

Evaluation of the waste of the world large grant

Executive summary

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Background

The Waste of the World Large Grant (WotW) comprised a five year programme of work (2006-11) and was composed of six interrelated projects that collectively sought to investigate, both empirically and theoretically, three aspects of global waste economies:

- global flows in end-of-life, or spent, goods and their connection to global recycling networks
- the creation of markets from end-of-life goods and materials recovery in the EU
- waste economies in the UK

Six component projects addressed these three aspects of global recycling in different sectors and contexts:

- recycling industry of ships: examined the implications of ships broken-up under different regulatory regimes (theme a)
- nuclear waste: examined the meaning of nuclear waste and its governance, particularly in relation to its international trade (theme c)
- steel: examined how steel production processes attempt to minimise and revalorise waste across the globe (theme b)
- food and drink: three linked PhD projects focused on coffee, wine and cheese (theme b)
- waste management technologies: explored the governance and innovation of waste technologies in the UK (theme c)
- used clothing: examined textile industries at the beginning of the production chain and the end of life processing of waste (theme a)

The grant was managed by a Principal Investigator, along with a Co-PI and six project leads made up the Programme Management Committee. The grant involved 16 early stage researchers. Each project engaged with a variety of non-academic actors and agencies throughout the research process in different ways from detailed work with policy makers and industry leaders to on-going mass public engagement through exhibitions and films that are still being shown around the globe. Quantifying the number of such 'users' across the overall project is therefore inherently problematic and only ever likely to be estimated. Users were both extensively and intensively engaged throughout the research process in appropriate ways and user engagement was clearly significant. Actual expenses amounted to £2,990,488.78 (therefore under-spending available funds by £246.24).

Evaluative methodology

The evaluation process had multiple facets. Interviews, both face-to-face and through various other means (email, telephone) were conducted with the PI, Co-PI and all other academic investigators (100per cent response rate). An on-line survey of researchers had a 73per cent response rate. All critical friends, including the Troika Chair, were contacted and invited to participate in different ways, depending on their expertise (some evaluating documents, others commenting on user engagement). All were invited to provide their evaluation of the project outputs and impact (56per cent response rate). An on-line survey of selected non-academic users who were directly engaged with the project had a 25per cent response rate. Documentary analysis included examination of ESRC documentation relating to the grant scheme, including project reports such as the initial proposal, referee comments and project team responses, annual reports, troika and progress meeting minutes, communications strategy and End of Award (EoA) Report. Expert academic review of the five nominated outputs was undertaken by 11 international experts. Destination and quality review of peer reviewed journal outputs was undertaken using Thomson Citation index.

Achievement of aims

The overarching aim of the WotW grant was to develop novel thinking about materiality within the social sciences through both cultural economy and political economy perspectives. This broad aim has been achieved comprehensively through a variety of interventions and outputs. Contributions to the cultural economy dimension, which extend thinking 'beyond the object', are evident through numerous publications drawing on the projects focused on ship breaking, steel and food and published in leading high impact journals and with internationally renowned publishing houses. Indeed, a number of these contributions have been award-winning. Contributions to the development of political economy perspectives on materiality (specifically drawing on ship breaking and used clothing) have been equally as successful in gaining a high academic profile through publication in leading journals. Two outputs from this perspective are included in the nominated outputs from the grant and both received wide acclaim from external reviewers as part of the evaluation process. This work has been particularly impressive in its ability to span both natural and social sciences in ways not seen before in the political economy literature. Overall, the WotW research, in its entirety, foregrounds the importance of thinking beyond commodity production to destruction and recovery processes. Again, in this regard published work from WotW has engaged at the highest level with audiences of leading journals to bring ideas to the fore which critique mainstream approaches to value and labour in relation to recycling, from nuclear waste to anaerobic digestion. In terms of advances in socio-spatial research the WotW project, particularly but not exclusively, through projects relating to used clothing and ship breaking, provided a useful counter to predominant foci on the flow of goods between the Global South and Global North, or the simplistic characterisation of the Global South as a dumping ground for end of life products.

Academic quality and achievements

The eventual trajectory of the research has been shaped, inevitably, by the participating researchers, both established and early stage, and their areas of expertise. It has also,

however, been shaped by the needs of, and engagements with, non-academic actors and organisations (detailed in the next section) in concert with often challenging and dynamic research and policy contexts. As a result, the successful completion of the project has not been without significant challenges, primarily due to staffing issues and the engagement with a number of high-risk arenas for research. Specifically, the five-year duration of the project is both a blessing and a burden with regard to staffing. Life often intervenes with such a long time period, making management of enduring projects complicated, but such lengthy projects are essential for the kind of exploratory, blue skies research that WotW conducted and the importance of such long-term projects should not be underestimated.

In terms of academic quality and achievements, in addition to the more than 50 journal articles detailed in the EoA Report, there have been numerous edited volumes and chapters emanating from the grant and related work is still being produced and published. Essentially, and in common with much academic research, the overall impact of the project will outlive the demarcated timeline of the funding and evaluation period. There is no uncontested metric for evaluating the impact and value of these outputs. In the social sciences the most accepted means of establishing influence is expert peer review, which was conducted in this evaluation via examination of the five nominated outputs selected by WotW to indicate the breadth and quality of the research. The overwhelming evaluation of nominated outputs by external reviewers has been positive, with certain papers rated as 'outstanding' or 'excellent', 'generating real theoretical invention', 'superb work', with 'impacts beyond the social science of waste'. The edited volume was identified by two reviewers as an 'excellent collection' and 'simply the best anthology or edited volume I have read on the subject of waste and recycling', with others identifying 'an exemplary mix of methodological innovation and empirical sophistication' within the outputs. Ultimately, the highest accolade was attributed to the project by a number of reviewers suggesting the project incorporated 'internationally leading scholarship' with 'outputs of the highest quality' such that the project has '...entirely transformed the field of waste and discard studies: it mobilised more disciplines, more methods, more geographical sites, and a wider range of issues than any previous collaborative effort on waste'.

In addition to expert peer review, it was deemed useful to examine the volume and destination of the peer reviewed journal articles as an indicator of achieving the stated aims in terms of interdisciplinary working and progression of debates within cultural economy and political economy fields. What is most astounding in the results of this process has been the breadth of publication from industry journals (eg textile, CIWM) to leading academic journals in anthropology, geography, economics, sociology, cultural studies, environmental studies and politics (as indicated by Thomson ISI Impact factors). In addition publications also targeted increasingly influential sub-disciplinary or trans-disciplinary areas where journals are yet to be recognised in ISI indices such as food ethics, science and technology studies, risk management, critical public health.

It is quite clear, as indicated above and in the extended evaluation report, that the academic quality of the WotW large grant has been consistently high, with achievements in excess of those envisaged in the original proposal for the most part. While there has been unevenness across the six projects (with the nuclear waste project falling short of expectations in terms of publication outputs due to staffing issues and the inherent difficulty of working with the highly sensitive nuclear industry), the quality of work across the board has been high and the

interrelated thematic structure of the project means that shortfalls in individual projects does not undermine the achievement of overall goals. It should also be noted that other sub-projects dramatically overachieved both in terms of academic and non-user engagement. While the capacity building dimensions of the project are clearly articulated by many of the early stage researchers in their survey responses and are demonstrated by the high level achievements of the funded investigators (with subsequent, related and highly prestigious grants being awarded by European Research Council and EPSRC amongst others), the project has stimulated academic development beyond the individuals directly funded by the grant, creating a 'heritage' effect that ensures the project continues to influence the trajectory of critical social science. The research has already travelled extensively and far beyond the walls of academia.

Non-academic impact and engagement

Non-academic engagement has been integral to WotW at every point of the research, across each project. There has been engagement with disadvantaged communities and school children, with CEOs of large multinationals and policy makers operating at the global, national and local scales, with photographers, industrialists, filmmakers and teachers. Essentially, the outputs of the WotW have been intimately co-produced and disseminated and continue to be so. In some cases there may not be explicit recognition of WotW's role or impact. For example, using waste as a means to aid communication and learning in schools has certainly travelled from the initial site of exploration stimulated by the WotW intervention, through networks to other teachers and schools across the country, but the WotW logo may no longer be foregrounded in that dissemination. The focus was on ideas and inspiration rather than branding. Equally, the cultural forms of dissemination adopted in the WotW (films, photographic exhibitions, interactive events) provide wide exposure to ideas and present provocative stimuli to wider audiences creating spaces for interaction and challenge. The film *Unravel*, for example, has its own life beyond WotW and has been shown at film festivals around the world to an unknown number of people (but it is likely to be hundreds of thousands already). *Unravel* received nominations for Toronto's short film award. These impacts are much more democratic and accessible than other forms of interaction with so-called 'users' of research that WotW also engaged in. High ranking offices in government ministries requested meetings with investigators to help form opinions for policy structures, which will not be attributed in the final policy drafting, while companies requested investigator expertise for commercially sensitive application that absolutely cannot be named because of its sensitivity. In each case the objectivity, independence and confidentiality of the researchers was being highly valued by these 'users'. Other events included bringing together multiple stakeholders from a range of governing spheres, from government departments and advisory bodies, to advocacy and special interest or community groups. Capturing the extent of interactive engagement such opportunities provide is inherently problematic. It is also simplistic to assume there is always a direct and immediate causal link between research and impacts. There is a need to understand the nuanced ways in which information flows to and from research over time. Nonetheless, the WotW demonstrates how high level engagement with a wide range of actors and institutions is not incompatible with top grade research. To date, all the signs available suggest that the work will have broad-reaching public benefit through its challenges to orthodoxies of knowledge and practice in the waste arena and beyond.

Management of the investment/funding scheme

During interviews PIs noted the excellent performance of the management group in meeting the challenges of co-ordinating a multi-site, multi-institutional and inter-disciplinary project. Certainly, examining the outputs from the project, the investment has clearly delivered beyond expectations in many respects. In particular, the key role played by the lead PI in providing both the administrative and intellectual glue for the grant was emphasised time and time again and this impact is clear in the spread of outputs from the grant. The majority of early stage researchers also specifically commented on the benefit of the collaborative exchanges and engagements across the WotW team that occurred on a regular basis during their employment on the grant. However, the management team reported difficulties in attracting appropriate support for the administration of the grant, such that in many cases the issues to be managed blurred the boundaries of research and administration. Research administration often requires expertise beyond purely secretarial skills in order to relieve researchers from administrative burdens. It was interesting to hear investigators in this grant identifying inflexibility in the academic system (having posts which are either academic or administrative) that no longer reflects the needs of contemporary research endeavours. In addition, perhaps as a result of the difficulty of placing the Large Grant status within the family of ESRC funding schemes, it was felt by members of the management team that the nature, extent and dynamism of reporting requirements placed an unnecessarily large administrative burden on the management team. Although procedural changes are in all likelihood inevitable across a five-year period (even six year given the lag between application and actual initiation of research projects), it must be recognised that such demands do create additional costs. Every attempt should be made by the funding body to minimise the additional cost burdens of such demands.

Future research/training priorities and areas for development

The WotW project addressed a considerable range of end of life processes and economies that function in quite different ways in a variety of locations. As such the project provides a solid foundation and justification for future work to be conducted in other end of life arenas in other locations (eg Africa and China). Future research and training priorities need to build on the foundations provided by WotW and extend these into new arenas and areas. However, the findings of the work also illustrate the need for additional areas of work to be considered, including:

- economies of new waste complexes and markets;
- the illegal geographies of material dismantling and flows;
- climate change, waste/energy and end-of-life actions.

Conclusions and recommendations

The overarching aim of the WotW grant, to develop novel thinking about materiality within the social sciences through both cultural economy and political economy perspectives in order to think 'beyond the object', has been achieved comprehensively through a variety of interventions and outputs. The academic quality of the WotW large grant has been consistently high, with achievements in excess of those envisaged in the original proposal, for the most part. The capacity building dimensions of the project are clearly articulated by

many of the early stage researchers in their survey responses and are demonstrated by the high level achievements of the funded investigators (with subsequent, related and highly prestigious grants being awarded by European Research Council and EPSRC amongst others). Through innovation visual and interactive installations the research has already travelled extensively and far beyond the walls of academia. Managing such large, multi-site, multi-disciplinary and enduring projects, is an inherently challenging academic and administrative exercise. Given these challenges the PMC made every effort to control for and cope with the wide range of staffing and administrative hurdles that emerged. As WotW was part of the first tranche of the Large Grant programme, some teething problems in terms of establishing consistent reporting requirements were reported. Nonetheless, and as detailed above, WotW was successful in achieving its overall aims and objectives despite the identified challenges in terms of management and administration. Overall, the WotW project was certainly high risk, as identified by the reviewers of the initial project proposal. Through careful management, the commitment of a number of leading investigators and many talented early researchers the WotW has produced high returns for conceptual and empirical progression within the social sciences in ways that go far beyond some limited notion of waste.

Recommendations include:

- review processes for managing administration of Large Grants
- attempt to streamline reporting whilst maintaining transparency and accountability
- Consider the provision of funds to cover the cost of enhancing, tracking and evaluating impact
- ensure that the WotW website content is migrated to an active archive (perhaps hosted by ESRC) in order not to maximise the potential for the on-going impact of the research in terms of on-going academic and non-academic communities
- develop clear definitions and guidelines relating to impact, to assist in its creation and evaluation
- ensure that definitions of impact are expansive and inclusive
- ensure benefits of investment are reaped by providing follow-on funding or scope for research findings to be extended