ecological sustainability, or astrophysics, American newspapers and television shows are full of opinion pieces, consultants, analysts, and correspondents from the ranks of academia. This kind of social presence epitomises the more indirect form of non-practical (in terms of services or products) social influence of science. If we consider the impact and popularity the widely reported economic theories or ecological predictions had, or the interest archaeological or genetic research often finds when featured in the media, it is easy to see how academic work carries social relevance in this sense.

Finally, as the rarest of all possible ways of impacting society and exerting social relevance, we have the direct non-practical consummation of research by the wider public. And while in some sense it should be counted as the highest achievement one can imagine coming out of one's work, it is surprisingly little rewarded in terms of career value for scientists in most academic frameworks other than the anglophone ones. While academia-to-business and medical developments have an unrivalled career value (higher perhaps than 'Science to Science' publication), and while being referred to in the popular media can have at least beneficial effect to one's CV (or one's bank account), giving a science-related public talk to people other than your profession or publishing a science-related book widely popular among the general readership is usually valued very poorly in terms of academic advancement. And yet, achieving public acclaim and interest in one's academic work is the hardest one to achieve and can have the most palpable and long-lasting societal impact. Overcoming the barriers of the topic one is researching and the metalanguage and writing style one is normally publishing in, and speaking directly to the every-day reader is an extremely difficult endeavour for a scientist. It is much easier to convince

a group of mathematicians that you deserve a Nobel prize than a group of lay people, for obvious reasons. And if we consider the impact books such as *Capitalism* by Carl Marx or *On the Origins of Species* by Charles Darwin made directly und unmediated by either practical instantiations of media translation, it is clear how such direct dilution of science to non-professional readers holds so much power.

What can be distilled from this discussion is that if we are to attempt to evaluate the relevance of scientific research we must look at its potential practical (service/product/policy) application, its penetration through general (popular) media, and its direct interaction with any lay public. What can also be distilled from this discussion is that there is immense social relevance to be highlighted in scientific endeavour, whether we can successfully measure it or not. This is precisely the focus of this special issue – to try and illuminate various aspect of knowledge transfer and means of illuminating the general importance of research.