

# Articulating New Accountability Systems: Integrated Framework

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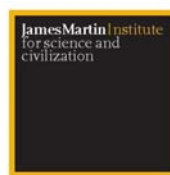
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# 1. Introduction

The ResIST project's objective is to understand processes that contribute to increases in inequalities *through* the role of Science and Technology, but also to understand processes that mitigate inequalities *through* Science and Technology. The enhanced role of Science and Technology in the global knowledge economy gives such understanding urgency.

The role of Work Package 3 is to identify and analyse the emergence and workings of accountability systems that provide for the explicit stating and framing of distributional issues related to the design, development and social appropriation of scientific and technological resources. Systems of accountability are the means by which the potential distributional consequences of science and policy and practices can be recognised and assessed – and potentially incorporated – by formal elements of the political system. Accountability systems attuned to the needs of the disadvantaged are thus the prerequisite for reorienting scientific governance towards greater social inclusion in building science and technology priorities and in distributing its products.

Accountability systems embody normative assumptions about the purposes and uses of science and technology. The boundaries between alternative systems and conventional policy and practice are an important site of contestation in scientific governance and one where any reconfiguring of interests can take place. ResIST will look at the construction of alternative accountability systems in two contexts:

- Redistributive issues associated with the design, development, access to and use of technologies;
- Experimental initiatives in capacity building and priority setting with the aim of remediating inequality.

Examining the values and processes which inform accountability in specific contexts will help give these two emphases a common framing and provide a deeper understanding of their successes and failures in securing wider embedding in policy and practice. In order to contribute to the overall aims of ResIST, this work on accountability must be understood in relation to issues of equality and what we might mean by science and technology.

## Equality and inequalities

Attempts to understand accountability and issues of equality raise a number of questions. How are equality and inequalities defined by participants? What counts as inequality? For whom? How does it relate to conceptions of justice? Which inequalities (or degrees of inequality) are seen as (in)compatible with justice as it is framed by actors? Should there be distinctions between inequalities related to problems of redistribution, of

recognition and of parity of participation? How do actors frame and formulate these issues?

What difference does it make to:

- a) focus on *inequalities*, their identification/description and analysis (regarded as the proper focus of social scientific work) and the reduction or mitigation of inequalities as they are linked to science and technology as a policy objective;
- b) focus on *equality* as the very condition of political action and as the main claim associated with the irruption of the “unaccounted for”, of the emergent or “orphan” collectives in the public space?

Are there differences (and what are they) between promoting equality and promoting policies for the reduction of inequalities? How does the active promotion of equality as a key feature of political participation and of the irruption of the demos as a force (Rancière, 1995), i.e., as a condition of “naming” those that are excluded or unaccounted for in the formal political space, differ from policies or actions aimed at the reduction of inequalities which do not challenge the very existence and fairness or justice of these inequalities?<sup>1</sup>

### **Inequality versus difference**

Some approaches to inequality have proposed a distinction between inequality and inequity. The former would refer to a descriptive approach, the latter to a normative approach.

A question that arises in relation to this distinction is whether all inequalities are undesirable or have consequences which are considered as negative. This question doesn't have a simple answer. There have been proposals for treating inequalities as by definition implying consequences that are regarded as undesirable, whereas the notion of difference would allow for positive description of distinctions which would not be regarded as negative (Santos, 1999, 2001; Fraser, 2003).

Political action aimed at addressing issues of inequality would be of a redistributive kind, whereas political action aimed at dealing with difference would be guided by recognition. However, consideration would still be required for precisely what kinds of redistribution would be useful. What would a positive distribution of, for example, accountability look like? And how might this relate to the specific task of understanding redistributive issues in relation to science and technology?

### **Science, technology and knowledge(s)**

What do science and technology cover? High-tech, specialized knowledge? Emergent forms of scientific knowledge and technology? Knowledge in the broad sense, including scientific and technical knowledge as well as professional, local and everyday knowledge? Should technology include not

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<sup>1</sup> An interesting reflection on these issues can be found in Panfichi and Chirinos (2002).

only cutting-edge and emergent technologies, but mundane or broadly shared technologies as well? How do different participants define science, technology and knowledge?

Configurations of knowledge associated with situated responses to inequality should be regarded both as resources for processes of empowerment and capacity building of citizens as well as an aim of these processes (Santos, Nunes and Meneses, 2004). In this sense we could consider science and technology (broadly construed) as sites for the constitution and enactment of accountability. This would provide us with a starting point for considering what counts as effective, reasonable, positive or equitable accountability. However, first we need to reflect on the complexities of what accountability itself means.

### **Accountability and inequality**

Conceptions of accountability which have gained widespread currency in the social sciences usually refer to the mediated relationships between those who govern and those who are governed. These conceptions are associated as well to a one-way frame of being accountable: the State, governments and political entities are supposed to be accountable to the public. This is the perspective followed by, for instance, Giddings (1995), who gives us an overview of Parliamentary accountability, or by Held (1996) or Peters (1996) and Spichal (1999) on broader approaches.<sup>2</sup>

Strictly speaking, and within the political culture of Euro-American liberal democracies, Government accountability is associated with the electoral process and Parliamentary accountability with the accountability of governments to parliaments. In the same line of thought, public accountability is associated to processes of governance, implying that their outcomes can be made transparent and that the public can examine both processes and outcomes of formal political action or of administration. A culture of public debate, freedom of information, access to information and mutual commitment of those who govern and those who are governed are the key-elements of this perspective. Another central issue to consider is that accountability procedures are mainly oriented towards representative systems.

However, actions in the last few years have suggested the need for a broader conception of what we mean by accountability. First, accountability is no longer discussed as the sole preserve of Government and public institutional structures. For example, organisations involved in corporate social responsibility, internal and external audit, the public production of particular kinds of information and ethical reviews are said to be engaged in doing accountability. Furthermore, ethical consumption, product labelling, the informed consumer and producer responsibility initiatives each suggest opportunities for particular kinds of accountability. This is not political accountability in the traditional sense, in that it does not necessarily involve

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<sup>2</sup> See also the contributions to the EC funded project PubAcc – “Analyzing Public Accountability Procedures in Contemporary European Contexts”.

state institutions, and neither is it dependent on a one-way flow of information. Instead what we find is opportunities for a broad array of individuals, groups and organisations to participate in different modes of accountability. Second, recent work on the democratization of Southern hemisphere countries, such as those of Latin America, has brought to the fore conceptions of political accountability which are largely based on citizen initiatives to make states, public officials and representative bodies accountable to those who elect them or whom they are supposed to serve. These initiatives include a broad range of experiments – from participatory fora and councils to institutional arrangements for the scrutiny of elections and of public office –, and, of course, forms of collective action configuring new types of public space. Those publics engaged in these modes of accountability are themselves susceptible to subsequent accountability. These developments suggest the need for a broadening of the very notion of accountability. The next section of this framework will set out a means to represent this expanded sense of accountability. Subsequent sections will then look at specific instances of these broader notions of accountability in action before concluding with reflections on the ways in which these new senses of accountability can help to address issues of inequality through science and technology.

## 2. Accountability

### Introduction

This section will introduce and interrogate alternative approaches to accountability. Engaging with accountability requires a detailed scrutiny of the concepts and approaches that the different areas of relevant scholarship have proposed and developed, but also an identification of the problems raised by the attempt at bringing them together within a single framework and a common research project. These include a closer examination of how approaches to inequality, science and technology, public knowledge and lay-expert relationships, democracy, accountability and the relationships between science/technology, the social and the political are (or are not) articulated and enacted in specific settings.

The overall design of ResIST project involves the definition of a common vocabulary and grammar for dealing with equality/inequality, science and technology and with other topics specific to the different Work Packages, as is the case, for WP3, of accountability. However, dealing with a need for definition and opening up new, broader senses of accountability might denote a tension between fixity and singularity on the one hand and multiplicity and fluidity on the other. One approach for managing these tensions will be to get close to the ways in which accountabilities are written about (e.g. in policies), discussed and enacted. We shall refer to this approach as “grammatical”, drawing on the work of cultural critic Kenneth Burke (1969) and following recent contributions to European sociology, such as those by Luc Boltanski and Laurent Thévenot (1991). These approaches may draw either on the identification of vocabularies and rules for producing certain types of statements as they can be abstracted from a corpus of theoretical or technical documents, or on a range of materials including accounts of experience of actors, documents, observation or historical materials produced through different forms of fieldwork or of empirically-oriented work.

This provides a means for research, such as WP3 (based on a commitment to a “grounded” approach to the themes dealt with), to deal with the tension between the search for a common – or “integrated” - framework and the need to deal with a diversity of grammars arising from engagement with different actors’ definitions, accounts and performances. The latter emerge in specific settings and are constitutive of particular courses of action. The “grounded” inquiry on the diverse vocabularies or repertoires of action allowing for the elaboration of situated or context-specific grammars is likely to generate tensions between the stated theoretical and conceptual aims of the project as a whole and the capacity to respond to the complexity of the field. This tension, however, can develop in productive directions, provided the very concepts that ResIST has defined as central to its design are put to the test of empirically-oriented approaches and of the diversity of grammars and repertoires emerging from them.

In order to emphasise these distinct vocabularies of accountability, rather than search for a single, authoritative version of accountability, this section will be organised into four parts focusing on face to face accountability, directive accountability, demonstrative accountability and participatory accountability. These four areas often overlap in instances of accountability, but they have been separated out here for ease of presentation.

### **Face to face accountability**

*Face to face* forms of accountability relate to the sense in which forms of interaction are occasions of accountability. For example, conversations might involve one speaker providing an utterance to be held to account by a second speaker whose subsequent response is then available to be held to account by the first speaker (Garfinkel, 1967; Luff and Heath, 1993). This approach treats accountability as a pervasive phenomenon, constitutive of everyday forms of interaction (constitutive in that through holding each other to account, more or less mutual intelligibility is accomplished). However, the form of accountability outlined can be characteristic of professional as well as everyday settings (Lynch, 1998; Suchman, 1993). In professional settings, the ways in which face to face interactions operate as moments of accountability are tied into organisational structures (for example, meetings are held as opportunities for parties to hold each other to account and those meetings form part of the structure of the organisation as they are timetabled, minuted and their existence becomes an expectation amongst organisational members). Face to face forms of accountability are characterised by more ad hoc, less systematic forms of interaction than other areas of accountability. This can be both advantageous (in that problems with for example, directive forms of accountability are easier to avoid) and disadvantageous (accountability of this form can sometimes appear less organised or rigorous). An important principle of face-to-face forms of interaction is mutual accountability - each gets to hold the other to account. This is less apparent in other modes of accountability.

### **Directive accountability**

*Directive* forms of accountability relate to those systems of assessment where an organisation is measured according to certain principles, expectations, standardised measures, benchmarks, performance indicators and so on (see Power, 1997; Baxter and Chua, 2002). The metrics, for example, provide a directive which forms the focus for accountability. The metrics draw together the aspects of the organisation to be measured and operate as principal ways in which the organisation steers itself and through which its members come to prioritise certain types of activities and organisational goals (Miller, 1992; Miller and O'Leary, 1994; Rose, 1999). Such measures are often tied into further forms of accountability such as external auditing whereby organisations are expected to be able to demonstrate that they have adhered to certain measurement standards and

practices. A drawback of this approach to accountability can be that the areas of activity to be measured do not remain as measures, but instead become targets to aim toward. In this way, directives can be consequential for the types of activity that the organisation carries out (see, for example, Strathern, 1999; 2000; 2002). Such an approach to accountability can operate successfully for as long as the directives are considered appropriate and their potentially narrowing consequences are considered manageable.

### **Demonstrative accountability**

*Demonstrative* accountability refers to those actions understood as carried out, usually by an organisation (public or private), on behalf of an often unspecified mass audience. This includes, for example, company accounts made available for the public good or in the public interest. In effect these 'publics' tend to be fairly narrow and specialised (those who are interested in and have the time and skill to read reports, accounts and other ephemera made available by organisations; that is they are not, in practice, often noted as members of the general public). This form of accountability includes calls for organisations to make certain types of information available and for (sometimes publicly funded) organisations to demonstrate their value for money, responsibility (social, corporate) and ethical standards. This mode of accountability is most closely associated with demands for transparency<sup>3</sup>. These demands are made in relation to, amongst other things, the media (Media Transparency, 2003), global political campaigning (Transparency International, 2003) and corporate organisations (Shaw and Plapinger, 2001). Like directive approaches, demonstrative accountability forms a set of organisational principles as organisations are actively encouraged to adopt particular protocols on making information available for assessment and, indeed, for public organisations their funding can depend on an ability to demonstrate that they have adhered to these protocols. Problems with this approach to accountability involve questions regarding whether or not information made available matches internal organisational activity, whom information is made available to, what sense is made of information made available (see Wall, 1996) and how information is used (often, making information available becomes the end goal, a box to tick to demonstrate adherence to a principle rather than for any clear practical benefit; Neyland, 2007).

### **Participatory Accountability**

This fourth form of accountability investigates the means and consequences of attempts at encouraging and accomplishing participation in particular forms of activity for the purposes of accountability. *Participatory* accountability includes how, for example, organisations, scientific expertise

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<sup>3</sup> Transparency has been considered from a number of different perspectives in poetry (Gordon, 1969), post-modernism (Vattimo, 1992; Baudrillard, 1993), philosophy (Westphal, 1986), political analysis (Wall, 1996), psychology (Tagiuri et al, 1955) and studies of accounting (Humphrey et al, 1995; Gray, 1992; Zadek and Raynard, 1995; Sikka, 2001; Canning and O'Dwyer, 2001; Drew, 2004).



and government actions should be governed and the adequacy of new methods of public consultation in the context of demands for greater accountability through democratic participation in decision making (for an overview see Irwin, 1995; Kleinman, 2000; Kitcher, 2001). This mode of accountability plays heavily in the dispute between a “low-intensity” model of democracy associated with neoliberalism and a democratic-participatory conception, which defines the current political dynamics of regions such as Latin America. The latter is also present, although in different form and drawing on different vocabularies (such as delegation *versus* dialogism or representation *versus* participation) in political experiments taking place in Europe and in North America.

For minimalist or “low intensity” conceptions of democracy, usually associated with neoliberalism, the assumption is that there is one inescapable, global model of economic organization which sets constraints to any political process, thus narrowing down the possibility of choice which is claimed to be central to the competitive dynamics of this type of democracy. Under these circumstances, the definition of a set of formal, procedural rules and institutions that guarantee them are seen as constituting democracy. Accountability means, above all, electoral and judicial accountability associated with the respect for procedures and information to the public. Although outcomes (of policies, of government) should be relevant, the reference to constraints beyond the possibilities of political action actually reduces their significance. In fact, governing against an electoral program is often celebrated as evidence of “realism”, “responsibility”, etc. “Civil society” is reduced to a “third sector” which takes over many of the policies formerly associated with the state, all in the name of efficiency and cost-effectiveness.

As an alternative, democratic-participatory accountability initiatives focus on the possibility of change, based on the active engagement of citizens in public life. Participation is focused on the shaping of alternative modes of organizing economic and social life, and participation becomes a central issue in the dynamics of democracy, a means of broadening and strengthening it. This mode of accountability is based not just on following formal rules and procedures, but on outcomes as well, on how public institutions, governments and other actors actually achieve democratic aims. The creation of spaces for the engagement of citizens in the definition of policies and their assessment is a mode of articulating procedures and aims.

Vocabularies of participatory accountability may be associated with justice, law, ethics, science, religion, culture, economics/management, political responsibility, etc. Criteria for accountability, as far as policies or actions addressing inequalities are concerned, contemplate inclusion, voice, empowerment/ capacity building, binding power, redistributive effects and social control. This mode of accountability suggests that topics such as the emergence, coexistence, articulation or confrontation of civic epistemologies (Jasanoff, 2005) must be included as a key part of the study.

## Summary

This section of the report has incorporated four different approaches to accountability. This has begun to broaden out the sense of accountability under consideration beyond traditional forms of, for example, neo-liberal political accountability. Attempts to address inequality through science and technology based accountability can draw on these broader modes of accountability to address questions such as accountability for whom, using what means, with what outcome. In particular instances of accountability, these areas can begin to overlap in challenging ways. For example, attempts to render an organisation or a political process accountable can involve (face to face) meetings, demands for the production of specific forms of (directive) evidence, calls for information to be made (demonstratively) public and the development of processes of (participatory) engagement whereby those external to an organisation or process are invited to take part in an aspect of decision making. The next section will briefly illustrate these modes of accountability in reference to the case-studies researched through WP3.<sup>4</sup>

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<sup>4</sup> More details on the case-studies can be found in the case-study reports, available from: <http://www.resist-research.net/home.aspx>

### 3. Accountabilities in action

#### Introduction

ResIST WP3 had two central emphases in its exploration of accountability. The first of these focused on opportunities for addressing inequalities through holding forms of science and technology to account. The second focused on experiments in political participatory forms of accountability. This section of the report will briefly introduce each activity. The Conclusion will then draw together these experiences and summarise the salient points of these accountability investigations.

#### Science, Technology and Accountability

This aspect of WP3 asked: How can we develop an understanding of the mundane and pervasive ways in which science and technology developments shape the organisation of life in a variety of locales? How can we develop an understanding of the interconnected and multiple locales through which technologies move? What methods do we have available for developing appropriate policy for such interconnected locales? What would constitute appropriate mechanisms for holding so many policy locales to account? How could accountability mechanisms be developed for the benefit of those in specific locales? What methods of assessment need to be developed for considering such benefits and beneficiaries? Addressing these questions involved the development of three cases.

#### Case Studies

1. *Textiles* Clothing forms a ubiquitous aspect of consumer lifestyles in the developed world. However, often t-shirts are produced in developing countries, where questions are asked of labour conditions, safety and hours of work. Subsequent to use in the west, t-shirts are often donated to charities and shipped back to the developing world where they form the focus of emerging industries for accessing, distributing and owning such garments. The research asked how could these contexts of production, shipping, usage, shipping (again), re-distribution and usage (again) be connected through policy developments? Could a system of accountability be developed for encouraging the connectivity of these locales to be constituted in such a way as to be advantageous to the developing world?

The research on textiles suggested a variety of problems with the global textile trade. This included mass movement of goods, attempts to protect domestic markets from imports, exploitative labour relations and potential problems with the industry of textile donation. One way forward proposed for textile trading was Fair Trade initiatives. These relied on a form of *accountability through certification*. Systems of Fair Trade certification involved all four areas of accountability. Inspectors would go to potential producers in the developing world, along with traders and manufacturers,

holding them to account in (face to face) interviews and certification organisations would audit fair-traders on-going financial and social investments (a form of directive accountability). Each of these forms of accountability was opened for interrogation. To what extent did the sense made by inspectors of complex trading conditions constitute a reliable record of what had gone on in Fair Trading? How far did these accountability mechanisms manage to change things for people in developing countries (given that, for example, a tiny percentage of the money a consumer spends on a Fair Trade item actually gets back to the producer)?

Certification also involved forms of demonstrative and participatory accountability. Firstly, Fair Trade organisations would attempt to render the entire trading system transparent, providing information for producers, traders and manufacturers. This transparency was justified on the grounds that producers in the developing world had previously been at a disadvantage through lack of access to markets and lack of access to information over, for example, what would count as a suitable price for their goods. Secondly, Fair Trade certification was also designed to engage consumers by (attempting to) guarantee that what they were consuming was something for the good of the developing world while also making a statement about the kinds of things they cared about. This certification and accountability was designed to introduce what might be termed trust at a distance for consumers. Questions regarding this form of accountability were many. The extent to which any form of transparency matches with the internal activity of organisations can be held up to scrutiny. Did Fair Trade organisations simply encourage reporting information on particular activities whilst other actions were left unaccounted for? Once measures were in place, did producers or traders simply attempt to produce as much information as possible to match what they perceived were expectations of the producers of that measure? What was the reliability of a Fair Trade label actually meaning that every aspect of a good had been produced fairly (and according to whose definition of fair)? Did every consumer have the same notion of what should count as Fair in purchasing Fair Trade goods? Did these accountability systems enable assessments of 'fair' (i.e. what counts as a fair wage) while maintaining commitments to current models of 'trade' (i.e. how could global distribution mechanisms be re-oriented to address issues of inequality)?

The case-study report on Fair Trade suggests that the form of accountability built into the system is itself inequitably distributed and does not necessarily or straightforwardly address forms of inequality (it may deal with prices paid, but not broader terms of trade). A broader consideration of this research in relation to the utility of modes of accountability set out in this report is taken up in the Conclusion.

2. *Vaccines* Vaccines can form a pervasive, mundane and routine expectation within societies of the developed world (aside from questions of the reliability of MMR and questions of the availability of flu vaccines). However, the absence of, and political controversies pertaining to, vaccines in the developing world require that many aspects of day to day routine are

organised around attempts (and failures) to gain access to vaccines in appropriate settings, within appropriate time frames, for appropriate sections of a population. Much of this access and routine expectation derive from vaccine development and ownership by developed societies. How might these contexts of vaccination be drawn into a connected system of accountability? How might such a system be developed in order to enhance the health and well being of those in the developing world?

The research on vaccines primarily looked to Public-Private Partnerships (PPPs) as the way forward for developing new drugs and overcoming the variety of different obstacles to vaccine development in the developing world (including the apparent absence of profitability in 'neglected' diseases, problems with infrastructure and education, delivery and vaccinology). PPPs proposed a form of *accountability through partnership*. Under the PPP model (although there are a variety of different possible models), according to the research presented, partnerships would operate in a face to face mode of accountability. Although this operation would mean that each partner was available to hold the other partners to account, problems seemed apparent in the absence of any means to make the PPP accountable beyond the partners and even between some partners as meetings were only occasional. There was a kind of narrowly proscribed face to face accountability, where partners could hold each other to account, but those involved were limited to certain partners. Various researchers suggested greater demonstrative accountability was required in order to render the PPPs accountable (including how they work, the terms on which they invite new partners, whose interests prevail, etc). Funders of PPPs meanwhile sought greater or more effective directive accountability, apparently continually searching for more indicators, metrics and measures which would finally deliver a sought after robustness of measurement.

Although partners could hold each other to account, there was little demonstrative or participatory accountability. However, successfully rendering an organisational form publicly accountable is very difficult. With limited funds, reasonable questions could be asked as to whether broad forms of demonstrative or participatory accountability should be a priority. Vaccine trials involved a particular kind of face to face accountability; those populations deemed targets for vaccination would need to be monitored, assessed and accounted for according to their potential sickness, benefit from the vaccine, receiving of the vaccine, participation in the trial and so on. In a similar manner to Fair Trade, accountability in this case appears unevenly distributed.

A further problem with some PPPs was their designation of the developing world. The 'Developing World' was a category made and maintained for the PPP through accountability relations. Some PPPs did not envisage the 'Developing World' as any of the Ps – it was neither conceived of as public or private or (often) as a partner. Instead PPPs positioned the 'Developing World' as beneficiaries of the PPP, an accounting term delineating non-active involvement in processes which maintained the accountability system and produced decisions regarding the form a benefit and beneficiary would take. In this way the accountability system sometimes kept the 'Developing

World' from having an active voice in the PPP and instead positioned the 'Developing World' as grateful recipients of the 'wisdom' and 'generosity' of the PPP. The accountability system made and maintained a social order which positioned who could and could not contribute to the running and decision-making of the PPP and who would be grateful for receiving outputs from the PPP (whether they wanted them or not).

3. *E-waste* With the growing use and disposal of electronic equipment (from PC's to mobile phones), questions are being asked of where waste should go, how IT, for example, should be dismantled and what impacts such e-waste is having on particular locales. Historically the far-east has provided the context for the development of IT, the western world has provided the context for much IT use and the developing world (particularly India, China and west Africa) has provided the context for IT disposal. However, this has changed significantly with policies designed to restrict the inclusion of hazardous substances in electronic equipment, manage the movement of waste from developed countries (and restrict its movement to developing countries) and the massive and rapid rise in production and use of electronic equipment in countries such as India and China. This case-study asked: what are the consequences of policies which attempt to draw together these distinct contexts so that producers and users are aware of, and perhaps more responsible for, disposal issues? What are the most appropriate ways for disposing of e-waste? Can we develop reliable mechanisms for holding to account producers, users and the contexts of disposal in order to enhance benefits of this connectivity of locales for those in the developing world?

The research on e-waste highlighted the growing problem of electronic equipment having ever shorter life-spans, being dumped at greater pace, historically travelling to countries in the developing world with consequences for local environmental pollution and for local people employed to dismantle the waste in hazardous labour conditions. The research looked to new European Union directives as a way forward in reducing these problems through reduction in the toxic contents of goods, reducing the energy consumed by goods, encourage re-use of goods and establishing systems through which producers of goods should take back electronic items and dispose of them responsibly. In order to enforce this extended producer responsibility take back scheme, the directives proposed holding to account the audit trails of electronics producers. This has resulted in a form of *accountability through audit trail*. The form this audit system has taken involves information on producers and the goods they have produced (including how old the goods are), how they will go about collecting the goods (whether through their own take back scheme or an intermediary firm), what has happened to the goods taken back (where they have been collected, where they have been taken to) and proof that they have been dismantled responsibly. These directives do not prevent old electronic goods from moving to the developing world if they are to be re-used, but do put in place rules on how those goods should be treated.

This audit trail of the production, consumption and movement of electronic goods engaged with face to face, directive and demonstrative modes of

accountability. Initially it was the producers and retailers of electronic goods who were the organisations to be held to (directive) account through this new audit mechanism. Compliance with this audit was checked via occasional (face to face) inspections. Audit trails and information on the extent to which producers and retailers successfully managed to take back goods from consumers were then to be made available for consumers to (demonstratively) hold these producers to account. The system was designed to render producers and retailers aware of their responsibilities through the threat of enforcement and negative publicity regarding any potentially unethical behaviour. However, once again questions could be asked about the integrity of this accountability system. First, to what extent were paper trails relating to shipping containers which moved from port to port around the world reliable evidence of the content, final destination and final usage of the content of shipping containers (previous exposes suggested these audit trails were weak)? Second, in what ways did consumers relate to this opportunity for participatory accountability? Third, what implications might this system have for the developing world (for example, it would not necessarily eliminate electronic waste in the developing world with 'reusable' goods eventually requiring disposal)? Fourth, the research suggested that compliance with e-waste legislation was currently low and that harmonisation across European Union member states had proven difficult; what are the prospects for change in this situation?

Each of these cases has introduced questions regarding inequality through science and technology which can be understood in relation to the development of the WP3 accountability framework. The salient points which can be drawn from these cases in relation to the accountability framework will feature in more detail in the subsequent Conclusion. Prior to that, the second emphasis within WP3 can offer some alternate reflections on the nature of accountabilities in action.

### **Experiments in participatory political accountability**

The starting point for this part of WP3 was the identification and characterization of procedures which would allow public policies to be made publicly accountable for their effects on inequalities. The considered policies were those directly addressing science and technology (research, innovation), as well as those public policies "constitutively" involving the mobilization of scientific and/or technological resources or of specific kinds of expertise, as is the case with environmental, health, energy, transport or urban planning policies. The procedures targeted here were those which had as their stated aims the promotion of equality or the reduction of inequalities.

The question of inequality has often been included in general political programs or manifestoes or in policy statements. These references to inequality are often presented as if responses to inequality were to be regarded as outcomes of policies or actions with different aims and purposes. The reduction of inequality and any redistributive effects would be by-products of investment or growth. In most cases, however, it is hard

to understand how this issue can be addressed in such a way as to make it publicly accountable both in terms of its processes and in terms of its outcomes.

A range of initiatives that have emerged over the last decade have brought again to the centre of policy and public action the need for specific interventions explicitly aimed at achieving redistributive effects and promoting capacity-building and empowerment among citizens. These initiatives are often local and they involve a collective mobilization and participation of citizens in different types of fora, deliberative spaces and collaborative research and action. Urban government and decisions concerning the definition and implementation of urban policies, debates and decisions regarding distribution of municipal budgets, collective mobilization and alliances with experts and officials to address health and environmental issues or different kinds of social problems provide exemplary instances of the potential as well as the limitations of action aimed at addressing inequalities and promoting redistribution in ways that are publicly accountable.

There are four conditions which are said to be necessary for these experiences to have redistributive and empowering effects and may be evaluated through citizen participation and scrutiny. These four conditions are:

- 1) the definition of the strategic aim of addressing and reducing inequalities and actively promoting equality through citizens' empowerment;
- 2) the design of participatory procedures characterized by symmetrical conditions of engagement of all those concerned or affected by the issues under discussion;
- 3) the definition of viable or achievable aims which can be subject to scrutiny and criticism of those concerned or affected and whose results can be evaluated for their outcomes in terms of redistributive effects and empowerment;
- 4) these processes require the development of a collective critical capacity which depends on the shaping of configurations of knowledge based on the articulation of different forms of expert and local knowledge.

This part of WP3 drew on two sets of cases to explore these experiences.

### *Public policies, accountability and configurations of knowledge*

The first set of cases includes a range of situations and processes across three countries – Brazil, Portugal and Spain – and two continents – Europe and Latin America. These cases concentrate the main debates identified in the previous sections and allow for a detailed study of the ways in which accountability procedures are organized and enacted in relation to public policies. The analysis of knowledge configurations assumes here a central role.



Both participatory budgeting processes and health municipal councils have their origins in Brazil. Later, different models of participatory budgeting were developed in different parts of the world, namely in some European countries (Portugal, UK, France, Italy, Germany, Spain, among others).

The conditions for the emergence of these types of participatory procedures are linked to the democratization process that took place in Brazil during the late 1980s, with roots in the 1970s. In fact, during this period, there was ground for the emergence of experiences of construction of public spheres and for the extension and democratization of State management. Some perspectives characterize this period as the effective foundation of civil society in Brazil (Dagnino, 2002). The discussion and elaboration of the democratic Constitution (1988) is, by itself, a good example of a participatory process, since citizens were able to propose amendments to be included in the text. As a result, participation was inscribed as a fundamental right of citizens and participatory spaces were considered as a part of the architecture of the State.

In the wake of this process, innovative procedures and experiments were launched in several municipal areas, involving citizens in decision-making processes related to a range of domains of public policy. The emergence of participatory budgeting and health municipal councils are part of this process. The neoliberal policies of the 1980/1990s had as a major consequence the deepening of social and economic inequalities, but, this did not affect the visibility of Brazilian civil society. Democratization was, thus, associated with the construction of a sphere characterized by democratic social practices, the revaluation of an ambiguous cultural tradition concerning democracy, and, finally, the defence of the demarcation between civil society and State (Avritzer, 2002).

The first experience of participatory budgeting emerged in Porto Alegre (Rio Grande do Sul, in Southern Brazil), in 1989. The transformations in the main urban areas of the country – a huge increase of the population living in the cities, the removal of low income populations to the margins of the cities and a vast increase in the number of civic associations – were key elements in this process (Avritzer, 2002; Dagnino, 2002). The process of participatory budgeting was the outcome of the demands by popular movements, namely by neighbourhood associations, and the fulfilment of the program of the Workers Party, in power from 1989 to 2004.

### *Public health, environmental justice and new accountability systems*

In Latin America, a specific brand of public health has emerged in the latter half of the 20<sup>th</sup> Century, which is widely known as “collective health”. Inspired by social medicine and critical approaches to epidemiology and to preventive medicine, collective health explicitly addresses the social, economic and environmental conditions of health and disease (Paim, 2006). Health promotion, understood as interventions aimed at changing these conditions through collaborative and participatory projects and initiatives, and environmental health figure prominently in the agenda of collective health (Czeresnia and Freitas, 2004).

Through the mobilization – going back to the 1960s and 1970s – of health professionals, social movements, sectors of the Catholic Church and – from the 1980s onwards – of public institutions as well, a movement for health (Movimento Sanitarista) took shape in Brazil, which played a crucial role in inscribing the right to health and health care as a fundamental right in the 1988 Constitution, opening the way to similar processes in other Latin American countries. The 8<sup>th</sup> National Conference on Health, organized by that movement in 1986, drafted a set of proposals on the definition of the right to health and health care which were included, to a significant extent, in the 1988 Constitution.

The Constitution defined health as a “right of all and a duty of the State”, and several laws passed by Congress in the 1990s provided the institutional and legal basis for the creation of a national, unified health service which embodied the principles underlying the conception of health as collective health.

Health promotion, thus, became central to the whole design and implementation of policies in the field of health (Gerschman, 2004). In a society displaying huge inequalities as is Brazilian society, however, the implementation of a comprehensive health policy aimed at ensuring health care for all citizens proved to be a huge task, its successes being unevenly distributed across the national territory. The decentralized and place-based design of the health system – which rests largely upon the provision of care and the promotion of health at the municipal level – made it easier to identify regional and group-based inequalities in health conditions and in access to health care. These inequalities are class-based, disproportionately affecting low-income or poor populations; they are associated with exclusion – of the homeless, especially of children –, and with ethnicity and race, especially in the case of indigenous populations. There is a strong association between inequalities in health and access to health care and situations of environmental racism or, more generally, of what has come to be named environmental justice. These situations generate specific forms of vulnerability which are not adequately addressed through “downstream” provision of health care or through more traditional approaches to preventive medicine. As a response to these situations, a range of initiatives were launched, some of them originating in health professionals and health institutions, others in popular mobilizations and movements or in a convergence of both. These initiatives provide exemplary instances of the complex co-production of the cognitive-scientific, the social and the political explicitly addressing issues of inequality as these are revealed by the violation of the right to living in a healthy environment.

We selected as case studies two of these initiatives. The first includes the programs for fighting and preventing endemic, vector-transmitted diseases and the second initiatives promoted by the national environmental justice network.

## 4. Conclusion

This framework has suggested that accountability requires broader consideration than traditional conceptions of political or legal accountability. This broadening out relates to the vocabularies, institutions, organisations, individuals and things (such as forms of science and technology), the nature of accountability processes and the potential outcomes of accountability which all require incorporation into assessments of the possibilities presented by accountability. This framework has proposed four modes of accountability: face to face, directive, demonstrative and participatory. Although each of these modes of accountability often overlap in practice, the richness of this broadened field can be useful for addressing ways forward for understanding accountability and (in)equality. The four modes of accountability open up new areas of exploration for considerations of dealing with (in)equality through science and technology. Who gets to hold whom to account, accessing what kinds of information, through what type of process, with what kinds of outcome are central questions for inequality and accountability. However, we should not assume that having 'accountability' equates to having 'equality.' Instead this framework has suggested that detailed consideration is required for moments of accountability in order to address the questions of inequality outlined. We should also not assume that these questions are the sole complexities involved in assessing inequality and accountability. There are also issues of the framing of problems and solutions, ontological politics and the uneven distribution of accountability. This Conclusion will now take each of these issues in turn.

### Problems and solutions

Calls for further accountability and declarations regarding the utility, necessity or right to accountability each require detailed investigation. In several of the cases studied under this workpackage it appears that calls for accountability and claims regarding the utility of such accountability involve a complex constitutive relationship between problems and solutions. The problem to be tackled via a new form of accountability is constituted in such a way that it appears amenable to resolution through the new form of accountability. For example, when Public-Private Partnerships invest in research to uncover more effective numerical indicators for holding to account the research spending of malaria vaccine scientists, the nature of the problem and the solution are simultaneously articulated. The problem is defined as scientists who need to be held to account in order for the funder to understand how money is being spent. More than this, the problem is defined as one that is amenable to be held to account through numerical indicators. More than this, the indicators are to be understood (once produced and utilised) as providing evidence of the activities of scientists. The directive mode of accountability thus introduces a particular definition

of problem and solution which would differ quite strongly from an alternative mode of accountability. If, instead of a search for numerical indicators, funders sought to hold scientists' activities to account face to face, they might call for a meeting. The nature of the problem and the proposed solution is very different, the relations of accountability changed, the scientists may even get an opportunity to ask questions of the funder and so on. The consequences of framing problems and solutions through particular modes of accountability require careful reflection as these are consequential. Critical distance is required to reflect on the nature of these relationships and the broader senses of accountability introduced in this framework can contribute to this distance: accountability does not have to be thought of in one mode, with one set of relationships, there are always alternatives. Some of these alternatives to conventional problem-solution articulations can be considered through forms of ontological politics.

### **Ontological politics**

The work of Mol (2002) suggests that people and things can enact multiple ontologies, simultaneously. There is a kind of ontological politics in switching between different ontologies. To continue the example of malaria vaccine scientists, there are several ontologies of malaria (as a disease of the poor, as an environmental issue to be tackled through spraying potential mosquito breeding sites, as a parasite, as a disease which has most impact on children or pregnant women, as a problem which requires a barrier such as a net to be introduced between people and mosquitoes, and so on). Switching between these ontologies is required according to modes of accountability. Scientists involved in the production of a new vaccine candidate may make strong claims that 'their' candidate is likely to lead to a reduction in adult cases of malaria and directive modes of accountability may result in funders establishing metrics for assessing the efficacy of the candidate during trials on that basis. The trials may then demonstrate efficacy in reducing cases of malaria in children under 5; a success of sorts, but a failure in the directive mode of accountability. Broader modes of accountability, incorporating for example face to face meetings, might allow for more fluidity in this accountability assessment. To be successful the ontology of the problem (that it is about adults) needs to shift (it is about children) and the ontology of the solution (it is a vaccine for adults) also needs to shift. Building this kind of fluid ontological accountability is difficult. The broader senses of accountability can play a role in this fluidity. Organisations do not need to solely depend on a rigid metric sense of directive accountability.

### **Uneven distribution of accountability**

While problems-solutions and ontological politics are issues which require consideration in relation to accountability, these areas have somewhat opaque relationships to issues of inequality. For example, although it could be argued that discussions over the ontology of diseases are consequential for considering the success of a vaccine candidate, this would still be some

way from developing a successful vaccine which might eradicate some of the disease burden of developing countries. However, modes of accountability can be engaged more directly in issues of equality. Consideration is required for the distribution of accountability relations: who gets to hold whom to account, drawing on what kinds of information, through what form of process, with what outcome?

Face to face forms of accountability are conventionally focused on mutual accountability relations with each getting to hold the other to account in, for example, a meeting. However, it is not the case that all parties are in a position to participate in face to face accountability, nor are they necessarily in equitable relations which might foster accountability, nor do they necessarily have the resources required for accountability. For example, producers in developing countries wishing to be certified as Fair Trade may have opportunities for face to face accountability when certification organisations send inspectors to assess their production processes. Yet the nature of inspection introduces initial relational asymmetries (the producers want to be certified, the inspectors are there to do their job), the producers often have to pay for certification and inspectors are not always open to answering questions (the inspector is there to ask questions). Thus face to face accountability needs to be considered in relation to questions of inequality and consideration given to the types of relationship and engagement involved.

Directive forms of accountability are predicated on a principle of independence and evidence generation. Numerical indicators are designed to be understood as neutral measures outside any particular local politics. However, this mode of accountability also incorporates a potentially uneven distribution of accountability relations. Who gets to set the indicators, what gets measured and the use of evidence generated are each consequential. In the case of electronic waste it is clear that the mode of directive accountability (what gets held to account, by whom, using what metrics) is designed in a European policy context with anything non-European designated as other. There is little in the way of input from developing countries or even European NGO's representing developing country interests. Inputs and outputs from this mode of accountability are the exclusive preserve of those building European directives.

Demonstrative modes of accountability often involve the broad distribution of information across the public sphere. This can play a role in addressing asymmetries of accountability noted under face to face modes of accountability; each party may get to hold the other to account through the information made publicly available. However, within this mode of accountability consideration also needs to be given to the kinds of information made available (does it reflect what goes on in the organisation making the information available, is it reliable, on what grounds?), the method for making information available (who can actually access information?) and the means required to make sense of information (does reading the information require, for example, legal or scientific knowledge?).

Participatory modes of accountability are predicated upon opening up particular areas of activity for broader engagement in, for example, a decision-making process. In this sense the mode of accountability appears to re-distribute accountability potentially quite broadly. If the particular inequality that one wanted to address was access to decision-making, this mode of accountability might appear to have utility. However, it is not always clear that those who participate in these modes of accountability are representative of broader populations, often participation is limited to particular set-piece moments of accountability (such as a particular area of local government policy) and it is not necessarily the case that participatory decision-making is more effective at addressing, say, marginalised populations than conventional policy-making. It may even be subject to a kind of tyranny of the masses with marginalised populations becoming even more marginal.

### Summary

We can see that each of these modes of accountability contains potential issues in terms of the uneven distribution of accountability. However, it also appears that each mode contains the potential to address issues of who gets to take part in accountability, using what resources, through what kind of process and with what outcome. Broadening out and even combining modes of accountability opens up these issues for consideration. An assumption that traditional modes of political or legal accountability are the only option certainly appears to close off these alternative ways of thinking about accountability. In sum accountability requires broadening out from its traditional narrow concerns, but this broadening out also requires careful consideration in relation to the questions outlined in this conclusion.

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