19

KNOWLEDGE, NGOS AND NETWORKS
Applying Epistemology To The Work Of Development

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Abstract: Non-governmental development organisations (NGDOs) are increasingly adopting knowledge-based roles such as lobbying, advocacy, policy formulation, research and dialogue facilitation. At the same time, they have on the one hand been criticised for knowledge errors and failures, and on the other been urged to adopt knowledge networking technologies. Building on earlier work which developed a three-dimensional model of knowledge based on contemporary epistemology and cognitive science, this paper develops a knowledge-based view of NGDO activity, arguing that there is evidence of a complex range knowledge roles, involving some very demanding informational, epistemic and conceptual challenges. The expertise, skills and resources required for effective knowledge work can be supported by networks and networking technology, but only if deficits as well as benefits are recognised and if informational, epistemic and conceptual capacities are developed alongside technical expertise.

Keywords: Knowledge, development, NGOs, NGDOs, Internet, networks, epistemology, information, conceptual development.

1 INTRODUCTION

It is widely recognised that the roles of non-governmental organisations (NGOs) are changing (Murphy and Bendell, 1997; Rawcliffe, 1998), partly as a result of previous successes and partly because of the failings of the public and private sectors in dealing with complex problems of poverty, underdevelopment and environmental damage (Heap, 2000). In the development sector specifically there has been a change from operational work to international advocacy (Madon, 1999), and towards the building of civil society and democracy (Clark, 1995; Fox, 1992). Such activities,

alongside emerging concepts of development as public action and policy formation, and the proliferation of information and communication technology (ICT), have caused non-governmental development organisations (NGDOs) to recognise the fundamental importance of knowledge and communication activities such as research and lobbying (Thomas et al., 1998).

In a paper to a previous IFIP conference, I reviewed some of the large and growing literature advocating a knowledge-based approach to development and technology (Johnstone, 2002) and argued the need for philosophical grounding. This paper extends the three-dimensional analysis of knowledge developed there, based on the 'externalist' strand in contemporary epistemology (Putnam, 1988; Crane, 1995; Goldman, 1999). Where the previous paper presented a very general framework, this paper applies the framework specifically to NGDOs. Using existing literature as evidence, it indicates firstly how certain activities identified as crucial to the functioning of NGDOs can be seen as exemplifying one or more of the framework dimensions. The second section argues that a three-dimensional approach can help to diagnose knowledge problems and perhaps to suggest solutions. The final section considers critically some knowledge claims made for network technology.

The view of knowledge adopted here is based on recent epistemology which stresses the importance of how beliefs come about rather than their intrinsic properties or relationships to other beliefs. Different philosophers offer slightly different formulations; the framework applied here is based on that developed by the American epistemologist Alvin Goldman, whose definition of knowledge can be summed up as 'true belief formed by a reliable process'. This 'process reliabilism' shifts epistemology towards the empirical sciences since a wide range of processes can be reliable, including vision, memory, introspection, good reasoning and social processes such as communication and argumentation. Knowledge processes, however, do not occur in a vacuum or yield knowledge on their own. They depend crucially both informational inputs and preexisting conceptual structures.

These three requirements – information, reliable process and conceptual structures – give rise to a three-dimensional framework for analysing activities and interventions in terms of knowledge. At the informational level, a knowledge analysis must consider factors such as the relevance, accuracy, timeliness, inclusiveness and organisation of content, whether derived from direct experience or through communication. At the conceptual level, the analysis must focus on the ways in which knowers categorise, make sense of information, and form ideas. At the epistemic level, it must look at how knowers judge the degree of confidence to place in the ideas they form – treating a new idea with little evidential backing as a hypothesis, for example, but accepting a long-standing, tested belief as a near certainty.

Although no one of the three factors can on its own yield knowledge, and any individual act of knowing requires all three, any improvement in informational, epistemic or conceptual status may contribute to overall knowledge status. Whether it does or not, will depend on whether the other two factors can operate on it – for example, access to a document may provide information but unless it is intelligible (conceptual dimension) and reliable (epistemic dimension) will not amount to a gain in knowledge.

The three-dimensional analysis treats knowledge as a fundamentally individual and cognitive phenomenon, something that exists only within the mind of a knower. On the other hand, it acknowledges an important social component at each level, other people being among our most important sources of information and concepts, and communication being central to many epistemic processes. In considering knowledge in organisations – in this case NGDOs – the social aspects are crucially important.

2 KNOWLEDGE IN NGDOS

Development NGOs engage in a wide range of activities and processes aimed at generating and supporting knowledge both within the organisation itself and externally in wider society. Some NGDO activities such as advocacy and research are obviously directly linked to knowledge, but even where goals are not related to knowledge, it is frequently the case that knowledge is instrumentally essential to attaining them.

In each case, informational, epistemic and conceptual factors are involved, although the three dimensions are not necessarily of equal significance. Any actual activity will inevitably focus explicitly on just one or perhaps two dimensions, depending on the purpose of the activity and assumptions about what is problematic and what is not. If an AIDS NGO wants to communicate with others about a training workshop for home-based carers they will probably focus on information provision (when, where, who, how much etc), assuming that the concepts of training, workshop and home-based care are relatively unproblematic. If they want to open the workshop to the community to recruit new carers such assumptions may not be valid and effort may have to be put into explaining what home-based care is, why it matters, and perhaps what happens in a workshop.

Knowledge failures and problems often arise when assumptions are made that turn out to be wrong about which dimensions are unproblematic – using terminology that the intended audience does not understand (failure through assuming unproblematic sharing of concepts), or sending 'uppers' to ask 'lowers' their views (failure through assuming reliable epistemic process).

The following sections analyse some central informational, epistemic and conceptual roles highlighted in recent work on NGDOs. It needs to be

stressed that all real-life activity involves all three dimensions to a greater or lesser degree. The categorisation employed below is based on the ultimate purpose of the activity, but is not intended to suggest that information-directed actions, for example, may not also involve conceptual development or epistemic judgement; indeed, they are bound to.

2.1 Informational Roles

The informational dimension is concerned with the nature, quality and properties of the raw material upon which knowledge processes operate. Information activities and their inputs and outputs occupy a central place in the new roles being adopted by NGDOs (Meyer, 1997), as project-based work is increasingly displaced by information-based work (Edwards and Hulme, 1992). NGDOs are information-rich environments (Powell, 1999), having access to sources that are seldom brought together anywhere else. They may have close ties to local communities and to grassroots groups while at the same time being well-informed about the functioning of government and even international organisations and decision-making processes. At the same time cheap, prolific information and communication technology (ICT) has broken governments' informational monopolies and realigned relations with non-state actors including NGDOs, for example, by enabling them to 'reach behind' national borders and force governments to become responsive to international public opinion (Mathews, 1997, p.51).

Information is also a strategic resource for NGOs aiming at empowerment of the poor (Grimwood-Jones and Simmons, 1998). To be effective, informational flows need to be a two-way process: on the one hand ensuring the voices of the poor are heard by policy-makers, and on the other that information about government, policies, services and benefits reach the poor (Madon and Sahay, 2002). Similarly, NGDOs increasingly participate in two-way exchanges with business, acting as indicators of public opinion while in return receiving insight into business perspectives (Heap, 2000).

NGDOs' diverse information linkages can make them a valuable resource for local people, as communities benefit from being able to access a wide range of different information sources (Brown, 1991). NGOs increasingly pay attention to informal and locally derived sources such as folk media, drama, storytelling and voice recording (Edwards, 1994; Mundy and Compton, 1995) and informal channels (Madon and Sahay, 2002). The mixture of formal and informal sources and communication channels can promote the inclusion and participation of marginalised groups such as slum dwellers in consultations with government (Madon and Sahay 2002). At the other end of the spectrum NGOs which operate internationally or which have links at supranational level can access play a crucial role in local – global information transfers (Madon, 1999).

2.2   Epistemic Roles

The epistemic dimension of knowledge is concerned with the individual, organisational and social processes by which beliefs are formed. Perhaps the most obvious and ubiquitous epistemic demands on NGDOs are in the processes of planning, executing and evaluating action. All groups have to have methods for deciding what to do, how to do it and whether it is working. Often the methods remain implicit – at least until problems arise. However, demands from donors and partners, and general requirements for accountability in the sector, are increasing the need for explicit methods. This is most advanced in the sphere of monitoring and evaluation (M&E), often perceived as problematic and a source of criticism for NGDOs, which are generally seen as not being very good at it (Brett, 1993). Although M&E has traditionally been seen – and sometimes resented – as a donor imposition, sustainable development work needs local management and M&E is therefore as important for recipients as for donors (Mikkelsen, 1995). The area remains fraught, with many commentators pointing out methodological problems, weaknesses of NGDO evaluation and the difficulties inherent in epistemic decisions such as what information to collect, how to collect it, who should collect it, how and by whom it should be processed. During the 1990s a shift occurred away from progress reviews and impact assessment by 'neutral' outsiders' (Mikkelsen, 1995) to more process-focused, participatory and interpretive techniques. These have been defended on epistemic grounds, Chambers (1994), for example, arguing that they can be more reliable than surveys in delineating dimensions of poverty.

Participatory approaches have however recently come in for significant criticism, for ignoring vital aspects of development such as political and empowerment dimensions. Clearly there is a need for ongoing critical and creative research into evaluation techniques. Fowler (2000) argues against the establishment of a development 'mono-culture' and stresses the key role of NGOs working with local agents to develop innovative cross-cutting approaches rather than narrow conformity of methods.

Epistemic roles extend beyond the internal needs of the organisation and its partners. NGDOs are also often important providers of knowledge tools and techniques to the community. These organizations' proximity to and experience with those they serve, contributes to their valuable – yet often overlooked – roles as community facilitators. In that role, they serve in an important position of early adopters and arbiters of tools, resources, and practices most likely to succeed in addressing individual and community needs. More resources (technological and otherwise) should be deployed to places where the need is greatest for innovation to address growing numbers of underserved populations in an effective and efficient manner, yet where

demand is suppressed due to lack of awareness and understanding as to their availability or relevance (Turner, 2002).

Another epistemic role for NGDOs is facilitating testimony, dialogue and dissent at grassroots level (Edwards et al., 1999). Processes of public dialogue are one of the main ways in which social interactions can facilitate knowledge (Goldman, 1999) and NGOs are often key contributors in civic participation and democratic, dialogic cooperation among parties involved in development (Edwards, 1999; Fowler, 2000). These processes however, are not unproblematic and NGOs have themselves been criticised for 'an eclectic outpouring of ideas and views, without organised and coherent debate' and for inability to ensure equitable participation (Pearce, 2000).

Dialogue processes are seldom quick and decisive, particularly in political discussions and where there are numerous stakeholders. The existence of mechanisms for ongoing political exchange both within communities and between communities and policy-makers has been considered a key development indicator, and NGDOs key players in these processes (Brown, 1991; Madon and Sahay, 2002). Such roles depend crucially on epistemic virtues such as reputation, trust, integrity, which in turn depend on high standards of truthfulness, error recognition, open-mindedness to new ideas and ability to learn (Chambers, 1994; Edwards, 1997; Edwards et al., 1999; Heap, 2000). Typically third sector organisations have trust advantages over other organisations but they can be discredited by poor research (Heap, 2000) or come to be viewed with suspicion by the poor owing to their perceived wealth (Holloway, 1999) or closeness to government, business and funders (Pearce, 2000).

2.3   Conceptual Roles

At the conceptual level, knowledge analysis is concerned with categorising and sense-making activities, for example the development of causal, ethical or structural understandings of the world. This level presents probably the greatest challenges of all knowledge work since it is here that high-level cognitive skills are most required, such as imagination, synthesis and the generation of new and possibly contradictory or controversial ideas.

One key area of conceptual activity in NGDOs is advocacy work. Activities such as lobbying, research, publishing, policy input and helping to draft ethical guidelines and codes of conduct involve exchanges and networking across boundaries (Edwards and Hulme, 1992; Meyer, 1997; Madon and Sahay, 2002; Thomas et al., 1998) and in some cases explicit attempts to change others' existing theories of the domain. On the three-dimensional analysis presented above, advocacy requires efforts on all three dimensions. Campaigns have to be backed with high quality, relevant information, both to plan effectively and to support the arguments being

made. At an epistemic level, advocacy organisations must be trustworthy and seen to be so. They must present high-quality evidence and argument, and ensure methods are reliable and transparent. Fundamentally, however, advocacy is about changing conceptual structures such as underlying values and outlooks, sometimes in ways that run counter to vested interests or long-standing prejudices. Given these demands it is not surprising that many NGDOs have relatively weak advocacy skills (Manji et al., 1999)

The same factors that give NGDOs informational advantages can also be a source of conceptual wealth, for instance the simultaneous attachment to the local and engagement with the global that characterises many international NGOs (Madon, 1999). Exploiting these resources can allow NGDOs to bridge conceptual divides and act as 'translators' between different groups. In theory NGDOs should be fertile generators of new conceptual frameworks, both for internal consumption – reconceptualising their aims and activities for instance – and for ideas to feed into the wider development community, public understanding and government policy.

In practice, NGDOs do not always deal well with conceptual issues, often failing to clarify their concepts and make meanings clear when this would result in controversy (Pearce, 2000). At a macro level, there is also the need to question the fundamental assumptions of development itself and to look for new conceptions (Pearce, 2000). Edwards (1999) speaks about the need for a 'paradigm shift' in development work, and the need for NGDOs to develop 'strategic understanding' of global issues (Edwards et al., 1999). To deal with this NGDOs need to develop stronger theoretical bases on which to ground their identity and actions (Pearce, 2000).

Developing local theoretical capacity is important outside the development community too. Escobar, for example, argues that 'the belief that theory is produced in one place and applied in another is no longer acceptable practice. There are multiple sites of production and multiple mediations in the generation and production of theory' (Escobar, 1995: p.221). NGDOs are obvious candidates for participating in such developments yet, for all the talk of new knowledge and informational roles, little attention has been paid so far to their potential as agents of social-theoretical change.

3 DIAGNOSING PROBLEMS, IMPROVING PERFORMANCE

Knowledge failures and errors in NGDOs have recently come in for comment. The reasons for error are complex, and one application of the three-dimensional framework is in generating more systematic and epistemically grounded analyses of knowledge problems. Chambers (1994),

for example, analyses knowledge failures in terms of the distorting effects of power relationships. Subordinate people ('lowers') distort their words and behaviour in the presence of powerful 'uppers' such as agency workers; uppers accept the distortion at face value since it conforms to their expectations and interests. In terms of the three-dimensional model, the process by which uppers move from receiving information (what they see and hear from lowers) to forming beliefs is highly unreliable. Since they lack (or fail to look for) meta-information about the motivations and outlook of informants, their processes of judgement and inference are faulty: in terms of the three-dimensional view, the epistemic status of uppers is poor. But so is their informational status, since although they do receive information from and about lowers, it is information about lowers *in the presence of uppers*. What uppers need – but cannot access – is information about the lives of lowers undistorted by the presence of uppers. The information uppers have fails to meet the criterion of relevance and, worse than this, it looks very like relevant information, making it easy for uppers to draw the wrong conclusions. In this way uppers and lowers perpetuate self-sustaining 'systems of misinformation'. If Chambers is right, uppers are probably conceptually challenged as well, since they fail to interpret information correctly partly because of fallacious preconceptions (conceptual structures).

Similarly, a three-dimensional analysis can help to categorise and ground the analysis of dangers inherent in what Thomas et al. (1998) term the 'finding out fast' research of NGDOs with restricted time and resources. Problems such as static conceptualising (preconceptions about the nature of the situation), assuming the problem is already known, and not involving participants in defining the issues are aspects of the conceptual dimension of knowledge. Routinised (often inappropriate) choice of techniques is an epistemological matter. Ignoring literature, secondary data and difficult sources are informational failures.

A three-dimensional approach can also be used to improve practice. As argued above, NGDOs are often well placed to access different conceptual perspectives and different understandings of a situation, having links at many different levels, from grassroots to international institutions, and across many sectors (policy, scientific, religious, academic, etc.). These relationships are powerful knowledge resources. Equally important for conceptual development is the need for self-awareness and a critical attitude. All institutions can succumb to groupthink, and the values and convictions of third-sector organisations can, as in the public or private sector, be antithetical to knowledge.

At an epistemic level, too, NGDOs can benefit from a more critical approach. Limited time, skills and resources mean that academic standards of data collection, analysis and corroboration may be unattainable (Thomas et al., 1998). Nevertheless, there is a need for rigour in obtaining and

interpreting evidence, and for fully-fledged investigations into causal relationships ('how and why things happen as well as what has happened') (Thomas et al., 1998). Methodological diversity can be a strength of NGDOs (Fowler, 2000) but researchers under pressure may apply techniques unthinkingly and in over-standardised ways, yielding superficial results (Thomas et al., 1998).

Compared with achieving high conceptual and epistemic standards, improving informational status is generally relatively straightforward. Of course, there may be crucial information that an organisation cannot get hold of or information that it would like to disseminate but lacks resources to publish, but these are the kinds of problems third-sector organisations typically excel at resolving, requiring practical if unconventional solutions.

Knowledge is not just a resource within NGDOs; for many it is part of the aim as well as the method, product as well as process – for example, when the organisational aims include educating beneficiaries, the public or policy makers. Improving knowledge status in such cases does not mean just achieving internal conceptual, epistemic and informational development; it may mean a vast range of activities, including providing information to outsiders such as clients, the media or other NGDOs; facilitating dialogue in the local community or among development agencies; or bringing about conceptual shifts in policy-makers, the public or international agencies such as the World Bank. A number of writers have pointed out the limited successes actually achieved by NGDOs in influencing policy as opposed to carrying out projects (Edwards and Hulme, 1995; Edwards, 1997; Madon, 1999). Such activities themselves demand specialised knowledge and skills.

For a variety of reasons, then, if NGDOs are to be effective knowledge organisations far more attention needs to be paid to developing core informational, epistemic and conceptual capabilities. It is often suggested that ICT and, particularly in the context of globalisation, computer networks, have a crucial role to play. The final section of this paper shows how here too the three-dimensional approach can help to delineate some key issues.

4   NETWORKS FOR KNOWLEDGE

The use of ICT to support knowledge activities in NGDOs has been much discussed, particularly as professional management practices have entered the sector, bringing with them the language and tools of knowledge management, knowledge sharing, communities of practice and learning organisations (see for example Hunt (2000) and Van der Velden (2002)). All the associated technologies have knowledge strengths and weaknesses that a three-dimensional analysis can help to identify: databases, for example, may be informationally effective, but they assume preexisting and unproblematic

conceptual categories. They also suffer from a serious epistemic defect in that originators and receivers may know virtually nothing about each other (see Goldman (1999) for a philosophical account of the importance of mutual knowledge). Originators may have little incentive to produce high-quality content since features such as anonymity, separation in time and place from receivers, lack of emotional and social contact with receivers all remove important incentives. This paper is not concerned with ICT generally, however, but specifically with networks.

Even before Internet access became widely available to southern NGDOs writers such as Brown, started to show an increasing awareness of the importance of networks, describing 'linkage indicators' as a crucial aspect of evaluating community development (Brown, 1991; Madon and Sahay, 2002). From the early 1990s researchers began to recognise the networking potential of the Internet and other ICT for facilitating connections between organisations and for organising collective action (Annis, 1992; Salamon, 1995). Whether electronically based or not, networking aspects of NGDO activity are now stressed by many researchers: Madon and Sahay, for example, speak of intermediary NGDOs as information 'hubs' having both vertical linkages to government and grassroots, and lateral connections with other NGDOs and the media (Madon and Sahay, 2002). Madon highlights the potential for learning in networks, which enable organisations to benefit from outsiders and to draw on extended resources beyond themselves (Madon, 1999). Nath has developed what he calls a 'knowledge networking' approach to development founded on an Internet-based model (Nath, 2000). And Castells has proposed a view of networks as inherently democratic, transferring information, knowledge and power from the centre to the periphery, and bringing about structural social change (Castells, 1997) – as when the Zapatistas were able to use the Internet to mobilise worldwide support against repression by the Mexican government. Other authors identify networks and the Internet as having been instrumental in the growing importance of NGOs and a 'levelling factor' in relations between NGOs and the business and state sectors (Mathews, 1997; Bray, 1998; Winter and Steger, 1998; Heap, 2000).

At the same time, a number of intermediary and capacity-building organisations have emerged offering specialist Internet services and products to NGDOs. The Association for Progressive Communications, one of the first and still one of the largest, has been joined by many others such as One World and Kabissa, and even some very small-scale local initiatives such as Kznaidslink which offers a web presence to AIDS groups in the KwaZulu-Natal province of South Africa. Organisations such as IDRC and Bellanet have long hosted electronic discussion groups on development topics, and most international development conferences now run parallel electronic conferences, permitting otherwise excluded voices to be heard. Extensive

technical training is also available online and, to a lesser extent, training in more abstract informational skills, such as the Distance-Learning Course for Online Efficiency run for NGOs by Dr Burkhard Luber of The Threshold Foundation in January-April 2002.

Clearly the Internet is vitally important to NGDOs for many reasons, and it might seem as if there were a relatively straightforward equation between networking technology and knowledge gains[1]. In fact, the situation is more complex, and there are many factors that compromise the Internet's knowledge-supporting capabilities. Goldman (1999) diagnoses weaknesses at informational, epistemic and conceptual levels that many users will recognise: vast, uncatalogued resources; unreliable and even deliberately deceptive communications (witness the rapidity with which false virus warning circulate); a tendency for networks and electronic forums to become introverted, reinforcing prejudices rather than opening up spaces for critical argumentation; loosening of the social constraints on truth-telling that operate in face-to-face communication; anonymity, leading to reduced accountability; lack of meta-information by which to judge accuracy and integrity of information; hidden commercial – and other – interests and motivations; lack of editorial controls and low barriers to entry; hidden selectivity of hypertext linkages.

Many of Goldman's theoretically derived concerns are reflected in empirical studies of Internet use among NGOs. Madon diagnoses widespread problems of information overload and underdeveloped systems for information seeking, storing, transferring and disseminating (Madon, 1999), and Edwards (1994) points to the negative impact of large quantities of email adding to the already severe workload of hard-pushed NGO employees. Surman (2001) finds NGOs experiencing multiple difficulties in making effective use of the Internet, and Song (1999) argues that while the Internet increases research efficiency and collaboration it also increases workload and resource requirements.

Of course, the fact that a technology is not perfect is not an argument for rejection but rather for users acquiring greater expertise and skill. In the case of knowledge and networking tools, the expertise and skills required are complex – partly technical but to a large extent also cognitive and communicative. There is evidence, however, that even on a technical level many NGDOs are only gradually moving beyond basic tools such as email and static web pages and very few, even among northern agencies, are making extensive use of more strategic applications such as online publishing, lobbying and discussion forums (Saxton and Game, 2001). Knowledge about the technology and how to use it is lacking, and even

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[1] Edwards (1994), for example, speaks of the Internet bringing about 'a paradigm shift in storage, retrieval, handling and dissemination of information.'

when it exists there is often a lack of technical skill to implement it (Surman, 2001). We have already seen that higher-level skills such as research, analysis and conceptual development are extremely demanding, even from a conventional perspective. Manji et al. (1999) found that many NGOs recognise a need for training in knowledge aspects of networking technology such as using the Internet for research, and they diagnosed a need for applications for democratic participation. However, with a few exceptions such as information seeking and research networks we have hardly begun to discuss the use of Internet technology in supporting the knowledge-based activities that lie at the heart of the new roles being adopted by NGDOs.

Goldman (1999) suggests some starting places: better use of search engines and intelligent agents; reliance on named and accredited sources and websites; more use of email and other interactive applications (allowing epistemically valuable contact between communicators and receivers); hypertext to help structure an argument or link to supporting evidence; promoting open and active discussion groups where the seeds of conceptual change, not just information exchange, may be sown[2]. These ideas of course need specialist application to make them relevant to the work of NGDOs, a task that is likely to require collaboration between academic researchers, capacity-building intermediaries, and NGDOs working in the field. It is perhaps asking a lot, but without integrating informational, epistemic and conceptual capacities into technological programmes NGDOs risk duplicating familiar errors and failures, albeit with advanced technology.

Perhaps the most fundamental problem in developing an integrated approach to networks (as knowledge and as technology) is lack of recognition that there *is* a problem: in many organisations the connection between networking and achieving social goals remains (Surman, 1999). Making those connections explicit is a job for technologists, epistemologists and development theorists to work on together.

5   CONCLUSION

The knowledge and informational aspects of development work, and specifically of activities undertaken by NGDOs are receiving unprecedented attention. In the realm of service provision but even more so in their growing advocacy and capacity-building roles, NGDOs depend vitally on information

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[2] In similar vein Bray (1998) gives the example of an Internet discussion group on NGO-business relations hosted by Newcastle University www.mailbase.ac.uk/lists/business-ngo-relations, and Shell, which has used its website to acknowledge and openly discuss controversial issues.

and knowledge, both for their own internal processes and functioning, and as part of their explicit external goals. This poses a challenge – the need for new skills, for research and sometimes for high-level conceptual thought. In addition, knowledge goals may be external in that the NGDO may aim to change the external information environment, to bring about a shift in someone else's conceptual framework, or to change donor-driven methods of evaluation. It is not enough for NGDOs to be good at finding things out themselves; they have to be able to communicate insights to others and sometimes to persuade others to change their views – perhaps in opposition to vested interests and long-standing assumptions. Sometimes this may be a relatively unproblematic matter of information provision within existing categories and arrived at by well laid down methods. In other cases, it may be much more demanding, and the categories and methods may themselves be under investigation. A whole range of new skills and expertise may be required, spanning everything from information acquisition, storage and dissemination, to methodological evaluation and conceptual development.

At the same time that attention is focusing on their knowledge roles, NGDOs are coming under criticism for failures and errors. It is vitally important to understand why such failures happen, and to recognise the enormous demands that knowledge roles impose on organisations and individuals. NGDOs generally work under severe internal and external constraints that can mitigate against effective knowledge development. I have tried to show how an analytical approach that separates out various key dimensions of knowledge can help us to diagnose failings and pressure points – and, I hope, suggest ways of improvement. Not all the remedies lie in NGDOs themselves. Donors and partner organisations also have a role to play – for example by being more open to alternative, locally generated and locally meaningful forms of monitoring and evaluation. This is not an argument to dispense with rigour or objectivity but rather to look at different methods and evaluate them open-mindedly as possible routes to knowledge.

As well as taking on new roles, NGDOs are finding their structures and forms of organisation and association changing. Networking models are gaining increasing recognition, driven partly by Internet use and partly by the growing emphasis on information and communication work. A whole layer of intermediary and northern NGOs now exists with the aim of enabling southern, community and grassroots groups to make more sophisticated use of networking technologies and applications. Networks, however, are defined by users and their actions, not by technology alone. A three-dimensional analysis helps to show why and highlights the need to integrate technological capacity-building into a broader knowledge project involving informational, epistemic and conceptual development. So far, the amount of research, help and support available for this is negligible by comparison with the attention paid to technology itself. It is time to change

this, and to start paying more detailed attention to the complex intangible dimensions of knowledge.

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