

**RESEARCH NOTE: WORKING WITH
NEW MEDIA'S CULTURAL
INTERMEDIARIES**

The development of collaborative projects at
INCITE

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One of the consequences of the growth of new media research in the UK, particularly on the Internet and mobile phones, has been an intensification of collaborations between the producers of new technologies – hardware manufacturers, software developers and interface designers – and the researchers and analysts of these technologies. Such collaborations may raise many issues for researchers, amongst them matters of methodological practice, theoretical innovation, ethical standards and political commitment. Yet these collaborations may also enable us to interrogate our own disciplinary practices, and may help us find ways to conduct exciting, innovative and relevant interprofessional studies.

In this research note I describe the work of the Incubator for the Critical Inquiry into Technology and Ethnography (INCITE) based in the Department of Sociology at the University of Surrey. Since its launch in January 2001, INCITE has explored new ways of working at the intersection of qualitative sociology, design and new technology. It has done so by working closely with the ‘cultural intermediaries’ of new technologies: technologists, corporate researchers and designers.¹ The purpose of INCITE is to encourage innovative and experimental social research on new technologies, particularly from an analytically critical or sceptical perspective. Methodologically we draw on ethnography and related qualitative methods. So far we have been concerned with developments in contemporary methodology and the process of doing research as much as producing traditional ‘findings’ or executive summaries to be handed to our sponsors. Our work with several high technology companies challenges us to work reflexively whilst exploring the tensions which this may bring in maintaining our intellectual and political commitments.

The aim of this account is to launch a debate in *iCS* on the opportunities, risks and responsibilities of such endeavours. My perspective on these debates

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should not be assumed to be the same as others who work at INCITE. For me, at stake in these discussions is not only the way we do and think about social science, but also the ways in which we might be (and often are already) participants in the design of new technologies. How can we think about such participation? How might collaboration change the way we study new technology, or how we produce narratives of our research? This research note is not offered as a recipe, nor an example of best practice. Rather, it is a vehicle for asking questions about technical systems, and the ways in which we may become located within their production and use.

At the beginning of 2003, the core staff of INCITE are six researchers and one administrator.² Between us we have backgrounds in anthropology, sociology, technology studies, art history and design ethnography. Three students are funded by Economic and Social Research Council (ESRC) 'CASE' awards, which link their studies to that of a named sponsor from UK Industry.³ Currently the two largest projects are funded by Intel, on place and ubiquitous computing, and Sapient on ethnography and design practice. Other funds have been provided by FujiXerox (FXPAL), British Telecom, and the University of Southern California (School of Engineering and Annenberg Center). In terms of our institutional location we have benefited from discussion with our colleagues in the School of Human Sciences as well as with researchers at the Digital World Research Centre, also based at the University.

INCITE was set up to provide an institutional space to experiment with new kinds of working, including the integration of practices which would be more familiar to those embedded in the culture of design work. We have attempted to construct a workspace in which we can run what we have learned to call 'data circuses' of emergent findings and 'design sessions' to which we invite graphic designers, interface designers and engineers.⁴ We have used insights from these activities to feed back into our own projects and practices of fieldwork and analysis. Increasingly we are exploring connections with artists, including photographers and sculptors, as we expand our explorations of possible collaborations. The resulting new ways of working have encouraged us to think about how we can build specific kinds of visual practice into our work, and how visual display can be used within practices of partial translation.

VISUAL PERFORMANCES

In her article 'Two weddings and still no funeral: sociology, design and the inter-professional project', Christena Nippert-Eng suggests that sociologists can offer the following:

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(1) a distinctive conceptual, analytic framework; (2) ethnographic skills; (3) teaching skills in the classroom and in the field based on some rather rigorous training found in most sociology graduate programmes; (4) a different kind of group leadership, perhaps, than what designers are used to; (5) contextual information via substantive areas of interest. . . including a way of looking at the relationship between people, objects and activities – especially the politics of design; and (6) writing skills.

(Nippert-Eng 2002: 213)

However, as Nippert-Eng stresses, disciplinary skills flow both ways. Our own disciplinary habits, drawn from sociological or anthropological qualitative methods, have been impacted by the work practices of our collaborators with training in design and engineering. The most significant shift is a particular culture of display, and the ongoing performance of our analysis via this display.

Our work with Sapiient has taught us about the use of 'grey boards', or large foam panels which can be used for pinning or sticking photos or text into a story of a project. Figure 1 shows a corner of the INCITE office with these boards as they appear most of the time – repositories of images and text. These boards are used to pin up cuttings from magazines, segments of interview transcript, theoretical ideas, and even stills from video interviews. Part of Sapiient work practice is to use coloured shapes to indicate categories of ideas or the development of a line of thought, as shown here in the arrows and large bubbles. As a way to organize data the boards are useful not only as a way of physically sorting and re-ordering ideas and examples, but also because they become part of performative stories about the research. Figure 2 shows discussion about one INCITE project, which brought in the board data through gesturing at the pictures or moving around the cards, as well as adding cards as new thoughts or findings arose. One of the advantages of this method is the ability to layer thoughts, pictures and transcripts, so a subsequent viewer can look at the material beneath the most recent surface manifestation.

The grey boards have become 'boundary objects' between researchers used to conventional ways of working with text and analysis, and a wide range of designers who are used to working visually but may not have day-to-day experience with ethnographic fieldwork.⁵ In our workshops with computer scientists, engineers, and designers from both Sapiient and Intel we have used these boards successfully to describe ongoing fieldwork. At Sapiient, we used the boards to illustrate material on a project on public Internet access.⁶ Figure 3 is an image from the design session which was run by INCITE Research Fellow Kris Cohen at Sapiient's London office. The workshop was organized around a PowerPoint presentation of the findings, a display of the grey boards, and a brief to participants to work on designs which might emerge from the data on display. This

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Figure 1 Corner of INCITE office



Figure 2 INCITE office in use

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Figure 3 Workshop at Sapient

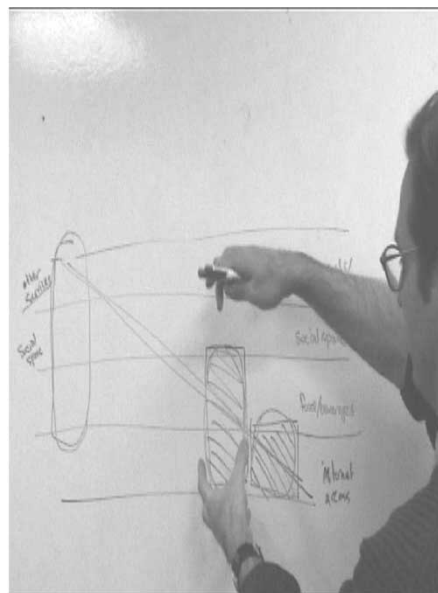


Figure 4 Whiteboard work

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was enabled by the construction of a Sapien-style graphic ‘experience model’ of the data, which is shown as a work-in-progress in Figure 4.

Grey boards are not just about the display of material, but also are a physical manifestation of a way of working. In performing the data, we may find ourselves telling fieldwork stories which are stimulated by the quotations and photos which are on display. Unlike a report which might be handed to a designer as a set of specifications, the *active and embodied process* of translation of the data becomes crucial in the collaboration. This behaviour is not a mere process of ‘channelling the user’ in terms of the voices of those we have interviewed.⁷ It involves explicitly producing an active and engaged sociological or anthropological interpretation for an interdisciplinary audience.

CREATING ‘INTERPROFESSIONAL HYPERLINKS’

In using the grey boards we are adopting and transforming a practice that is common in many design-led workplaces. We have also attempted to create ways of talking collaboratively about our objects of study and our methodologies through the development of other kinds of boundary objects. Nippert-Eng has shown in her own work with designers that objects can be good to think with, a perspective in tune with recent work in material cultural studies (Attfield 2000). In researching the book *Home and Work* (1996), Nippert-Eng found that the ways in which individuals manage their keys are linked to dozens of their other daily activities around people and objects. She noticed that people who have all their keys together on one key chain tend to have an integrated life in which they actively blur the separation between home and work, whereas separate key ring users tend to have a strong division between these worlds (Nippert-Eng 1996). Key rings are a good data elicitation technique for a sociological project studying boundaries between home and work. They are also good to talk about with designers. A sociological narrative can be offered which positions key-chains as objects through which to talk to designers about sociological concepts which might otherwise be difficult to introduce in other ways. Nippert-Eng writes:

I found that one’s key chain is linked to numerous other behaviours that we frequently don’t even notice like commuting behaviour, appearance management, the way we talk at home and work, office and home decor, and eating and drinking habits. But key chains also are linked to trajectories as diverse as the domestic division of labour, occupational norms, the history of industrialization, family composition, and position within the organizational hierarchy, just to name a few. If we add to this links to more physical factors such as the production of metals and doors, the norms of access to building and car interiors, or even

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the popular culture of key chains as collectibles, you can see how easy it is to think of the key chain as a very interprofessional manifestation or hyperlink.

(Nippert-Eng 2002: 214)

I want to take up the idea of working with an artefact or an idea as an 'interprofessional hyperlink' by which I mean a way of creating collaborative discussions. This can best be explained through an INCITE project entitled 'Locating Consumption of Ubiquitous Content', sponsored by Intel, which was set up to explore the suggestion, implicit in much of the writing on new technologies, that place will cease to matter with the advances of digital content and devices (see account in Agar *et al.* 2002). From the point of view of a large computer chip manufacturer such as Intel, this claim may have a major impact on corporate strategy, not least in developing the objects or interfaces into which the next generation of chips will be integrated.

Just as Nippert-Eng used the key chain as a tool through which to construct connections, we have spent most time building interprofessional links around a mobile object: a London bus. The 73 bus, which runs from Victoria Station to Tottenham, has become a way in which to talk about the project aims, places in London, and new technologies.⁸ Rather than trying to predict whether, for example, the next generation of mobile devices would 'free' people from geographic locations, we instead have embarked on a series of explorations on the consumption of place along the bus route.

Initially Steve Smith at INCITE conducted a fieldwork project during which he took photos of every bus stop and Internet café along the route, and then constructed a map of the sites on a set of web pages.⁹ The purpose of this was to assess the kind of spaces that the bus route was connecting. Internet cafés were seen as places of digital content consumption, and a map indicated their varying distribution as the route travelled through different London boroughs. Adam Reed then conducted further searches on the web inputting place names along the route. Through this technique he came upon a group of users who were narrating the city through new technology: web loggers, or 'bloggers' (Reed 2002). Bloggers create web-based journals, and the group under study in Reed's work are often interested in posting about their travels through London, either during their daily commuting or on special excursions across the city. Through similar searches, we have begun to work with groups who live or work along the route, not by intercepting bus riders, but by using the route as a way to talk about mobility, urban life and the use of different kinds of technology. For example, Reed is also working with those who make and view witness appeal boards, the yellow signs which appear on pavements near

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to recent crime scenes in London. We are also talking to those who spread information about wireless network 'wi-fi' access facilities, and web designers producing pages which are dedicated to specific London places.

The use of transport routes as a way of sampling places in the city was inspired by François Maspero's journey across Paris on the RER (Maspero 1994). Accompanied by photographer Anaik Frantz, Maspero documented the places in and around Paris connected by Line B of the RER. In the neighbourhood surrounding each station, Maspero and Frantz attempted to capture the local history alongside contemporary experience, integrating found archives and their own personal reflections. In our own study, we have selected locations in terms of the project interest in place and technology. In so doing we have come upon interesting groups, such as bloggers or wi-fi activists, who are in the process of narrating place at the same time as being high technology users.

The 73 bus route becomes a tool of collaborative methodology in part through joint visits to fieldwork sites. Members of the Intel team sponsoring the research have travelled on the bus route with us, observing the different kinds of neighbourhood activities relating to digital content, such as mobile phone use, local Internet services, and wireless networks. The route itself has become a way to represent as well as undertake research, including how this research itself is portrayed by the media.¹⁰

The project on the consumption of ubiquitous content has also been the topic of several design sessions. Sample products of one of these sessions are shown in Figure 5. These two ideas were drawn up by Phil Brook during a

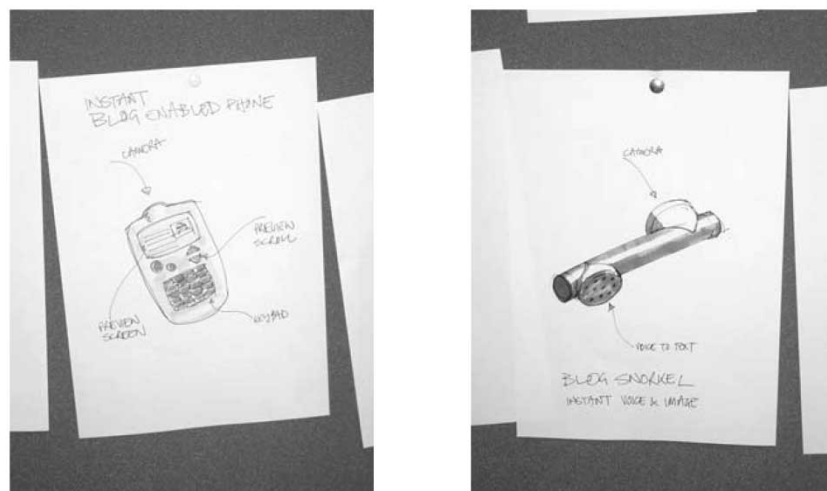


Figure 5 Design ideas by Phil Brook (Brook Design Associates)

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workshop with staff from Intel and Sapient, and show possible renditions of blogging devices.¹¹ The workshop consisted of a presentation of fieldwork materials within an analytic framework, and then a group discussion of the nature of the social relationships and wider cultural trends in which blogging activity took place. Just like the keychains, these sketches of new objects themselves then may act as further interprofessional hyperlinks, prompting debates about communication in urban areas, the cultures of immediacy amongst bloggers and the kinds of texts which they produce. Rather than being geared towards the development of an actual product, these design sessions are focused on the methodology of the collaboration itself, and in particular the kinds of ways in which ethnographically inspired work can play a role in design.

ETHNOGRAPHY™

For many of the designers and engineers, working with INCITE is not their first encounter with ethnography. Probably the most important context for our efforts is the increasing use of ethnographically inspired techniques by corporations themselves. In her account of the history of this development, Christina Wasson claims 'by 1997, every major design firm claimed to include ethnography as one of its approaches' (Wasson 2000: 382). This trend has been picked up by the mass media. Articles have reported 'Anthropologists go native in the corporate village' (quoted in Suchman 2000) or 'Companies learn value of grass roots: anthropologists help adapt products to world's cultures' (*USA Today*, 26 May 1999, D1, D4). Indeed much of our own experience with the media has been to field questions from reporters who are curious about technology firms being interested in participant observation rather than techniques usually associated with market research.

Although it is widely understood that 'the user' is a central trope in design work, designers also tend to work with all kinds of stand-ins and surrogates for this figure (Suchman 2000). As a research approach within the culture of design and technology production, ethnography has always existed amongst a competing set of claims of who can speak for the user, including cognitive psychology which provides an alternative way of understanding human needs in relation to products (e.g. Norman 1988). Wasson traces back the influence of anthropology to consultancies offered to applied anthropologists by marketing and product development divisions of companies in the 1980s (Wasson 2000: 380). However around the same time the Computer Supported Cooperative Work research community, with anthropologists as key members, was

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formed around interdisciplinary studies of computer software in the workplace. Another important influence on the emerging relationship between ethnography and design work in the 1980s was the group which formed at Xerox PARC¹². These researchers were influenced by ethnomethodology and activity theory (Wasson 2000). The work done at PARC has been developed in numerous sites, including a wide range of workplace studies conducted by ethnomethodologists in the UK (Heath *et al.* 2001).

By the 1990s in the USA industrial designers had begun to use ethnographically informed practices in their work, partly informed by the work at PARC. Rick E. Robinson developed these methods at the Chicago-based design firm Doblin, before founding his own company E-Lab. Wasson reports that one of the legacies of the PARC methodology was the intensive use of videotaping everyday consumer behaviour (Wasson 2000: 382). E-Lab also developed an 'AEIOU' framework as a heuristic device to aid the researchers analysing their data: 'A' for Activities; 'E' for Environments; 'I' for 'Interactions', 'O' for 'Objects'; 'U' for 'Users' (*ibid.*). This work in industry has directly influenced our own projects as Robinson went on to join Sapient, and in his new role in this technology company set up the collaboration with INCITE on ethnography and design practice. The aim of the collaboration was to allow both Sapient staff and university-based students and researchers to explore innovative methodologies which might not be possible during their client-based work.

Many of the design firms using ethnographically inspired methods have continued to use video as a key part of their data collection. The development of cheaper computing devices as well as digital photography and digital video has played a major role in the transformation of ethnographic field methods, both in such corporate-based work and also educational research contexts. Increasingly students are able, through cheap digital editing packages, to consider the use of digital video as a component of their ethnographic data collection, and this is reflected in discussions of the status of multimedia and hypermedia ethnography (Pink 2001). One of the ongoing debates with our collaborators at INCITE is how this video can best be analysed and used, both in the course of data circuses and design sessions, but also as a part of a traditional discipline. Although anthropology has a tradition of using film, multimedia and hypermedia outputs of research are still rare. I suggest collaborations about the status of such visual and increasingly online-based ethnographic data will continue to provoke stimulating debates, not least around the different legal and ethical expectations of researchers and their counterparts in industry.

THE UK CONTEXT

Building collaborative work practices may challenge disciplinary sensibilities, provoking questions among academics about the value of working with industry or the role of non-textual practices, such as design sessions, in the future agendas of technology studies. These discussions are now of increasing importance, particularly due to developments in UK social science funding and the emergence of increasingly interdisciplinary participation in cultures of technology production.

The UK social science community has benefited from three major funding initiatives in the area of information and communication technologies. The first, the Programme on Information and Communication Technologies (PICT), began in 1985, funded by the Economic and Social Research Council (Dutton 2001: 339–43). Over a ten-year period, and channelled through six university-based research centres, more than sixty researchers were involved in conducting investigations into the ‘long-term social and economic implications of advances in information and communication technology, which would inform policy and practice’ (ibid: 339). The emphasis was on qualitative projects and case studies in four main areas: production, utilization, consumption and governance.¹³ The second programme, *Virtual Society?*, ran for three years from 1997 to 2000, and focused on the implications of the continued massive growth in new electronic technologies. It included over seventy researchers working at twenty-five UK universities, and focused on the following questions: are fundamental shifts taking place in how people behave, organize themselves and interact as a result of the new technologies; and are electronic technologies bringing about significant changes in the nature and experience of interpersonal relations, in communications, social control, participant inclusion and exclusion, social cohesion, trust and identity (*ESRC Virtual Society? Profile 2000*)? One of the key themes which emerged from the *Virtual Society* was a perspective of analytic scepticism with regard to the hyperbole surrounding the early rhetoric about the Internet and its transformative impact on society (Woolgar 2002). The third programme, currently underway, is entitled ‘e-Society’ and builds on the themes set by the previous initiatives (see www.esrc.ac.uk for details of ongoing projects).

The UK context has been crucial to us in three ways. First, although the launches of PICT and *Virtual Society* preceded the development of *INCITE* by some years, several interconnected communities of practice within the UK have been established, and alongside them a recognition of the value of working and communicating across disciplinary boundaries. Secondly, the ESRC-funded

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programmes have encouraged collaboration, largely through dissemination workshops, with 'end users' of the research, both in industry and the public sectors. INCITE benefits from the forms of translation (going beyond a construction of 'us' and 'them') that these conversations established (e.g. Cooper and Woolgar 1996). Third, numerous innovative concepts and frameworks have been developed and avenues for subsequent theoretical work opened up. Marilyn Strathern, for example, draws on the findings of the Virtual Society programme to explore the practices of audit, particularly in higher education (Strathern 2002). Strathern takes up the idea that audit is a manifestation of virtualism (cf. Carrier and Miller 1998). INCITE has also gained from the rich ethnographic accounts of everyday encounters with ICTs provided by many projects as well as the cross-cutting theoretical themes which have emerged, such as those dealing with location, scale, play, network and the nature of the multimedia objects (e.g. Agar *et al.* 2002; Wittel *et al.* 2002).

DEVELOPING AGENDAS

All the projects at INCITE have experimented with visual practices and tried to create interprofessional hyperlinks in workshops such as design sessions. In my own work I am particularly interested in creating a dialogue with designers and other researchers about the ways in which radical cultural agendas and contemporary critical social theory can be part of this process. For example, one of the reasons for selecting the 73 bus route is that it was a way to intersect diverse communities in London, including commercial and residential areas popular with gay men and lesbians, and also neighbourhoods which housed many different minority ethnic and religious groups (e.g. African, Caribbean, Turkish and Orthodox Jewish areas). The bus ride can also become a way to talk about ideas of multicultural Britain, hybrid identities, diaspora, in conjunction with the work of Avtar Brah (Brah 1996) and/or the experience of homophobia, public space and construction of the closet through Michael Brown's writing (Brown 2000). In doing this project I have become increasingly fascinated by the ways in which my own field of the social and cultural studies of technology might contribute to the transformation of technology design.

In developing these interests I am indebted to conversations that were held at a workshop at Xerox PARC entitled 'Work Practice & Technology: The next twenty years of research'.¹⁴ This gathering was intended to reflect on the work that had been carried out by the Work Practices and Technology Group (WPT) at PARC, and as a location to discuss future research agendas. Participants came from computer science, high-tech industry, workplace research, participatory

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design, cultural studies of science and technology, and related overlapping networks of researchers and developers. The conversations which began INCITE were stimulated by the debates and 'corridor talk' which happened at this event.¹⁵ In particular conversations centred around the ways in which, with notable exceptions, critical perspectives from contemporary social theory and cultural studies, including feminism, critical race theory, queer theory, urban studies, and post-colonial theory were absent from much of the visible work which was being carried out by designers and researchers in corporations, even though many have disciplinary homes in cultural anthropology, critical sociology, cultural studies and other allied disciplines, and were working on projects which would appear to benefit from such a theoretical toolkit. We asked ourselves why some translations are possible but others left undone? Was it possible to sustain a collaborative space where such conversations could happen?

Lucy Suchman has recently suggested that one strategy for such transformation is to establish new bases for technology integration, not on the basis of universal languages, but in *partial translations* (Suchman 2002: 101). This is a useful way of thinking about my own aims as a participant in the webs of connections that make up production of technical systems, as we are at INCITE. Suchman also proposes that we value heterogeneity in these systems rather than 'homogeneity and domination'. In common with the benefits of sociological practice that Nippert-Eng outlines above, the social studies of science and technology (STS) provide useful 'tricks of the trade', methodologically and theoretically, to think through the problems of homogeneity, universal languages and standardized practices. STS offers detailed accounts of local practices, different understandings, as well as exploring the relationships between marginal experiences and normative discourses. Cultural studies of science and technology have enabled a critical discourse of technology production and consumption, which questions the ways in which new technologies enable or are drawn into cultural battles about identity politics, difference and cultural recognition from an interdisciplinary perspective incorporating fields such as women's studies and queer studies (Reid and Traweek 2000).

As well as providing conceptual resources, the cultural studies of technology have been influenced by contemporary theories of ethnography. Experiments have been widespread in ethnographic narrative since the launch of debates about orality, poetics and the power of writing in the mid-1980s (Clifford and Marcus 1986). In technology studies, autoethnography, layered accounts, and performance texts have all been produced (Downey and Dumit 1997; Reid and Traweek 2000).

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I suggest that far from being irrelevant to design or the process of collaboration, these theoretical and methodological concerns should form the heart of our work and our responsibility in collaborating with designers and engineers, both from backgrounds that are worlds apart from our own, and those who are already speaking for the user in corporate and institutionally supported forums. Confronting the conservatism of the Computer Supported Cooperative Work field, Susan Leigh Star has presented marginal ways of knowing as central to a progressive information systems design. She poses the questions:

Why should computer scientists read African-American poets? What does CSCW have to do with critical race theory and feminist methods and metaphysics?

(Star 1994: 19)

Her answer is:

[F]eminist, anti-racist and multicultural theory, and our collective experience in those domains is one of the richest places from which to understand these core problems in information systems design: how to preserve the integrity of information without *a priori* standardization and its attendant violence.

(ibid.)

It would be naïve to imagine that introducing such marginal and unfamiliar texts is undistruptive to, for example, a design session. Yet by presenting these ideas through interprofessional hyperlinks, such as the 73 bus route, I think that partial translations are possible. Furthermore, thinking through what happens to such ideas can also help us consider how they travel. Writing about fashion design students, Angela McRobbie has found that knowledge about cultural theory is re-inscribed in the language and culture of fine arts:

[S]ocial and political themes engaged with in cultural studies which then resurface in studio work are typically translated back into the more authoritative language of the fine arts.

(McRobbie 1998: 57)

Perhaps one of the most pressing challenges is to work out how to deal with multiple partial translations, including forms of resistance. I suggest that these challenges might be tackled by exploring the *forms* through which collaborations might take place, rather than just selecting a set of texts under the rubric of relevance for a particular collaboration, and then making a judgement on their value. Although conversations about value (how much? for whom? how measured?) do frequently arise in our own collaborations, these kinds of discourses are only one way to frame partial translations. Instead at INCITE we

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are exploring the use of visual practices and design sessions, for example, as part of the way we do social and cultural studies of technology. It also might encourage us to think of the product of social and cultural studies of technology as going beyond textual output, or acting in conjunction with traditional fieldwork narratives and analysis. For example, in Figure 5 two products of collaborative work are sketches of objects. The ways in which they are linked to fieldwork, our analysis, the collaborative session, the culture of technology studies and the norms of design practice are all aspects of our ongoing investigations. Thinking through these issues also means we may be stimulated to examine more closely our relationship to different aspects of the cultures of production of new technologies. Designers have begun to reflect upon what kind of reasoning sketching might represent in design practice (Arnheim 2002). In a similar way sociologists and anthropologists might now reflect on what kind of reasoning this kind of collaborative process and output – even sketching – might signify.

I have used this research note to describe the ways in which researchers at INCITE have become involved in the production of technical systems. I end with a set of questions that I hope will help to develop this discussion.

- How can we think about the development of collaboration in the study of new media?
- What are the implications of working with cultural intermediaries such as designers?
- How do we write accounts of our work, and in what ways can we go beyond traditional texts?
- How can we work with epistemologically or politically challenging theories within the collaborative process?

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NOTES

1. For a discussion of the importance of cultural intermediaries see Nixon and du Gay (2002).
2. The INCITE group are Kris Cohen, Gerard Oleksik, Kate Orton-Johnson, Adam Reed, Steve Smith, Zoe Tenger, Nina Wakeford.
3. CASE collaborators are Sapient, British Broadcasting Corporation, and Sage Publications.
4. These are terms used by Sapient in their own consultancy work. A data circus is a workshop

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in which fieldworkers present their in-progress or recently completed data collection for group comment. A design session offers a more fully analysed version of the same data and usually involves brainstorming new ideas with product or interface designers.

5. For an explanation of 'boundary objects' see Star and Griesemer (1989).
6. See <http://www.soc.surrey.ac.uk/incite/AESOP%20Phase2%20public%20spaces.htm>
7. One of our collaborators described her work within her technology company as 'channelling the user', a process by which she is expected to present the findings of her own user research to others in a design team.
8. For a map of the route see <http://www.tfl.gov.uk/buses/>
9. See <http://www.soc.surrey.ac.uk/incite/mapping/index.htm>
10. See <http://news.bbc.co.uk/1/hi/sci/tech/1684773.stm> for a partial translation of our work!
11. In addition to the INCITE team, present were Elizabeth Anderson (Sapient), Martin Ortlieb (Sapient), Phil Brook (Sapient), Trevor Pering (Intel) and Jeanna Burrell (Intel).
12. Palo Alto Research Center, see <http://www.parc.xerox.com/>
13. For an overall synthesis of findings, see Dutton (2001).
14. The invitation was sent by Lucy Suchman, Jeanette Blomberg, Brigitte Jordan, David Levy, Cathy Marshall, Susan Newman, Julian Orr, Randy Trigg. For an archive of the event see <http://www.workpractice.com/wpt-fest/>
15. For a discussion of the importance (and content) of corridor talk in science and technology studies see Downey and Dumit (1997: 245–63).

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