The socially just engineer and social entrepreneurship – the case of Waste-for-Life, Argentina

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***Abstract**:*

In this paper, the authors develop both academic and broader social recognition of modes of social innovation and values-based action for engineering practice that may have close affinities with social entrepreneurship. The notion of social innovation predates the more recent conceptual and social development of social entrepreneurship (this should not be confused with the post-hoc re-descriptions of social entrepreneurs and social entrepreneurship), and it is interesting that Illich should develop his understanding of social innovation early on, amidst concern about technology and in the context of Latin America. 'Waste for Life' is a real attempt to enact socially just engineering with co-operatives in Buenos Aires. However it is still fraught with difficulties, this paper considers the Socially Just Engineer potentially joining the Social Entrepreneur as radical characters in late modernity. One way of developing a socially just mindset in engineering students might be to expose students to the wealth of knowledge in the social entrepreneurship arena.

Introduction

There has been much recent discussion about the need to develop engineering student's knowledge and skills to enable them to be more socially just in their practice (Baillie and Catalano, 2009). Barriers to this potential are profound. Gramsci noted the resistance to such developments in other contexts were cultural as well as structural. He calls the common sense or dominant way of seeing/understanding the world within a given community of practice 'hegemony':

'[It] is not a single unique conception, identical in time and space. [...] Its most fundamental characteristic is that it is a conception which, even in the brain of one individual, is fragmentary, incoherent and inconsequential, in conformity with the social and cultural position of those masses whose philosophy it is.'(Gramsci 1971, p. 419)

Hegemony is therefore 'a process of social control that is carried out through the moral and intellectual leadership of a dominant socio-cultural class over subordinate groups' (Darder, Baltodano and Torres 2009 p. 12). Engineers from the North working to 'develop' communities from the South fit within this problematic. Developing the sensibility of students in service learning projects to critique and construct alternatives is a key challenge. Coming from the hegemony of engineering practice, it is even harder. In this paper, the authors attempt

to consider the idea of a socially just engineer as a counter hegemonic imperative and work to exemplify connections with the similar debates arising within the arena of social entrepreneurship.

Needs or Wants: Engineering in the Service of Society

'Underdevelopment as a form of consciousness is an extreme result of what we call in the language of both Marx and Freud *Verdinglichung*, or reification. By reification I mean the hardening of perception of real needs into the demand for mass produced products. I mean the translation of thirst into a need for a Coke. This kind of reification occurs in the manipulation of human needs by vast bureaucratic organisations which have succeeded in dominating the imagination of potential consumers.' (Illich, 1974, p. 136)

We can imagine Illich giving a resigned sigh on hearing that, in the decade after his death, Coca Cola created great controversy through its production processes undermining an Indian community's access to fresh water. So, far too often, there are much more direct impacts of multi-national corporations on basic needs than that on consciousness. However, this is not to say that the manipulation of consumer consciousness has not progressed to new levels of sophistication. For example, given the ready access of many in the West to water, quite literally 'on tap', the idea that there might be a large market in bottled water in that same area may seem incredulous - but such there is. The power of 'brands' and its problematizing came strongly into focus at the beginning of the 21st century (Klein, 2001) though the roots of this development go back past Illich to the 1950s at least (Packard, 1984). Thus, the technology of marketing and advertising itself has been part of the growth of a more 'advanced' consumer culture, and so the relationship between goods and need has become ever more mystified. On the one hand, human need is not entirely transparent and such mystery forms the basis for mystification; yet all this might mean is that, even including basics like water, food and shelter, human need is a complexity that can be addressed in lesser and greater degrees in worse or better ways – but which in any sense should not be equated with the supply of either particular consumer products or state services. Perhaps, then, the 'classic' notion of human 'flourishing' would be particularly helpful here, bearing in mind that this in turn may be related to the flourishing of other life, and that which or what flourishing, is of particular interest to whom, why and when, remains a set of problems that needs to be answered.

Technology would seem to have something to offer towards the flourishing of humanity, and more broadly, to the flourishing of life on earth. Engineers, certainly, feel as if they are at the service of society's needs. However, engineering can be said to be at the service of any hegemonic system. The problem comes when this system conflicts with basic human rights and flourishing. Following the rise of the social entrepreneur (Leadbeater, 1997) we might call for the rise of the socially just engineer in order to redress the balance of working towards the needs of all of society, not just those in power, and be a moral and cultural object of regard to engineering students. Next, let us give a bit of background on the idea of 'character', and then the particular character to which the contemporary socially just engineer may have an affinity – the social entrepreneur.

Character and the Social Entrepreneur

In recent times much attention has been given to MacIntyre's concept of 'practice', which was first presented in his seminal work on moral theory *After Virtue* (MacIntyre, 1985) and indeed that might be of interest in later investigation in this area, but a concept that was presented at the same time that captured earlier interest was that of *character* –

> A character is an object of regard by the members of the culture generally or some significant segment of them. He [the character] furnishes them with a moral ideal. Hence the demand is that, in this kind of case, role and personality are fused. Social type and psychological type are required to coincide. The character morally legitimises a mode of social existence. (MacIntyre, 1985, p. 29)

The label 'Social Entrepreneur' is a concept born of the late 20th century, but still one that actors of these particular historic times might have recognised themselves. However, as with most if not all areas that have attracted scholarly investigation, there is debate over the history of its development. Drayton (2006), for example, suggests there were passing 'islands' of social entrepreneurship in the 19th century, such as Florence Nightingale and the Anti-slavery movement, but that little really happened substantively until 1980. While many would concede that the development and consolidation of Western welfare/public enterprise states during the mid-two quarters of the 20th century meant the path of socialisation (e.g. social ownership, social justice, social sensitivity to need - Tawney, 1921; Fromm, 1991) took that of nationalisation, with lesser and greater degrees of separation from the economic base, the 'space' for social entrepreneurship, even in these developing and consolidating welfare states, was present – and more arguably present in many non-Western, non-Eastern Bloc countries. As Spear (2005) suggests, social enterprise and social entrepreneurship develop in areas of market and state failure. *A social need, problem, issue, or injustice can be seen as an opportunity to innovate some sort of sustainable response*. What therefore amounted to market and state failure, in the UK as a good example, were mental health, drug and alcohol misuse, and domestic violence, where 'social entrepreneurs' such as R.D. Laing, Eric Blakeborough and Erin Pizzey (respectively) made their mark, still decades away before the term 'social entrepreneur' came into existence (Foster, 2008). These social entrepreneurs would easily have identified with social innovation as understood by Illich (1974), seeking alternatives to social problems to those offered, defined or ignored by self-interested professionals acting as oppressive agents for the state and large corporations; in terms of contemporary debate, if coming from a US perspective, emphasis upon social innovation continues as one 'school' of thought on social entrepreneurship. Further, with the retraction of welfare states in the West and elsewhere, greater space is created for radical interventions which are neither for private profit and are non-state based – an alternative path of socialisation.

What is missed out by analyses such as Foster (2008) is focus much closer to the economically productive base, such as that occupied by co-operatives, what might be called 'socially useful production' (Collective Design/Projects, 1985), and relatedly, areas like alternative energy and technology. It is perhaps not surprising, given the relatively recent arrival of 'social entrepreneurship' and 'social enterprise' as specifically adopted labels, and the equivalent youth of its related research community, that much debate still exists around its key conceptions. So that (social entrepreneurship), and those (social enterprises) that are closer to the economic base might be defined by Defourney and Nyssens (2010) as from the 'earned-income' school of social entrepreneurship/ enterprise research; they suggest for example Nicholls (2008) as saying 'social enterprise' should be applied only to organisations fully self-funded (Defourney and Nyssens, 2010, p. 41), by which they seem to mean are funded solely by trading income (and trade that is usually more than just barter or LETS, i.e. non-monetary trade). Defourney and Nyssens (2010) have concerns about some of the UK and US 'Earned-Income' conceptions being inclusive of, on the one hand, those organisations that merely wish to commercialise or 'business up' their charity profile, but on the other, those businesses who have 'social purpose' but are otherwise market orientated. Such a Euro-centric approach may misunderstand certain sorts of social enterprise whose partial aim is contributing to a new socialising of the market; perhaps they have confused 'socially responsible' businesses with organisations that clearly want to have built in *social mission*.

Given that investigation into social entrepreneurship and social enterprise remains underdeveloped, it may not be surprising that some relevant strands to its history, but also its potential future may not have been picked up as yet. Technology and engineering may be one part of that story, though equally, social entrepreneurship and social enterprise may have a part to play in whole new chapter in the story of their development. And morally, socially, culturally, and educationally we might come to ask as to whether there may be a socially just engineer as character, who we might come to regard?

The Socially Just Engineer: The Lost Roots (and Reputation) of Earlier Engineering Characters

Although he does not elaborate at all on the claim, it is interesting to note that Macintyre (1985) includes amongst his 19th century characters, that of 'The Engineer', so we perhaps have some sense of there being a cultural history of engineers being of some moral influence, even in some significant part – though frustratingly there is no more such a sense. Yet it is very possible that particular sort of Engineer of the time, at least (e.g. William George Armstrong, Isambard Kingdom Brunel, etc.) would not only recognise themselves as Engineers but that others might have looked to them with some moral regard. However, various applications of engineering have brought it into disrepute, such as in the Nazi concentration camps, etc, but even the label 'social engineering' fails to bring relief, again because of its echoes back to the Holocaust, but also because of the continued and controversial claims by certain psychologists (Eysenck, 1969), with his designs on a society managed by scientific experts. For that reason, we speak here of the *socially just engineer*, who can become an object of regard and aspiration for up and coming engineering students.

Waste for Life: A Case of Socially Just Engineering

If we are to imagine that the socially just engineer can exist and that they might be similar in character to the social entrepreneur (at least in some sense), then we need to consider a case of real engineering where an attempt was made to enhance justice in the world. The lead author of this paper (name removed for reviewing purposes) founded 'Waste for Life' (wasteforlife.org) in 2006. The informal network is based on research on 'upcycling' waste to create strong 'composite' products of waste plastic and fibre. The informal recovery of materials from waste is known to be an important survival strategy for marginalized groups in developing countries. It is estimated that 2% of the population of Latin America and Asia earn their living as waste-pickers (Parizeau 2006). Most of the recycling waste that is collected is sold directly to agents or middlemen, though some more organized cooperatives separate, sort, and sell the materials directly to industry. Income generated by the cooperatives is generally higher than what individual cartoneros gain, though in Buenos Aires, it is still 34% below the official 2007 government poverty line of $914 pesos (US$245) per month (Schamber and Suarez, 2007). As Medina points out, "low incomes can be explained by the low prices paid by middlemen."(Medina, 2005, p25). He also maintains that "community based systems take advantage of the creativity and entrepreneurial abilities of individuals who are familiar with their communities, with the surrounding environmental and the opportunities it offers to them." (Medina, 2005, p5). 'Waste for Life' was born of the potential for waste scavengers to move directly to market, by recycling and creating their own products to sell.

In 2007 a team of Waste for Life members, visited Buenos Aires to conduct a needs assessment to ascertain if waste recycling might be a welcomed as a potential source of additional income for the street waste scavengers. Waste for Life conducted a six month needs assessment, in dialogue with nine cooperatives and all other major local stakeholders. This was followed by a three year feasibility plan which included research and development with local and distributed partners. Waste for Life Buenos Aires is about to launch its first program of work. However the feasibility plan has highlighted the following areas for critical examination:

1. *Key commitments of Waste for Life members*
2. *Is Waste for Life nothing more than a 'development' project, creating North/South dependencies?*
3. *Does Waste for life enhance local justice if it contributes to the wider causes of injustice and poverty?*
4. *Commodification and consumption*

The commitment is clear, the confusion is even clearer. To develop a way forward, the lead author has reached out to other areas, where counter hegemonic social justice occurs. This paper is an example of that author's attempt to locate socially just engineering practice in existing expertise. What can engineers learn from social entrepreneurship, in ways which are not solely in pursuit of profit?

Socially Just Engineering *and* Social Entrepreneurship as a Basis for Character? So?

It seems very reasonable to conclude that certain sorts of social entrepreneur and certain sorts of socially just engineer are not merely 'playing in the same ballpark', but sometimes actually on the same team – maybe even located in the same person. The clear commonality shared between the two is the concern for social justice, addressing social need, responding to social problems; how this is done may separate them. The social entrepreneur will be good at identifying need, problems, injustices in actual social contexts and innovating in response to them – yet the bounds of that innovation may be technological and engineering knowledge. Thus on the other side, someone with social justice commitments may be best at identifying this in more abstract contexts, but be highly technically knowledgeable to a degree that many social entrepreneurs can only dream of. Yet it is important to realise that there is no reason for the two to be separate, at least in the context of a team if not always one person.

In the case of Waste-for-Life, non-local socially just engineers might do well to engage with local social entrepreneurs as a way, indirectly perhaps, of the former engaging with post-colonial critique in living articulation. In any respect, there seems plenty of scope for different sorts of character, in MacIntyre's sense, to evolve. It is perhaps early days yet to see which of these characters will develop in the engineering context, but the potential, however it eventually emerges, or they eventually emerge, can only be for the good of social justice.

This paper is just the beginning. We hope, that through engineering education, students may be exposed to ways of thinking from both engineering and from social entrepreneurship, and to draw their own conclusions about a way forward. A future for socially just engineering lies with them.

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