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Publisher: Routledge

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Information Technology for Development

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/titd20>

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Dorothea Kleine ^a, Ann Light ^b & Maria-José Montero ^a

^a UNESCO Chair/Centre in ICT4D, Department of Geography, Royal Holloway, University of London, UK

^b School of Design, Northumbria University, UK

Available online: 16 Jan 2012

To cite this article: Dorothea Kleine, Ann Light & Maria-José Montero (2012): Signifiers of the life we value? - considering human development, technologies and Fair Trade from the perspective of the capabilities approach, *Information Technology for Development*, 18:1, 42-60

To link to this article: <http://dx.doi.org/10.1080/02681102.2011.643208>

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Signifiers of the life we value? – considering human development, technologies and Fair Trade from the perspective of the capabilities approach

Dorothea Kleine^{a*}, Ann Light^b and Maria-José Montero^a

^aUNESCO Chair/Centre in ICT4D, Department of Geography, Royal Holloway, University of London, UK; ^bSchool of Design, Northumbria University, UK

This paper argues that the capabilities approach challenges us to co-design technologies with users in a way that expands the freedom of the user to live the life they themselves value. The aim is to show, with the help of a concrete example, our attempt at applying the capabilities approach to an information and communication technology for development (ICT4D) action research project. The objective of the Fair Tracing project was to support both producers and consumers in their decision-making in Fair Trade value chains by using information and communication technologies to provide them with information. Based on survey data, formal and informal interviews, group meetings, accompanied shopping and a design workshop with potential users, the project applied the bottom-up, participatory approach to technology design that the capabilities approach demands. Key challenges that were encountered included the competing capabilities of making informed buying decisions and of having more time. Action research and participatory design create important and challenging test settings for introducing the capabilities approach in ICT4D work.

Keywords: capabilities approach; Choice Framework; Fair Trade; ethical consumption; traceability; participation

1. Introduction

Technologies can be a source both of freedom and of unfreedom. From a capabilities approach perspective, development itself is defined as the freedom that people have to live the lives they have reason to value (Sen, 1999). Thus, technologies can be drivers for and against such development.

Technologies become sources of unfreedom, for example, when first people who would like to use them in order to better lead the lives they value cannot access them, while others can; and second, when people feel or are forced to use technologies which do not reflect the lives they value. The challenge facing “information and communication technologies for development” (ICT4D) is thus twofold: first, to work toward a situation in which people can have access to information and communication technologies (ICTs) if they so wish and, second, to consider whether and how new technologies relate to the lives that people value, individually and collectively. This paper asks how the capabilities approach can be applied to ICT4D, and in particular to ICT4D action research. We draw on one specific example, the Fair Tracing project, in which we used the capabilities approach, as expressed through the Choice Framework (CF), as a way of understanding the purpose and process of our action research work.

*Corresponding author. Email: dorothea.kleine@rhul.ac.uk

Annika Andersson, Åke Grönlund and Gudrun Wicander are the accepting Guest Editors for this article.

The Fair Tracing project was embedded in debates around ethical consumption and so it is worthwhile to briefly point out a possible tension between work on ICT innovation and ethical consumption: The question about what technology it is that people want to integrate into their lives is fundamentally different from the relentless and environmentally unsustainable rate of product innovation in ICT hardware and software, for example, mobile phone hand-sets, which is currently taking place as a function of a capitalist economy based on mass consumption. While it would be incorrect to claim that the poorer majority of the world's population have the financial means to "buy in" fully to these relentless upgrade cycles, it is equally naïve and indeed patronising to assume that technology as status symbol and technological innovation as a motor of consumption are entirely "Northern" phenomena. Indeed, several projects under the ICT4D banner have as much to do with companies exploring new markets in the global South as they have with development.

Amartya Sen points out that technological advances have long since been associated, and sometimes equated, with development (1999, p. 3). In the history of development co-operation, group-think about successful development models has a long tradition – "enabling environments," "good governance," "gender empowerment," "social capital" and "micro credit" are only a few examples of development discourse topics that have been raised, hyped and then gently passed over, or co-opted and hollowed out or indeed constructively integrated into the discursive space of development "common sense" – the space from which it is safe to draw policy recommendations and project proposals. For some time, proponents of ICT4D have been trying to move ICTs into the discursive space of development "common sense."

Using ICTs for education, for health or for improved local government services went through a phase of hype and has since then quickly moved toward the "common sense" fold, so that government officials may be excused for feeling a pressure to adopt the latest ICT "solutions" in classic development fields such as education, health and local government services. However, government officials buying particular e-learning models or e-government systems are effectively reshaping the lives of millions of people – students, teachers, citizens, public servants – often without sufficient consultation. Equally, ICT4D researchers who pilot or "drop" a particular technology into communities in the global South may be well-meaning, but they are effectively operating with a paradigm that more or "better" technology is better for people's lives, often before having undertaken sufficient efforts to understand what lives it is that people value. There is a focus on "digital inclusion," on helping disadvantaged people gain access to technology, which relates to the first concern about technology and freedom to access outlined above, but there are few projects who convincingly try to tackle the second concern, the question of how new technologies relate to the lives people value, individually and collectively.

This paper argues that the challenge that the capabilities approach poses to ICT4D is the focus first on people's freedom to lead the lives they have reason to value. This has different implications for different kinds of ICT4D projects. For projects involved with the actual creation of a new technology, it will be necessary to consult closely with people, potentially in a participatory design process, about what lives they value and what role they see for the technologies concerned. As one of us has argued elsewhere (Kleine, 2011) the more clearly the purpose of a technology is pre-defined, the more citizen-users need to be involved in its design in a participatory way, if we are to avoid a situation in which people are forced to use a technology in ways that are at odds with the life they value.

The ethos of the capabilities approach points us toward participatory action research and participatory design, and in this paper we reflect on our attempt to apply such participatory approaches in an ICT4D project. In order to do this, we need to first face up to the challenge of operationalisation which the capability approach (CA) itself represents. It is conceptually very rich but needs careful translation into a practical context. In this paper, we use the

Choice Framework (CF) developed by one of the authors (Kleine, 2007) as a translation tool allowing us to operationalise the CA. By using such frameworks, we are able to map a complex process view of development which will allow us to trace the logic of an intervention, starting with the lives people desire for themselves. Such an intervention must be justified at least through consultative, if not transformative forms of participation. Once this conceptual work has been done, we can engage in co-creating, in a participatory way, the appropriate technology.

To illustrate this multi-step challenge, the paper will discuss the experience of the Engineering and Physical Science Research Council's (EPSRC) Fair Tracing project, an interdisciplinary action research project which tasked itself with creating a pilot system which responded to specific desires for information on the part of Fair Trade (FT) producers in the global South and FT consumers in the global North. The project had the potential to break with the common ICT4D project mould in two exciting ways. First, it was a project which did not restrict ICT4D to so-called "developing" (as opposed to "developed") countries. Fair Tracing tried to further human development in India, Chile and the UK. Second, it brought together researchers with expertise in participatory action research and participatory design with a clear commitment both for discussing people's needs before creating a technological artifact and for creating this artifact in a design process with participatory elements.

This paper is structured in six parts. After this introduction, the second section will give an overview of the links that have been already been established between the capabilities approach and ICT4D. Section 3 explains the CF as a way of operationalising the CA for project as well as policy level. In Section 4 one specific action research project, the EPSRC Fair Tracing project, will be explained, followed in Section 5 by a careful mapping exercise tracing the project and its intended and unintended effects on the conceptual map of the CF. Section 5 weighs what steps have thus been achieved on the journey toward connecting the CA and ICT4D and outlines some of the challenges that still lie ahead, before the paper ends with a short conclusion.

2. The capabilities approach and ICT4D

Human development, for the purpose of this paper, is understood as a process of expanding the real freedoms that people enjoy to lead the lives they value (Sen, 1999). In Sen's words, "Focusing on human freedoms contrasts with narrower views of development, such as identifying development with the growth of gross national product, or with the rise in personal incomes, or with industrialization, or with technological advance, or with social modernization" (1999, p. 3). While Sen recognizes that "industrialization or technological progress or social modernization can substantially contribute to expanding human freedom," these are not seen as ends in themselves. Fundamental to Sen's version of the capabilities approach (Sen, 1980, 1984, 1992, 1999) are the two concepts of "functionings" and "capabilities." Functionings are the "various things a person may value doing or being" (1999, p. 75), while capabilities are "the alternative combinations of functionings that are feasible for her to achieve" (1999, p. 75). The aim of human development is thus to expand people's capabilities.

Unlike some other scholars working on the capabilities approach who favor *a priori* lists (e.g. Nussbaum, 1999), Sen insists on his radical bottom-up approach of letting people themselves identify the capabilities they value. The action research project outlined in this paper is in line with this radically participatory, bottom-up approach. One of the advantages of such an approach in an ICT4D context is that it reduces the risk of "pushing" a technology at people without them having a need for it. The challenge of using this approach in ICT4D work is that people who have never used a particular technology will have to imagine what capabilities it could support, or indeed decide if the use of the technology *per se* is a valued capability to them.

There are several critiques that have been levelled against the capabilities approach, and one prominent one argues that the conceptual richness of the approach makes it hard to operationalise. However, several scholars (e.g. Alkire, 2002; Alsop & Heinsohn, 2005; Bebbington, 1999; Clark, 2002; Gigler, 2004; Nussbaum, 2000; Robeyns, 2003a, 2003b) have contributed significantly to its operationalization. This paper reviews first steps to applying the CA in action research in the area of ICT4D.

An increasing number of scholars have considered the value that the capabilities approach could have for the field of ICT4D. Garnham (2000) was one of the first to consider the relationship between communication, entitlements and a range of functionings, arguing that the focus needed to be on people's ability to use technology in practice. Mansell also pointed out the relevance of Sen's work for considering social justice and ICTs (2002). Johnstone (2007) and Oosterlaken (2008) refer to the capabilities approach at an ontological level in their work. Madon (2004) used the capabilities approach as an evaluative space for her analysis of e-government initiatives in India. Other scholars (Zheng & Walsham, 2008) have used capabilities deprivation as the central concept in their case study-based analyses of ICT policies. When considering how to further operationalise the capabilities approach for ICT4D, Gigler (2004, 2008) developed a framework which also drew on the Sustainable Livelihoods Framework in an analysis of projects with indigenous communities in Latin America. Alampay (2006) used the capabilities approach in an analysis of ICT ownership and access and pointed to the difficulty that marginalized groups may not recognize the opportunities that new technology may offer them.

However, others have pointed out that inclusion in the user community of a new technology can have negative consequences if the structural setup disadvantages less powerful users (Kleine, 2009; Zheng & Walsham, 2008). Inspired in part by the capabilities approach, scholars such as Byrne and Sahay (2007) have stressed the importance of participatory design in their action research project on community-based child health information in rural South Africa. Based on another experience of action research, this paper will extend their argument and show how participatory practices with users play an essential role if technology is to be used for human development, understood as an expansion of capabilities.

3. The CF – mapping the development process toward human development

The CF is one step on the way toward operationalising Sen's CA to development. It was developed via an iterative research design from a study of the effects of ICT policies conducted by one of the authors (Kleine, 2007). However, it may also be of relevance in sectors beyond ICT4D. This section will briefly outline the CF, a more detailed account of its genesis can be found elsewhere (Kleine, 2011).

The CF draws on previous frameworks. In their attempts to operationalize the capabilities approach for evaluative research on the gender empowerment impacts of specific projects, Alsop and Heinsohn (2005) lay out a simple framework that shows how an actor's agency and the "opportunity structure" in which they operate lead to different degrees of empowerment which in turn leads to development outcomes. They define agency as "the capacity to make meaningful choices" (2005, p. 8) which is dependent on an individual's asset endowment, consisting of "psychological, informational, organisational, material, social, financial and human assets" (2005, p. 8). Individuals then use their assets to navigate an existing opportunity structure, made up of the "presence and operation of the formal and informal institutions" (2005, p. 9), which includes laws, social norms and customs. As a result of the interplay between agency and opportunity structure, "degrees of empowerment" arise, which is Alsop and Heinsohn's term for different dimensions of choice, including existence, use and effectiveness of choice. From these choices then flow development outcomes. If this is being envisioned as a

systemic framework, development outcomes may then have a feedback effect in that they may include changes to the “opportunity structure” or indeed to people’s asset portfolios.

The CF (Figure 1) is built on Alsop and Heinsohn’s original framework, but expands it in significant ways. Influenced by another systemic framework which tries to depict development as a process, the Sustainable Livelihoods Framework (DFID, 1999), the CF makes the resource portfolio of the individual visible and expands the set of resources to 10: material, financial, natural, geographical, psychological, cultural, social and educational resources; health and information (for definitions of these resources, see Table 1). It is important to note that this goes significantly beyond DFID’s set of largely tangible resources. Access to natural, geographical, cultural, social and psychological resources and information intersects in uneven ways with material and financial resources and thus offers the possibility that materially poor people may be able to mobilize other resources. Personal characteristics including age, gender and ethnicity impact on an individual’s resource portfolio.

In its systemic understanding of the process of development, the CF sees individuals as using their agency to navigate social structures, which have in turn been co-created by individuals. As Giddens (1984) explains, structure and agency are co-constituted, shaping each other. In the CF, structure is seen to include not only institutions and organizations, but also policies and programs, formal and informal laws, all of which have been recognized by Alsop and Heinsohn (2005) and DFID (1999). Ethnographic work with people of both genders in rural Chile showed that among the informal laws, gendered norms on the usage of time and space played a significant role (Kleine, 2007). Such norms may further differ for people depending on other factors rather than gender, for instance age or ethnicity.

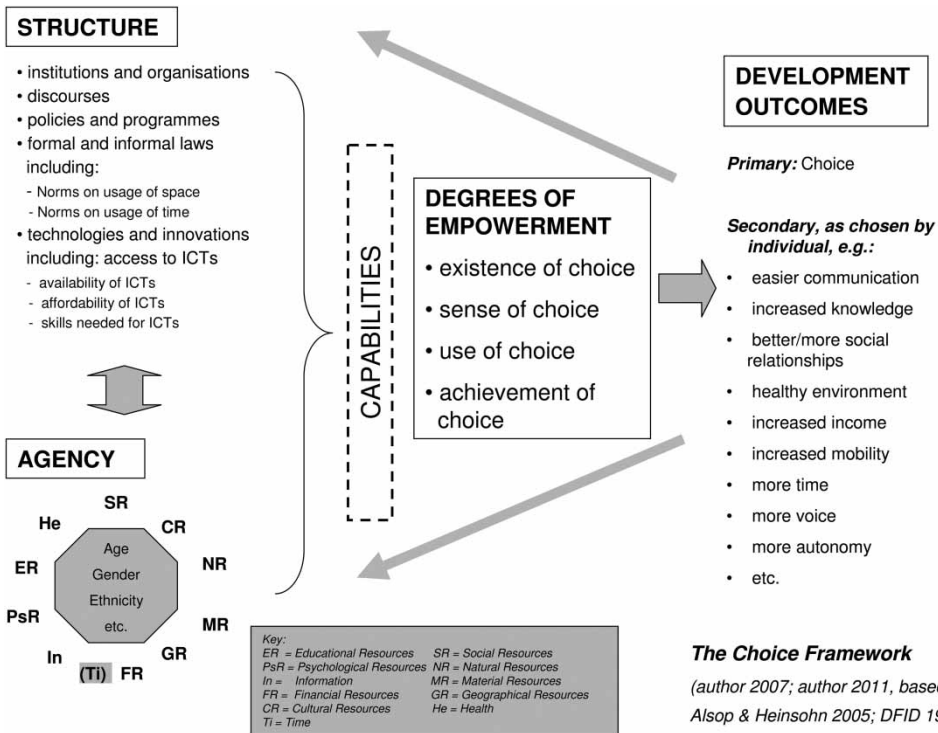


Figure 1. The CF.

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Table 1. Outline of the CF resources.

Material resources: These sum up the material objects owned, including tools, hardware, machinery and other equipment. They are also essential inputs in the production process

Financial resources: These stand for financial capital in all its forms (cash, savings, shares, etc.). The ability to obtain credit is a combination of the structural character of the banking rules and individual collateral

Natural resources: This includes issues such as geomorphologic and climatic conditions in a locality and related aspects such as soil quality, naturally available resources and access to water as well as the attractiveness of the surrounding nature

Geographical resources: Covers the practical implications of location and relative distances, and also includes the intangible qualities of a location, which Helbrecht and others have described as “geographic capital” (Helbrecht, 2005)

Human Resources: The term “human resources” has been used for decades in the economics and industrial relations literature. In the CF, this term needs to be disaggregated into *health* and education and skills (*educational resources*). Educational resources represent education and skills acquired through formal and informal means

Cultural resources: “Cultural capital” – which in the CF is called cultural resources – exists, according to Bourdieu (1986), in three states: an embodied state (the *habitus* a particular person lives in); an objectified state (objects such as paintings, instruments and monuments which only the initiated can use or appreciate); and an institutionalized state (prestige attached to, for example, academic titles or leadership roles)

Social resources: “Social capital” – or social resources – is included in both the SLF and Alsop and Heinsohn’s work. It has been both immensely influential and highly contested in development discourse (Harriss, 2001). For the CF, Bourdieu’s definition of social capital is used: “the aggregate of the actual and potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectivity-owned capital, a ‘credential’ which entitles them to credit, in the various senses of the word.” (1986, p. 249)

Membership of these groups can be defined by kinship, friendship, shared ethnicity or class, or informal commonality ties

Psychological resources: Alsop and Heinsohn (2005) recognize the significance of “psychological assets” and give as an example “capacity to envision”. More broadly, psychological assets may include self-confidence, tenacity, optimism, creativity and resilience. Spirituality or religious beliefs stand in complex interrelation with psychological resources – they can strengthen or weaken an individual’s psychological resources

Information: Alsop and Heinsohn list informational assets as a key resource. Heeks (1999) calls for putting information at the center for analysis of ICTs and Development, and Gigler (2004), adds “informational capital” to the capital portfolio. Access to information is the first step to knowledge acquisition, the process of filtering and transforming information into meaningful knowledge

The CF also recognizes the significant shaping power of discourses. The power of the discursive space of development “common sense” highlighted in the introduction to this paper is yet another example of the power of discourse. Discourses have liberating, transformative, legitimizing, normalizing, co-opting, ostracizing or erasing power in social structures at different scales. Moreover, they affect not only social structures, but people’s “thinkspaces”, the extent of their imagination, their sense of choice. Thus, discourses are identified as part of the structure and sense of choice is added as a “degree of empowerment.”

Finally, the CF draws attention to the important roles that innovation and new technologies, including ICTs, play in shaping our social structure. The Internet, mobile phones and most recently, social networking applications have proven powerful influences on our social, economic, political and cultural ways of being. They are examples of agency shaping structure and in turn of the changed structure affecting agency. In conceptualizing the role of technologies, the CF distinguishes, based on Gerster and Zimmermann (2003) different dimensions of access, including availability and affordability of ICTs, and the skills needed to use them.

The process described by the CF sees individuals as using their agency to navigate the social structure to be in a position of choice, to be able to choose the lives they have reason to value. Choice is conceptualized as being multidimensional: it has to exist (existence of choice), individuals have to be aware of it (sense of choice), they have to exercise it (use of choice) and then it may or not be effective (achievement of choice). These choices are directed at development outcomes. The existence of choice and sense of choice is a way to interpret capabilities in the Sen sense, while outcomes can be seen as achieved functionings. Following Sen's proposition that choice is both the principal means and the primary end of development, choice is also positioned as the primary development outcome. Other development outcomes depend on what lives people value, and thus what they value doing or being (Sen, 1999). In the radically people-centered perspective of the capabilities approach, it is people themselves who define the development outcomes, and no well-meaning government or development agency can make these decisions for them. Sen distinguishes between "agency freedom" and "wellbeing freedom" (Sen, 1985) – the latter could be achieved by a benevolent powerful actor making choices *for* the people, while agency freedom, in other words "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important" (1985, p. 203), is based fundamentally on people making choices for themselves.

The CF is an attempt to operationalize the CA. It dares to offer a simplified but relatively comprehensive conceptual overview of the process of human development from the perspective of the capabilities approach. It may be understood as a step toward operationalizing this approach, and it should be seen as a "living tool," to be further developed, conceptualized and altered. As it is, it can serve three principal usages: first, it can be used to analyze the goals of projects and policies against the foil of the capabilities approach. Second, it can help understand and map development interventions as systemic processes, and third, it can be used as a conceptual guide when considering, in a planning or action research situation, what elements of the agency or structure side might be purposefully altered in order to improve people's ability to make choices and lead the lives they value. An example of this third use is what will be demonstrated later in this paper.

While it may be a significant step toward channeling the capabilities approach's conceptual richness toward actual application in ICT4D and other sectors of development practice, the CF does not solve some of the most significant conceptual challenges inherent in the approach itself. One of these challenges is how to account for the frequent need for collective action to achieve many individuals' personal desire for change, and, on the flipside, protect individuals from having to participate in the world that other individuals, collectively, want to live their lives in. In the case of technologies such as the Internet and mobile phones, where network effects play a key role in determining the take-up, take-off and survival of particular technologies, this question becomes very significant. Phones and social networking sites are only relevant to the degree that other people beyond the individual user participate in them. Equally, when the social norm shifts and everybody is participating in Internet usage, email and social networking media such as Facebook or Twitter, there is mounting practical and social pressure for the individual to conform and join.

The following section introduces the ICT-assisted action research project which is then analyzed by applying the CF to it.

4. Action research: the Fair Tracing project

In a previous research project (Kleine, 2009) on the effects of Chilean ICT policies, Kleine argued that the new state e-procurement system was a source of unfreedom. It forced local public servants, who were making purchases in the name of local taxpayers, to alter their

buying behavior away from social and potentially environmental criteria toward a logic based primarily on price. However, it is always easier to criticise deficiencies or failures in the existing ICT4D policies and projects than to create less deficient or even successful policies and projects oneself. So in a subsequent research project, an opportunity arose to conduct action research to imagine a system which would, at least at an individual level, help consumers, this time individual citizens, to calibrate their purchasing choices so as to reflect the choice of the lives they valued.

According to the Co-operative Bank's Ethical Consumerism report 2010, 55% of UK adults¹ claim that they have chosen a product or service based on a company's behavior, up from 51% in 1999. 50% claim to have avoided a good or service based on a company's behavior, up from 44% in 1999. 34% of UK adults claim to have "felt guilty about an unethical purchase," up from 17% in 1999. 31% claim to have actively sought information about a company, up from 24% in 1999 (Co-operative Bank, 2010). Even if one accounts for a strong social desirability effect,² there is evidence of a growing sense of awareness and also of guilt surrounding shopping decisions. In almost the same time frame, sales of Fairtrade labelled products (labelled by the Fairtrade Labelling Organizations International, FLO) products grew from £21.8 million in 1999 to £799 million in 2009.

The Fair Tracing project (October 2006–September 2009) was conceived as a partnership between UK researchers and local partners in Chile and India, and as an interdisciplinary collaboration between computer scientists, an interaction designer, a political scientist and an economic geographer. It was funded by the UK Engineering and Physical Science Research Council (EPSRC). Despite not being funded from development assistance funds, it had both research and development objectives.

The project's objective was to use newly emerging and evolving technologies, such as the Internet, smartphones and radio frequency identification (RFID) tags allowing superior traceability in supply chain management, to give FT producers and consumers more information about the products that they buy.

Our partners were, in Chile, the FT wine co-operative Los Robles, and in India, coffee growers in the Karnataka region. The project design was an iterative, participatory design process spread over 24 months which involved interviews, group meetings and workshops with partners in the two countries and interviews and accompanied shopping with UK consumers. This was followed by a 12-month period of research dissemination.

From initial discussions with producers in 2006, it became clear that the producer partners in India were interested in finding out more about the market in organically- and shade-grown coffee and finding new and more direct ways to sell to consumers in the UK. The partners in Chile were interested in finding out more about the UK consumers who bought FT wine, and they were keen to demonstrate both the quality of their product and how successfully they had used the FT Social Fund which customers had supported by buying FT (FLO)-certified products. The Chilean partners were enthusiastic but also anxious that the project should not require additional time resources for data input from them. A detailed account of our work with producers can be found elsewhere (Light et al. 2009; Kleine, 2008).

During a first round of fieldwork visits, it became clear that the most novel and exciting technology, involving RFID, was not the most appropriate. The Chilean wine co-operative were not planning to implement this in the next few years. Working with RFID technology would have been more closely aligned to *research* objectives that the funder, the UK EPSRC would have recognized, alongside the *development* objectives of the project. Working on the frontiers of new technologies would have also been the easiest way for our computer science colleagues on the project to claim new contributions in their field. However, participatory work with our partners pointed away from choosing RFID and so, taking participation seriously, together

with our partners, the Fair Tracing team made a conscious decision not to pursue an RFID-based system but rather to work with the more appropriate technology, barcodes, which were already being used by producers. This was helped by the fact that, in 2006, high-end smartphones now had high-resolution cameras which could be used as barcode readers.

On the UK end, we wanted to find out whether consumers saw “having more information about the products they bought” as a valued capability and whether our envisaged system might increase this capability. We worked with consumers in three ways.

1. At a FT wine tasting event at the London Museum of Wine, we administered a short survey. This showed how respondents ranked ethical criteria such as decent price paid to producers, certified “Fair Trade,” eco-friendly packaging, food miles, overall carbon footprint, certified “organic,” within a portfolio of other buying criteria such as quality, cost, impact on my/my family’s health, good brand, attractive packaging and country of origin in terms of their importance. Such surveys are complicated by strong social desirability effects, but it was interesting to see that the relative positions of criteria shifted between the two different products we had asked about, wine and coffee.
2. At a College Science Open Day, we presented some prototypes developed with producers and conducted participatory exercises with visitors. Hundreds of people, mainly families from the local area with children of primary and early secondary school age, visited our exhibition room. One hundred and thirty-one people filled out a short survey form, tried out and commented on the early prototype or gave us short comments on the idea of the project.
3. At these events, and via an activist network (People and Planet) we recruited participants for three accompanied shopping trips with consumers. We took three people around two supermarkets, asking them to respond to the shopping opportunities with which each presented them and we recorded their responses.

4.1 *Ethical consumers and their choices*

Two out of three of these occasions brought us into contact with consumers who had effectively self-selected as “active ethical consumers.” One respondent, a mother of two in her thirties interviewed at Science Open Day (the more neutral event) expressed a sense of guilt when shopping “un-ethically,” based on aesthetics and price:

We went to Ikea and bought these lovely cushions with detailed tapestry and lovely embroidery. They were just £7. And then we got home and we thought – oh no, what was the age of the person who did this and what were they paid? And we felt awful.

This sense of discomfort and guilt contrasted with the good feelings people described they felt when they were buying what they saw as “ethical.” The capability of “being able to make ethical shopping choices” was thus linked to the capability “feeling good about my consumption choices.” Another respondent, a 19-year-old student, talked about her buying behavior during the accompanied shopping:

Well for instance I’ve got this little news agency across the road and I go in to talk to the people, and they are nice people and I buy from them. I know they make all their little croissants and I go there in the morning, and have breakfast, we have a chat and so on. And I kind of feel that is Fair Trade because I am buying from the local people that are making the things and you are kind of – although you don’t see them – thanking them for the work they put in. If you just buy Nestlé chocolate and Nescafé coffee it’s just a bit of impersonal and is like going to the high street chains and that kind of thing. At the end of the day it’s buying ethically. You could help multinationals to spread around more than what they already are. But if you would buy Fair Trade that would make a difference to someone properly.

The respondent went on to say that she liked knowing how her shopping affected the lives of other people. She said she used to be very conscious of buying ethically and locally, but now it was a habit and this made it “easier, I don’t have to think.” So while this respondent describes the life she values as one of shopping locally produced or certified FT products (she described both kinds of products as “Fair Trade”) from people she wants to support, she also recognizes the additional effort that switching to these ethical shopping decisions meant for her. However, once the new, “ethical” routines were established, she no longer had to think about them, and it became “easier.” Even for this highly motivated consumer-citizen, her goal was to *think less* about her shopping choices, once routines had been established.

For these “ethical” shoppers, which are a minority among UK consumers, the challenge is to balance the capability of “being able to make ethical choices” with the desire to achieve good value for money and not to spend so much of their time, energy and consciousness making these decisions. At the same time, they said they may want to find out more about the social and environmental aspects behind the product, but not in the time-pressured environment in the shop. There are already some mechanisms which help simplify the decision-making process, such as the FT Logo, awarded by the FLO. Most consumers trusted this label: “They have gone through a lot of trouble to set this system up – they will be on the side of small farmers, not the corporates” (female secretary in her 40s at Science Open Day). However, in 2005, the FLO label was also awarded to the first Nestlé product (Nescafé Partners’ Blend coffee), which would have surprised the student cited above who claimed to be actively boycotting Nestlé.

While the FT label was generally trusted, many consumers expressed a deep distrust of large supermarket chains, and their ethical claims. Tesco is a low to mid-end supermarket chain, shareholder owned and the biggest retailer in the UK. In interviews, this brand bore the brunt of the distrust. However, expressed distrust of supermarkets applied to all chains, with one exception: Waitrose, a mid- to high-end chain, part of the popular John Lewis partnership and, like its parent company, owned by its employees. One respondent said: “Waitrose – if Waitrose sell it, and it’s Fairtrade, then it’s real Fairtrade. I think they treat their workers well, don’t they?” (female, in her 40s, at Science Open Day). Another respondent suggested that Waitrose gave more information about products than Tesco or Sainsbury’s (female, in her 30s, at Science Open Day). The Waitrose brand enjoyed a remarkable degree of trust. Respondents who expressed different degrees of “ethical shopping” commitment universally praised the quality of Waitrose food, and this may have been augmented by the chain’s emphasis on local, organic and ethically sourced food products. Quality and “ethicality” did not have to be weighed against each other, although cost was seen as an issue. If it had not been for the price tag, shopping at Waitrose allowed people most easily to realize their capability of “being able to make ethical choices.” However, Waitrose is not as ubiquitous as other UK chains.

At the Science Open Day, where armchairs and laptops were available simulating a home environment, respondents asked many questions: “How long have they been growing the coffee – is there a tradition?”, “What were the conditions during picking?”, “Does the product have a future in the area where it comes from?”, “Who’s gonna benefit from it?”, “Where can I see where the money really goes?”. There was some degree of skepticism toward ethical claims and – in a calm environment – respondents were interested in exploring the stories behind products further. Another desired capability was “having more information on the products I buy.”

This behavior contrasted dramatically with the accompanied shopping activities we conducted in two supermarkets: the highly praised Waitrose, where there are many FT products to buy, and Tesco, focus of consumer suspicion in previous research. In each shop, we took a sequence of three shoppers to see the wine and coffee displays and buy one item from each.

We then asked them to comment on how they found the displays and the products among them. By contrast with the chatty interest we found at the Science Open Day, in the supermarket, people seemed overwhelmed by the products in front of them. Once in the shopping spaces themselves, shoppers showed a longing for simplification and routine. By giving the shoppers we accompanied £20 to make two purchases (they could keep the rest) we had effectively leveled and reduced, but not taken away, the consideration of price, which often serves as a key simplification routine. During the accompanied shopping for wine and coffee, in the actual shopping spaces, participants then struggled to weigh competing priorities such as attractive labels, perceived quality, price and FT certification, and worried about the amount of time they had to invest in the decision – “having time available” emerged as another key capability.

Based on this participatory work with users, the design specifications for the system emerged from the capabilities mentioned by consumers. The system should offer more information on the product and value chain, including ideally information on the tradition and future of the wine and coffee production in the producer country as well as, on working conditions and information on “where the money really goes.” Consumers were interested in a system which enabled quick and simple decision-making at point of sale in the supermarket but they also showed an interest in more qualitative information, photos, videos and stories to be accessed from home. Capabilities for consumers were having this information, being able to make informed choices and feeling good about their consumption choices. We had to recognize that other competing capabilities were getting value for money and having time available. The higher price of FT-labelled goods ensures the minimum price and social premium for the producers, so the focus would have to be on reducing the trade-off with the time available.

Producers in Chile and India were interested in telling their story, expressing pride in their product and also in the success in health care and education achieved with the FT Social Fund. They also wanted to find out more about consumers. However, they were keen to limit additional time investment for inputting data. Capabilities of the producers therefore included being able to express their views of their product, showing what they did with the FT money, and finding out more about UK consumers. For them, too, “having available time” was a competing capability.

4.2 *Designing a system*

Both producers and consumers had disclosed aspects of the lives they wanted to live, and their expressed desired capability, having certain kinds of information. So the Fair Tracing team began designing a system which could start meeting the diverse articulated needs for information. In the case of consumers, the lives people wanted to live were reflected in their attitudes, deliberations and feelings in the act of shopping. Deliberations on consumption choices, including questions that remained unanswered and compromises that left people dissatisfied, were fundamentally *signifiers of the lives people valued*.

In an iterative design process, we compared what each side, producers and consumers, wanted to share and what they wanted to know. In a participatory design workshop with producers, we mapped what information was already being generated to understand how best we could meet their demand to build a system which would not require them to invest additional time in data entry (Light et al., 2009). Responding to their desired capability of making their view of their product and FT work heard, we co-created three short YouTube videos with producers in which they spoke about the wine and their use of the FT Social Fund. We also co-created an annotated 5-photo story of the production process and supply chain. The Fair Tracing interface was to present “ethical” information, including any certification schemes

that applied to the product, and the “ethiscore” (a ranking provided by Ethical Consumer Magazine) that the product had achieved. Thus, we augmented the information available to consumers as well as building on the cultural resources of the producers (e.g. stories of the wine’s heritage).

The earliest interface offered an interactive Googlemap, which allowed consumers to trace the supply chain from Chile, along the west coast of South America, through the Panama Canal and across the Atlantic to a warehouse in a UK port and on into the supermarket. As well as this interface, stressing spatial and locational aspects, our designer also created alternative interface versions which told a temporal narrative along a timeline, and two social networking versions. A student on the project created a related i-phone application (for demos, see www.fairtracing.org).

The challenge of using the technology to empower consumers and producers with information had several dimensions:

- technical – creating appropriate and usable technology,
- informational – gathering the quantitative and qualitative data requested with minimum additional effort (responding to the wish to limit additional time investment),
- economic – creating something financially sustainable, though not necessarily profit-making,
- political – regarding who should control the data and how that would be made visible,
- socio-cultural – making the system fit the lives that people sought to live.

In conversations with consumers about whether they preferred access via the smartphone or the computer, and which interfaces they found most useful, it became clear that the technical challenge of using the technology to empower consumers and producers with information was solvable. Indeed Fair Tracing became aware of and linked up with several other similar projects, 11 in total from the UK, US and Finland.⁴ In exchanging ideas and agreeing standards with these other projects, it was clear that the technical challenge could be solved. In collaboration with Nokia, who lent us smartphones to experiment with, and Upcode, a company offering a barcode reading software for smartphones, we were able to assemble a viable combination of tools to read and process information. Fair Tracing also addressed the informational challenge, collecting data on processes, in a relatively superficial way in the case of Indian coffee, and in greater depth in the case of Chilean wine, where it was possible to conduct interviews with growers, the winery/exporter, and the UK importer.

However, this was a very time-intensive work, and the fact that some of the data were produced in a participatory way added to the time resources that needed to be invested by producers. The participatory process resulted in a rich information base for one particular product, but raised questions about the feasibility of collecting such data for a large number of products. Even maintaining an information flow for one product would have stretched the time resources of the producers we worked with. There were also challenges of language and cultural translation, which made it difficult for producers to offer information directly to English-speaking audiences unfamiliar with Chile (Kleine, 2008; Light et al., 2009). Related to this was the question of the financial sustainability of the whole information system and the political challenge of who should host, contribute data, curate and edit the site and how their work should be rewarded.

The biggest challenge of all, however, was the social one. When speaking to us about ethical consumption in the abstract, consumers had talked about their choices in a positive way, how they wanted to have more information to make better choices. Once confronted with actual prototype interfaces and mocked-up systems, shoppers spoke about what they considered to be a realistic time to spend on a shopping decision. Perhaps obvious from the start, it was here that one of the key capabilities of all came to the forefront: having time over which the individual has autonomy. Usually formulated by respondents in a negative way: “I don’t have time to...” the

capability of having time was the dominant capability pitched against the capability of making informed choices.

Results from Fair Tracing were fed back to partners in India and Chile, who benefited in particular from the joint supply chain and information flow mapping and the information, provided comprehensively but in anonymized form, on the consumers' views. Findings were also fed back to the ethical consumption activist community via an active project blog (www.fairtracing.org) and presentations. Perhaps most significantly, Fair Tracing collected information on other similar projects interested in ethical consumption and traceability technology, co-hosted several phone conferences among the projects and facilitated an EPSRC-funded gathering of six of these projects to discuss potential ways of creating a joint Ethical Consumer Information System (ECIS). This greatly supported overcoming the technical challenge at the consumer end and allowed projects to exchange views on the informational and financial challenges; exchanges which are ongoing. The social challenge remains: in time-strapped societies, the capability of having available time seems fundamentally in conflict with the capability of making carefully weighed, informed choices in food shopping.

5. Mapping Fair Tracing on the CF

The project has at core an interdisciplinary collaboration between 8 researchers and the two partner organizations. The following theoretical framing was the three authors' perspective, as social scientists, on the project.

In line with Sen's focus on capabilities defined by the individual and measurable, for example, by the proxy of development outcomes (functionings), we will start our mapping of Fair Tracing onto the CF at the development outcomes side.

5.1 *Desired outcomes: capabilities*

According to the literature on FT (e.g. Nicholls & Opal, 2005), producers seek information on the value chain they operate in as a means of achieving a better market overview and bargaining position, with the aim of gaining a greater share of the profit and therefore increasing their income. As discussions with FT producers in Chile showed, this income was intended to increase the funds available for children's education, healthcare and home improvements, as well as no doubt other things which respondents did not happen to mention. Some producers were also looking for a way to express and communicate their pride in their product and their country.

On the consumer side, during discussions and accompanied shopping exercises, consumers said they wanted more information in order to understand the quality of the product and the ethical claims attached to it: "I want to know where the money really goes" (male, 50s, Science Open Day), "How can I know we're supporting the right people?" (male, 40s, Science Open Day), "I want to feel good about buying it" (female, 40s, Science Open Day). The avowed capabilities sought were those of making an informed buying decision, using financial resources effectively to support "the right people" in developing countries and feeling good about one's purchasing decisions. Other capabilities, such as "teaching one's children values," "not feeling guilty," "seeming to be a nice person in the eyes of my guests who see I buy Fair Trade" and "feeling empowered vis-à-vis supermarkets I don't like and don't trust but still buy in" emerged implicitly in the conversations with consumers. Transmitting information to both producers and consumers was at the heart of the Fair Tracing project, but it was just a means of supporting them in achieving the ends they themselves had in mind.

5.2 Choice

As much as these capabilities diverged and mixed, on the consumer side the central access point to achieving any of them was the buying decision. Here, in the “degree of empowerment” section, the CF distinguishes between existence, sense of, use of and effectiveness of choice. In the case of FT products, the existence of choice is predicated on the existence of a reliable FT certification system, producers who abide by the FT standards and the availability of the FT products, either in online shops, in other shops or indeed in the supermarket in question. The sense of choice is dependent on a consumer’s awareness of the system, their trust in the effectiveness of the system, their knowledge where to obtain the products and their assessment how costly or onerous it would be to make the choice in favor of FT products. Use of choice refers to whether a buying decision was made and effectiveness of choice is determined by how well the buying decision achieves the outcomes desired by the decision-making consumer. This last issue relates in particular to claims of quality and social and environmental impact.

The Fair Tracing project relied on the existing systems of FT and organic certification for there to be the existence of choice. It was designed to increase consumers’ *sense of choice* by providing information about the FT system (and other certification schemes), giving disaggregate, third-party or “authentic” producer-created information about the effectiveness of the system and thus hopefully improving trust. Use of choice was then up to the consumer and effectiveness of choice again relied on the certification systems to work, but was aided by the specific information made available by the Fair Tracing system.

5.3 Agency

In the CF, an individual’s agency is based on their resource portfolio as well as their personal conversion factors. The Fair Tracing project relied on consumers to have access to a number of resources. Consumers needed financial resources to be in a position to make consumption choices and arguably, an additional degree of disposable income to fund their ethical buying decisions.⁵ Furthermore, consumers needed to have educational resources to the degree of being literate and familiar with using a computer or smartphone. They needed the material resources to have access to a computer or phone with Internet access and the geographical resources to be physically close to these devices and ideally, a supermarket. Consumers needed the psychological resources of having the confidence and curiosity to try something new and information that the Fair Tracing system existed. This was certainly not a low threshold of resources required, and in addition consumers needed “self-governed time” to invest in their choices and engage with the system. This element, “time”, was an additional resource which needed to be added to the “living tool” of the CF.

5.4 Structure

Considering the Fair Tracing project as mapped onto the CF, in terms of structure, the Fair Tracing project was made possible by the existence of a host of institutions and organizations: the funding body EPSRC, the FLO FT and other certification systems, their standards and monitoring processes, the export and import organizations and producers who were certified, indeed the entire pre-existing supply chain, including the supermarkets. In the UK, the relatively high degree of computer and smartphone use, their relative affordability and the fact that computer skills were widespread, led to a condition of common, but by no means universal access to ICTs. Norms on the use of space allowed most citizens access to supermarkets and indeed the gendered (and frequently unequal) division of household labor meant that norms on the use of time allowed men, and particularly women, to spend time shopping and making decisions in supermarkets. However, similar norms also suggested that food shopping was something to

be done as quickly and conveniently as possible, with shops named “Tesco Express” stressing the speed in which grocery shopping could be conducted. The Fair Tracing project was also operating in a policy environment where products had to have a barcode and be traceable. Crucially, with 70% adults in the UK now recognizing the FLO FT label (Fairtrade Foundation 2008), with FT Fortnight as a yearly event, and FT schools, FT universities and FT towns being announced, there were powerful public discourses on FT which the Fair Tracing project could link to. The Fair Tracing project itself was a pilot of a system, a new technology, linked with the existing technologies which could potentially impact on the wider structural conditions.

To sum up the mapping of the Fair Tracing project onto the Choice Framework, we could say that, the project was a proposed change in the technologies, linked to existing technologies, discourses, institutions, policies and norms. It relied heavily on consumers already having a variety of resources and focused in particular on helping them increase their information. Even though there was an acknowledgement that increased information alone does not necessarily change behavior, the intention was to give consumers, through information, a greater sense of choice, thus strengthening their degree of empowerment to increase their capabilities. In particular, the expressed capabilities of making an informed buying decision, using financial resources effectively to support “the right people” in developing countries and feeling good about one’s purchasing decisions.

6. Contributions and challenges arising

Human development is an inescapably complex process which may or may not defy any attempt at near-comprehensive conceptual mapping. However, in the ongoing quest to make the capabilities approach operationalizable for development practice, frameworks such as the CF can prove useful tools to balance the complexity of development processes with the need to trace the interrelated changes co-caused by a particular development intervention in a more concrete way. Action research and participatory design are both a logical consequence of the ethos of the capabilities approach and one of the toughest test environments for its operationalizability.

In the case of the participatory action research project that was Fair Tracing, using the CF allowed us to analyze the pre-existing conditions for this modest pilot intervention, to conceptualize in what way we might expect changes to occur and to trace expected and unexpected changes and challenges onto the conceptual map. The CF thus played a role as a “living tool,” which some researchers on the interdisciplinary team carried with them like an amendable map on our journey through the rough and confusing paths of an experimental action research project. It served the social scientists on the project as a useful guide to understanding the social–technical systems in which the new technology was supposed to be introduced. Its particular strengths lie in the way it integrates tangible and intangible elements of structure and agency and in how an intervention’s potential impacts on either can be conceptually linked.

Working on the Fair Tracing project unearthed some key limitations of using the CF, which pose interesting challenges to developing the CF further as a translation device for the CA.

First, work with consumers in the UK showed that by far the two most important variables to consider for ethical buying decisions, apart from price, were (a) trust and (b) time. Ability to trust and healthy skepticism are both facets of psychological resources and the relationship between sense of choice and trust has been discussed above. So trust could be mapped in the existing terminology of the CF. Time however was so far only conceptualized with “norms on time” as a structural condition, not as a resource the individual has at their disposal. This is a serious limitation of the CF in its previous incarnation (Kleine, 2007). However, the CF is a “living tool” and we have now expanded it to integrate “self-governed time” as an important 11th resource.

A radical change to the amount of time needed for consumption choices may be just beyond the horizon. Practically speaking, it is likely that smartphones will soon have apps that can turn them into personal shopping assistants (PSAs). Such PSAs could be used for scanning the barcode, and via mobile banking, charge a credit card for the purchase before the shopper leaves the supermarket. Shopping apps could be combined with ethical buying guides such as *ethicsore* in a new ethical shopping app. Once RFID chips are included in the products, these can be geo-referenced with ever-increasing precision and PSAs could remember the products' locations in the shop and lead customers to their routine purchases. That way, customers would only have to make their choice, say between different brands of FT-certified coffee with different ethical credentials, once – and the PSA would “remember” it and “lead” its owner back to it in the future, even in a different shop. If a new product choice needs to be made, an ethical information database (like the envisioned ECIS) could be quickly consulted via the PSA while the user was in the shop. A new ethical buying decision would be added as another automatic logarithm to the PSA shopping suggestions. When ethical information on particular companies or products changed, e.g. a brand now belonged to another, more or less ethical company, the database could be updated and an alert sent to PSAs for users to re-confirm their choices. By simplifying repeated buying choices and shopping routines, while not dumbing down the original decision-making process, such an ethical PSA device might best satisfy both the capability of “making informed choices” and “having time available.” However, shopping decisions would be saved and data could be stolen with the PSA device, thus potentially conflicting with the capability of “protecting privacy and personal consumption data.”

In our daily lives, we as individuals are used to dealing with such capability dilemmas and it is unsurprising that different technologies can help resolve some, but by no means all of these dilemmas. The message of the capabilities approach is first, that such value judgements should be discussed before a technology is created which will effectively already embody a set of value judgements. Second, such decisions should be made in a decentralized way, as close to the user-citizens who will have to live with the consequences, as possible. As a voluntary option, a PSA would seem a great capability-expanding idea; however, if imagined as the future compulsory way to do your shopping, it is a set-back to development in the sense of the CA.

Second, individual buying decisions are heavily dependent on the existence of choice and, in an arguably oligopolistic supermarket environment, the supermarket buyers deciding which products fill the shelves have great power to define the parameters of choice. Individual consumers only find the products on the shelf which the supermarket buyer has pre-selected. Unless consumers take the often more onerous route of locating their desired product online or buying in alternative shops, their choices are circumscribed. The decisions of the supermarket buyer, in turn, are based on a variety of factors, with one important factor being the perceived consumer demand. Individual consumers rarely have the opportunity to indicate their potential demand for products not on the shelf, and have to rely on a mass of other consumers indicating in surveys or related buying decisions that there is demand for an FT product. In other words, here again is one of the classic problems for the capabilities approach: in some circumstances, individuals can only achieve change toward the lives they personally value through pressing for this change with others, developing *collective voice* or *collective action*. Following Giddens' structuration theory (1984), the CF understands structure and agency as co-constituted, as one shaping the other. It is here, in the “existence of choice” aspect of the CF that, in this case, the consequences of this complex co-shaping crystallize. It is however easy to imagine ways of using ICTs as tools for collective lobbying for particular products to be made available (e.g. e-petitions, online voting, feedback mechanisms and online social networking campaigning).

Third, the Fair Tracing project, like many ICT4D projects, committed the simplification that it focused on consumers who use technology and while exploring non-use of technology at the

producer end, did not engage with non-using consumers. Possibly, FT consumers who chose not to use computers or smartphones (for this or other purposes) would benefit from improved existence of choice in the form of more or better FT products on the shelf. However, there is also the risk of psychological resources being decreased by a sense of exclusion or incompetence in the case of involuntary non-use or the risk of contributing to a sense of pressure to use in the case of voluntary non-use. Action research developing a new technological system can thus lead to greater unfreedom for non-users. There is a real need to continue research with non-users, and also a case for combined research with users and non-users.

Such action research needs to include the meaningful participation of intended users, if it is to maximize its chances of increasing, instead of advertently or inadvertently reducing, the freedom that users have to live the lives they have reason to value. The narrower the spectrum of uses to which a technology/a set of technologies can be put, the more it becomes important to explore the citizen-users' needs, values and preferences before and during the design process.

The CF, as a "living tool," can be a help in understanding development as a process and tracing the logic of an intervention, starting with the lives people desire for themselves. This results in an approach which tries to orientate technology design to fit to the lives people value rather than trying to re-design people's lives around a new technology. Given that people in both the global North and the global South⁶ are subject to effects not only of exclusion from technology access, but also unfavorable or indeed undesired inclusion in technology use, this perspective leads to a view of ICT4D which finds "the field" for its fieldwork, in the global South *and* the global North. This would allow us to move not only from a technocentric to a people-centered view, but also to a view which recognizes that when it comes to a capabilities approach to human development, *all* countries are developing countries.

Acknowledgements

We would like to thank colleagues on the Fair Tracing project, Ian Brown, Ashima Chopra, Apurba Kundu, Helen LeVoi, Shantha Mohan, Macarena Vivent and Christian Wallenta. Thanks to Adel Haider and Vishal Shah who did the programming for the first interface examples. We would like to thank Ehrmann's Ltd, Nokia and Upcode for cooperating with the project and in particular the Los Robles winery for being our partner in this action research. Thanks also to two anonymous reviewers and the editors for their helpful comments. The project was made possible by a grant (EP/E009018/1) from the UK Engineering and Physical Science Research Council. The views presented here are the responsibility of the authors alone.

Notes

1. The survey was undertaken online, and so while it claims to be a representative sample of 1013 UK adults, it systematically excludes people who do not use the Internet.
2. Social desirability is the effect encountered when people give answers that they perceive to be more socially acceptable than others.
3. Throughout the article, we adhere to the common convention of spelling the wider social movement as Fair Trade and the subset of FLO-labeled products as Fairtrade.
4. However, none of these had done primary research with producers and on the value chain as all focused on the consumer end. For information on similar projects such as ethiscore, historic futures, consumer gadget and good guide, see blog entries on www.fairtracing.org
5. For a discussion of whether Fair Trade and organic are only options for consumers with higher incomes, see Fridell (2007). However, some research findings (Author 2005) suggest that certain groups of people with very limited spending power, such as students, may still prioritize buying Fair Trade products.
6. Global North and South, like developed and developing country, is yet another term which is commonly used but insufficient in capturing the complexities of different countries' human development.

Notes on contributors

Dorothea Kleine is Lecturer in Human Geography at the UNESCO Chair/Centre in ICT4D (Information and Communication Technologies for Development) at Royal Holloway, University of London. She is also the Director of the MSc in Practising Sustainable Development (ICT4D specialism) at the Centre. Her research interests are in ICT4D, ethical consumption, local economic development and development theories, particularly the capabilities approach. She was Project Manager and a researcher on the Fair Tracing project (www.fairtracing.org).

María-José Montero is leading the development of the first Social Investment Fund (FIS) in Chile and is director and co-founder of the ethical consumption NGO Ciudadano Responsable. An economist by training, she has worked on agricultural development at the Food and Agriculture Organisation of the United Nations (FAO) and on housing with the NGO Un Techo para Chile. María-José Montero worked as a research assistant on the EPSRC Fair Tracing project, while she was at the Centre in Developing Areas Research (CEDAR) at Royal Holloway, University of London.

Ann Light is Professor in the School of Design at Northumbria University. Her interests include the social impact of technology and the politics of design, explored through design research such as Democratising Technology (www.demtech.qmul.ac.uk). She publishes on human-computer interaction, cross-cultural methodology, and interactive media and design. Ann Light is a visiting researcher at the University of Sussex and at Queen Mary, University of London. She was co-investigator on the Fair Tracing Project.

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