

CREATING E-RESEARCH COMMUNITIES: THE AOTEAROA/NEW ZEALAND NATIONAL PROJECT

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Abstract

The paper analyses the development over the past 18 months of a new national networking project that is designed to build increased capability and capacity within the New Zealand social science. The paper identifies the context out of which the project developed and examines how it has made use of some of the tools of E Social Science. It then raises questions as to how far these new ways of working create challenges to research practice and form new “knowledge spaces” for a critical/reflexive social science in the twenty-first century.

Introduction

The political context for the creation of a new national research network was a change in the New Zealand Government in 1999, which brought to power a centre left coalition of Labour and the Alliance (a slightly to the left of labour group of small parties). The new government adopted a more social development focused agenda linking it to the ‘after neo liberal’ government or third way style of policy development (Giddens 2001, Larner et al 2006). The new strategies involved a move away from total reliance upon market forces and competitive activity to shape economic and social policy towards favouring the creation of “evidence based policy” within the framework of a whole of government approach that sought to create greater cross ministry and departmental linkage. The way that this was to be implemented was not worked out and over the next 6 years we have had a variety of attempts to reshape practice both within government and across the research sector to improve connectivity between both New Zealand researchers and the wider international community

To create the space for the new political project of the knowledge society a large Knowledge Wave Conference was held and the Government created the Growth and Innovation Framework (GIF). This was expected to create an investment model for research and development and connect New Zealand into the global world. The image was a powerful one and fitted into the wider agenda of free trade and creating niches markets for high value goods. Social sciences were to be part of this new look but they were largely cast in a local role assisting in the new “evidence based policy push within social policy development. Here the framing of the work of the Ministry of Social Development around key knowledge theme areas (KTAs) and key knowledge questions (KKQ's) and the Ministry of Science and Technology's I cubed framework of Ideas, Innovation, and Investment were the new flagships. Buying into the idea of creating a knowledge society allied New Zealand with many other OECD countries. But as subsequent research and analysis has shown much of this was rhetorical rather than substantial and often “knowledge” was reduced to certain “technologies” (Nanotechnology, Biotechnology, and Information technology) and ignored or gave scant attention to other forms or areas of knowledge (Carlaw et al 2006). The tension between local expertise, global connectedness and international competitiveness were also central to the emergence of a performance based research measurement system. This emphasised world class scholarship for an individual to gain the highest ranking which in practice was identified largely as publishing in top ranked international (not New Zealand based) Journals. Thus contradictory messages were sent out to the social science community, indicating an agenda not clearly thought through or consistently supported.

One of the ways favoured of shifting the landscape of social research was the creation of “networks” and virtual research centres. The experience of a number of the new initiatives give support to Rhodes (1997) contention that the new model of networking do pose problems for “steering” and control and arise in some cases from the lack of clear direction of the programmes. Government funded networks can thus be seen as a new element in government practice to try and overcome the structural limitations of previous reforms of Government. In the 1980s and 1990s New Zealand restructured the public service around a form of accountability that was based around performance agreements of chief executives of ministries thus looking beyond their ministry to consider cross ministry or whole of government activity was not generally central to their operation and reporting (Boston and Holland 1990). “Networks” and “knowledge managers” were seen as a way of encouraging collaboration across sectors both inside and outside of Government. Social researchers were seen as lacking in co-operation and collaboration so they needed to be better “networked” to achieve greater ‘coherence’ and thus be able to more easily interact with government and respond to ‘signals and ‘steering’. Such moves of course encourage particular types of social research practice.

The need for improved physical and social infrastructure, connectivity and human capital development were seen as necessary to ensure New Zealand R and D stayed competitive and internationally connected. So New Zealand somewhat belatedly put in place plans for such investment as part of moving to a “knowledge society where more people were able to participate. Information Communications Technologies were seen as a key to connecting business, communities and research capacities. The Advanced Network (essentially a fast computer backbone connecting Universities and Crown Research Institutes) was to provide “New Zealand scientists with access to the

tools that will allow them to participate in the sharing of large data sets and development of computational models” (Jarvie 2005:1). Social science was not central to the argument or vision for the Advanced Network but they were one of the first to create a technology that required it.

Social research in New Zealand has been subject to many reviews most of these concern themselves with the role of research in policy development. They are about the application of social science rather than its development as a critical reflective research and theoretical practice. Therefore there has been ongoing tension around what constitutes social research and the extent to which social science and government should be interconnected. Predictably the Minister of Social Development (in 2003), at the first Government sponsored Social Policy and Evaluation Conference, announced new investment in the social sciences to build capability for evidence based social policy and evaluation. The Minister launching the idea in April 2003 said, “that the new network would “contribute to understanding our society and the dynamics of our future wellbeing”. Later the Tertiary Education Commission (TEC 2003) identified the intention for the new network to be “a flagship for the social sciences bringing together leading researchers from around the country” (TEC 2003). The final concept for the network emerged from a mostly within Government discussion and in November 2003 tenders were called by the Tertiary Education Commission. The tender document was ambiguous as to the priorities within this programme between developing capability strategies and career tracks to ensure the recruitment and retention of social science researchers and the investment in new substantive areas of research. The project was to be interdisciplinary and inter institutional reflecting the Governments desire to create a more collaborative research environment after a decade and a half of a highly competitive research and development agenda (Pool 1999).

The contract for the new network was awarded to a bid based on a partnership between six of the eight Universities in New Zealand and including one Community based Research Centre. The successful proposal was based on a platform of 36 existing publicly funded research programmes and the additional funding was seen as an opportunity to add value through creating new linkages between researchers and enhancing capability through programmes targeted at new and emerging researchers and those from Maori, Pacific and new settler communities. Capability building was necessary given the demographics of the current social science labour force within New Zealand, dominated by those over 50 and thus the likelihood that within the next five to ten years there would be a considerable outflow due to ageing and retirement. This reduction is happening at a time when the Labour led government was intent on strengthening the ‘evidence base’ for policy development and improving the evaluation process within Government Ministries. These policy changes have created an expansion of the social research workforce and a demand for new skills, particularly in the area of evaluation research. It has also seen new government agencies created. The brief for the BRCSS project thus emphasised the need to build capability in the social sciences that contributes to the “development, implementation monitoring and evaluation of research-grounded public social policy” (BRCSS 2006). Both proposal and contract required a trans-disciplinary policy relevant understanding of the nature of social science that potentially places BRCSS within contemporary government discourses of collaboration, partnerships, capacity building and evidence based policy (Lewis and Thorns 2005).

Building the New Network

The construction of the BRCSS network created a series of challenges. The original application brought together 36 programmes that had not previously had engagement with each other. As part of constructing the application, the original core group of 12 senior researchers organised the programme into four themes and an overall project of researching the *Social Futures for Aotearoa/New Zealand*. The four themes were new wealth creation and distribution systems in a globalizing context, social justice and development, sustainability of diverse households, communities and settlements and the transmission of wealth and knowledge in a context of demographic change. The themes need to be “owned” by the network so in the first year a series of workshops around the themes were held as a way of beginning the dialogue across the various programmes. This began to show up some of the ambiguities and tensions within the project.

Figure 1 BRCSS Contested dimensions of a mandate

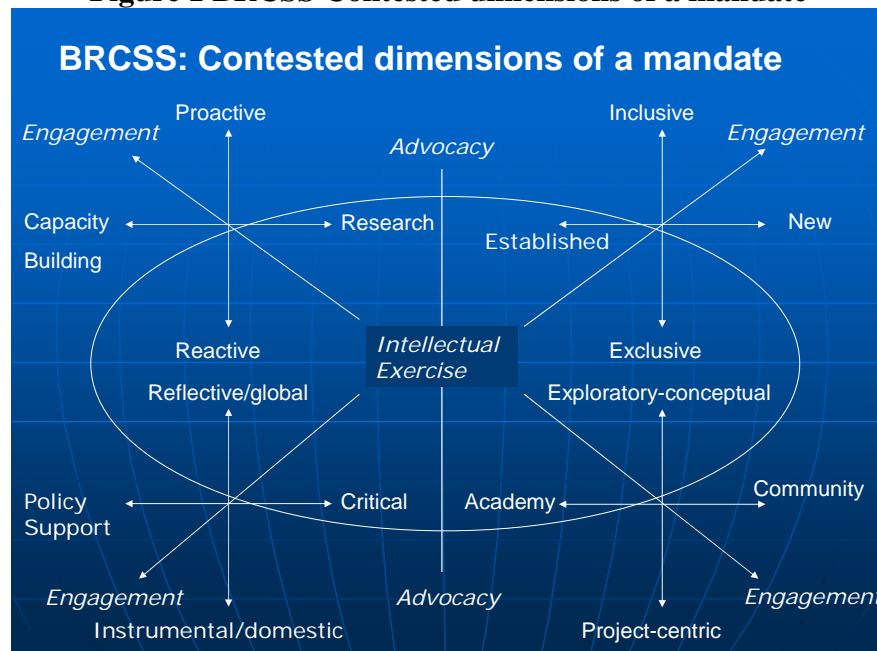


Figure 1 is an attempt to identify the contested dimensions of the mandate that was received from the TEC contract that are currently being debated. The first is whether BRCSS is able to be proactive and create its own research agenda or whether it has a largely reactive role and constrained by its contractual obligations and its relationship with Government policy making.

The second is the nature of advocacy that BRCSS should/could undertake. Here debate centres on whether BRCSS is a new advocacy group for tertiary social science researchers – a kind of front door to government for steering and collaboration around public policy development and formation or whether it could assert a more independent and less instrumental role. This for some is a key concern as it relates to the distance that BRCSS can stand from Government and thus is about the ability to retain a critical/reflexive capability.

The third is the tension between collaboration and co-operation both with Government and across institutions. Individual member institutions were concerned

about the level of net benefit each would receive from the new partnership and whether this would enhance or limit their individual ambitions within the tertiary environment. At the same time that BRCSS was being established the first round of the PBRF quality exercise was taking place and Universities were jockeying for position in the new league table of “research excellence”. In this environment generating external research money and attracting and keeping leading researchers was assuming greater significance. Thus at both institutional and individual level there was potential conflict between BRCSS objectives of encouraging collaboration and co-operation and the institutional and individual career pressures created by the shifts to the research environment resulting from the new performance measures, based upon individual assessment and rankings.

The fourth is that of inclusiveness versus exclusiveness. The original programme and teams making up the Research College provide the nucleus of the project. But in the first round of discussion the question of expanding the network was raised. Who should be brought in, what were to be the conditions of entry and what rights would the ‘new’ members have compared with the original members. The limited funds available created some tensions around expansion and dilution of funds. A further extension to include social science researchers outside of the Universities is a further challenge to the ongoing shape and purpose of BRCSS. As resources are limited and expectations are high managing these tensions and providing incentives for participation in the new network are present.

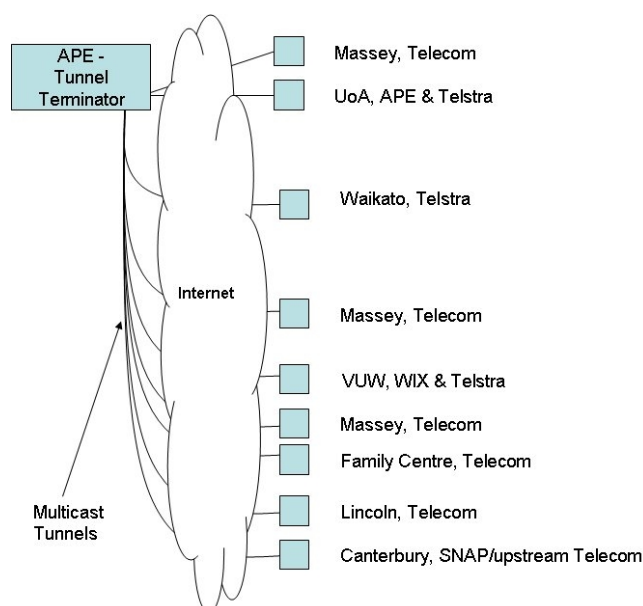
The fifth is the cross pressure of initiating new research and investing in capability and capacity building activity. In respect to capability the idea of adding value through strategic investment activity is popular and a number of priority groups were identified. These are emerging researchers, Maori, Pacific, and new settler (recent migrant groups). A range of scholarships and support grants were devised during the first year of operation. The development of the research agenda is also subject to debate with respect to the themes and whether or not to develop an overarching “grand” project to engage the new network. The resolution of this debate is ongoing but the focus has shifted to the idea of seeding initiatives and using funds to leverage new connections between researchers across the network.

Building the strategy for engagement and network building drew upon theories of network construction and sought to employ the tools provided by grid technologies to increase the potential for collaborative work across distance. The project was national in scope and had researchers spread across 10 different physical locations and two Islands. The logistics of creating physically present meetings would not be possible with the budget available thus it was necessary to create *virtual spaces* through the creation of *virtual rooms* through Access Grid Technology (AGN). BRCSS to become an actively constructed network needed to develop both a set of underlying rationalities and goals to ensure, buy in, and participation from its constituent members and a set of tools to build up understanding, trust and research connections across the country that could be seen as delivering a new level of capacity and creating new research initiatives. This project also requires the social scientists involved to develop a new form of practice that is overtly inter or trans-disciplinary and thus potentially challenges their disciplinary roots and requires them to enter into a new “knowledge space” (Lewis and Thorns 2005, Thorns 2003).

A \$500,000 one off capital grant was provided to the Network for infrastructure development. The decision was taken to put this investment into creating a national AGN. This has become one of the key achievements of the first year of the project. In November 2004 planning began to design and implement such a national system. The building of this system required the overcoming of a range of technical, administrative and local site-specific challenges. The system was finally operational in November 2005 one year after planning started. However, it was not until the end of March that we finally hooked up all ten nodes to complete the network. The 10 “nodes” are spread across the country and as there is no national computer connectivity between the universities – institutions used different providers – the BRCSS project had to establish a national linkage arrangement to ensure all 10 sites could communicate (see Figure 2). The design of the “nodes” was done through linkages between the BRCSS Network, Hitlab New Zealand and City Link an Internet provider based in Wellington. The need for high-speed cables and a large bandwidth infrastructure backbone soon became obvious in order to provide full connectivity and the maximum benefit from the technology that had been established.

Computer mediated communications technologies that seek to create the possibility of face to face meetings in real time from “virtual rooms” became an attractive option for the BRCSS Network as they enable many to many communication in real time and combine audio and visual linkage (Shields 2003). This is important given that only a relatively small number knew each other thus to build trust and understanding was seen as a significant step in moving the network from a “paper” to an actual social network. Research has shown that building knowledge, trust and understanding are crucial if virtual research networks are to have meaning for their participants.

Figure 2 BRCSS-Grid



Whether this can be achieved over digital networks as effectively as through actual presence remains to be seen, but is something to be explored as part of our research tension between pursuing the new and maintaining existing capability. Clearly success will arise from the establishment of relationships that add value and generate new collaboration. Here the presence of research funding, albeit modest, targeted to developing linkages and different research teams and the incorporation of post

graduate and emerging researchers are levers that are available to attempt to change the culture of current research practices. However, the extent to which this takes place will be a guide to how long and through what mechanism it is possible to make the most effective changes to long established practices. There is here also a

The system is currently running across a 10 Megabyte connection, which struggles at times to deliver across all sites so use requires more monitoring and management than we would ideally have liked. Also at the present time we are limited in our ability to use the full suite of tools AGN provides. We have tested some and will seek to extend the range of operation as bandwidth is expanded during this year. The key to this improvement is the advent in the second half of 2006, about a year behind schedule, of the Advanced Network. This will provide the bandwidth needed to expand the operation shifting us from megabytes to gigabytes of connectivity. Further through peering arrangement with Internet 2 in the USA we will be able to enhance our connectivity beyond our borders. We have already made a number of successful linkages, through this technology, with the UK, Australia and the US and can thus appreciate the way that this can enhance our connectivity and potentially increase the opportunities for our researchers to be more active participants in international debates and collaborative and comparative research programmes.

Building a Virtual Research Community

A virtual research community is a community of researchers that use computer-mediated communication (CMC) for collaborating and research practice. Ideas of community are contested within the social sciences and definitions vary across different disciplines (Day and Schuler 2004:11). Historically, communities were defined by geographical boundaries. However, being geographically located close to others does not necessarily mean that people are part of a community and increasingly in a digital age this seems too limited (Wellman 2001). Communities are self-defining. Therefore, the make-up of a community is dependent on the participants and their social interactions.

The concept of virtual communities challenges many traditional ideas. This is in part due to the seemingly limitless nature of community-mediated relations, as they are not constrained by distance. Voluntarism is a critical component of community development as it is about like minded people making linkages. In researching virtual communities a number of common themes have emerged, these are they share a common interest, exchange information, create an environment to accommodate these needs, develop rules and norms, are self defining and self organising. All these elements can be applied to virtual research communities. Research teams online and offline come together to discuss and work on a particular area of interest, exchange information and gain knowledge and different perspectives. In order to accomplish goals, they create an environment in which these can be achieved through developing trust with one another. Therefore social networks created using access grid technology could be defined as potential communities. Many of the issues that have been identified with computer mediated communication because it does not “convey the full range of communication cues, such as voice tone body language, dress, and seating arrangement” (Haythornthwaite 2002: 161) may be mitigated by the use of access grid technology as it seeks to create a sense of co-presence, providing the

otherwise absent visual cues while at the same time facilitating the incorporation of CMC such as the exhibiting of digital documents and presentations.

BRCSS Grid Live

The BRCSS- Grid – our AGN network became live in November (2005) when we held our first management meeting across the grid linking three nodes. This was followed in early December by a virtual research college meeting extending the link to a fourth site. In 2006 we have progressively linked the remaining site so that by the 30th of March we were able to hold a national post-graduate forum linking 50 social science postgraduates across 8 nodes/virtual rooms.

The range of uses to date have been for management meetings – using the capability for conferencing, thematic research workshops, post graduate linkages, national workshops, focus groups and research group meetings between small groups of scholars to create new teams and generate new proposals. Across these various activities a variety of the tools associated with the Access Grid have been employed. Moving into this new form of working has also stimulated interest in other aspects of e-social science especially the use of grid computing for the handling of shared data files and collaboration across multi sites both locally and internationally.

Table 1 Access Grid Usage.

Grid Use	Number of Occasions/Frequency	Number of Nodes	Number of participants
BRCSS Management Group	Monthly from November 2005	Up to 8	12
BRCSS Research College	Intermittent	10	40
Post Graduate Forum	Initiated March 2006 bi-monthly	10	40-50
Research Activities	Focus groups NZValues Survey March/May	3-4	6-12
Research seminars and workshops	April onwards	Variable	15-25
Research meetings	December onwards	2- node linked at anyone time	Upwards of 2
International Linkages	Number since December 2005	Bilateral links between nodes in NZ /overseas	1-4

The experience to date of using the AGN has highlighted a range of issues. The first is the physical organisation of the space. The rooms secured comprise both dedicated space and multi use rooms and varied in size and shape. In Institutions, space is always a contested arena and often represents historical uses and relative power of departments within the institution. Also how the room was arranged in terms of furniture and seating also impacts on the way people approach the session and the degree of informality achieved as well as participation. The size of the group is a further significant factor to the managing of a session as we found when we held our largest meeting. On this occasion with 16 in one of our virtual rooms it became difficult to both hear and see who wanted to participate.

At all the sites the provision of the AGN system was standardised and bulk purchased and the system is running on common software platform using open source software either Access Grid or Microsoft Conference XP depending on the needs of the session as they have differing strengths. Maintaining the AGN system has required the co-operation and technical support of IT staff across the partner institutions and we have been fortunate that there has been interest and enthusiasm to assist the operation of this new, for us, technology. Technical problems both with respect to the layout of the spaces being used, audio, and video quality have arisen but here we have acknowledged that the project is still in its early stages

Structuring a session and building more “natural” set of interactions was a further area of learning. At first there was a degree of discomfort for some arising from the ability to see oneself as well as others – this is not part of ‘normal’ collective interaction. Daw noted that ‘the majority of respondents in his survey (73%) said they behaved differently because the session was over the Access grid’ (2004:2). Access Grid sessions thus can produce a heightened self consciousness that detracts from the purpose of the meeting/group activity. In the research we have conducted to date participants had reservations about how close to everyday “natural” interaction it was possible to achieve. Some commented upon how being on the screen themselves was inhibiting and distracting and drew attention to the appearances of contributors and their actions rather than the content of the conversations. Participants also raised the presence and control by technicians as they had a mediating role in determining whom the camera zoomed in on during the meeting and made some people feel they were under “surveillance”.

Research has shown that AGN sessions need to create rules and norms to shape practice and build trust. The initial meetings on the grid were largely between people who had already worked together and therefore trust had already been established, and the work was much like that in off line meetings. The offline rules and norms that had already been established were easily transferred to the on-line virtual meeting. This was not the case with the PG forum where over 50 participants were linked across ten sites. Here most participants did not know the others so it was difficult to create a free flow of discussion. Many of those present responded that this uncertainty made it difficult to contribute and that smaller and more targeted “virtual” meetings were seen to be more likely to enable easy communication.

The degree of structure and formality in on-line meetings thus appears to mirror that in offline meetings and relates to scale, and nature of facilitation of the event rather than whether it is on or off line. Processes of speaking in turns using Access Grids can be difficult in large group situations as it was more difficult for people to attract the attention of the chair of the meeting. The awkwardness was also attributed to the fact that for most of the participants the technology was novel and they were feeling their way, as were the organisers. Finding the opportunity to speak and engage in the “virtual group” was seen as difficult and required more work to identify those present, and create structure to enable meaningful dialogue. This links with observations that building norms, trust and understanding are basic requirements for successful virtual communities (Wenger et al 2002, Woolgar 2002)

The AGN sessions so far have created an opportunity to strengthen and create new networking possibilities. Postgraduates responding to the first virtual forum identified the breaking down in the isolation some felt as a positive outcome.

Discovering others interested in the same research questions and the possibility of sharing theoretical and methodological approaches generated the greatest incentive to continue, despite the defects and problems with the technology.

Longer term issues with respect to ethics of use were raised during sessions. The question of whether sessions could and would be recorded, who would have access to this material and the need to develop appropriate protocols to regulate use. This pointed to the need for protocols over use, and roles of participants, facilitators and technical support staff.

A key difference between AGN and other forms of virtual communication, for example through email and web based discussion, is the facilitating of both visual and sound communication across multi sites and thus strengthening the sense of presence and belonging, further enhancing the possibility of generating virtual communities. The BRCSS network provides an opportunity explore such questions as within the network there are both those with established relationships, and those with no previous linkages. How far computer mediated communications can open up the possibility of new “spaces” for research collaboration and knowledge creation that are not limited by physical presence and geographic location is still to be determined.

Creating Knowledge Spaces

The BRCSS network and the “knowledge space” that is emerging can be seen as both a “political project of government and of social science however neither project is fully formed or complete. They have elements in common but also significant tensions and differences. For Government the project emerged out of a change in direction that required a refashioning and refurbishment of social science after a period of its marginalisation. It marked a renegotiation of the connection between social science and government after a period of discontinuity. It created a renewed debate about what counts as social science knowledge within the context of evidence based approaches to public policy development. It created a debate about how the social sciences should be positioned with respect to government and how far should the research agenda be set by government requirements for specific types of research knowledge (Royal Society 2005). Social science within New Zealand has always been dependant upon the state for funding whether this is through University based funding or public good science funding given an absence of private philanthropic trusts and low investment by the private sector in social research outside of market research. The closeness of this relationship has raised debate and concern at various times amongst the social science community with respect to its independence and the value placed upon its theoretical contribution and critical reflexive character.

The emergence of E Social Science can be seen as part of this broader political shift to an ‘after liberal government third way’ practice of governance to enable the creation of a Knowledge society based on enhancing understanding of social issues through more ‘evidence’. In this context harnessing the power of modern computing becomes attractive. This suggests a cost effective way of extending the knowledge base through mining data already collected more extensively. It provides the possibility of more rigorous analysis and closes the gap between social and other sciences thus increasing its status after a period, at least within New Zealand, where it was not well valued or resourced (Pool 1999, Thorns 2003). The access to such data and the ability

for this to be analysed in a way that allows both theoretical and methodological advances that extend understanding rather than just providing evaluation of current policy settings becomes critical to whether these technologies and forms of activity extend social science into new “knowledge spaces”. The danger for social science within this emerging paradigm is that it largely reconstructed in terms of technical competencies and its contribution to policy relevance. Mapping the social sector and steering it to achieve government goals appears to becoming an increasing concern of government as they quest for “relevance” in their research investments. The “knowledge space” that is being constructed by Government for BRCSS thus could be seen as one that serves these needs of government to map and steer public investment in the social science to underpin its programme to create a knowledge society and evidence informed public policy.

For a BRCSS project of creating a new knowledge space is about rethinking the nature and practice of social science within the 21st century. Here there is debate and difference. One way of appreciating the possibilities is to see these debates around a series of tensions. These are with respect to a trans-disciplinary rather than a disciplinary structure, as a collaborative and inter-institutional and networked project rather than as a institutional and individual base one and as situated between the global and the local so that it draws from both its local context and engages with the way that the global is now interconnected with the local. In the crafting of this project computer mediated technologies enable both the global and the local to be woven together and facilitates transcending limitations created by disciplinary, institutional and geographic spaces as it is a new space rather than one that is already occupied and structured.

Figure 3 Constructing a Knowledge Space

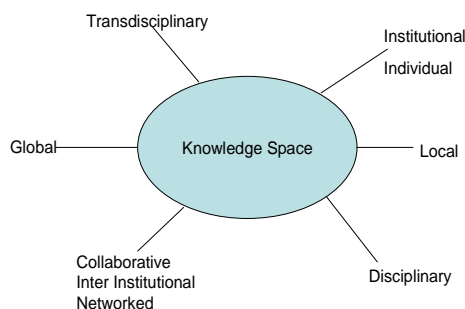


Figure 3 demonstrates that conceptualising BRCSS as a knowledge space sitting between two different “political projects” allows the contradiction and tension around its mandate and practice to be better understood as it draws attention to what can and may be created. The space that has been created is one that is ‘virtual’ to the extent that it is not vested in a single institution nor in one physical location. It is using the possibilities of CMC’s to create something that is trans-disciplinary, collaborative and not tied into discipline specific agendas. The knowledge space sought is contested as there are tensions both within the network and with respect to BRCSS contractual relations and the expectations of the Government in terms of what it can and should deliver. The creation of BRCSS challenges established practices within institutions and places new opportunities for researchers to move into the new ‘space’ being

provided. How the BRCSS programme responds to these challenges will determine whether it can be innovative, and whether it is able to contribute to the refashioning of a new knowledge space that can change the landscape of social research practice.

References.

- Boston, J. and Holland, M. (1990) (Eds) *Fourth Labour Government* 2nd Edition, Auckland, OUP,
- BRCSS (2006) *Objectives and Guidelines to Policies and Awards*. BRCSS Network.
- Carlaw, K. Oxley, L., Thorns, D., Nuth, M. and Walker, P. (2006) Beyond the Hype: Intellectual Property and the Knowledge Society/Knowledge Economy. *Journal of Economic Surveys*
- Day P. and Schuler D (2004) *Community Practice in the Network Society: Local Action/Global Interaction*, Routledge, London
- Daw, M. (2004) Interim Survey of Use of Access grids for e Social Research, University of Manchester.
- Giddens, A (ed). (2001) *The Global Third Way Debate*. Polity Press, Cambridge.
- Haythornthwaite, C. (2002) Building Social Networks via Computer Network; Creating and Sustaining distributed learning communities,. In *Building Virtual Communities" Learning and Change in Cyberspace*. New York, Cambridge University Press.
- Jarvie, C. (2005) Advanced network backgrounder, MORST, Wellington.
- Larner, W ., Le Heron, R. Lewis, N (2006) Co-constituting Neoliberalism: Globalising Governmentalities and Political projects in Aotearoa New Zealand. In England K, Ward K. (Eds) *Neoliberalization: States, Networks and People*.
- Lewis, N and Thorns, D.C. (2005) Building a network and a knowledge Space in critical conditions, *BRCSS Occasional Paper no1*. Auckland.
- Patrick, E. (2001) Small Group Discussion over the Access Grid: A Case Study.
- Pool I. (1999) Social Sciences and an evidence based public policy. Royal Society New Zealand Miscellaneous Series 54, 62-73, Wellington
- Rhodes, R.A.W. (1997) *Understanding Governance: Policy Networks, Governance, Reflexivity and Accountability*. OUP, Buckingham
- Royal Society of New Zealand (2005) *Towards 2020: Challenges for the Social Science Research Community* Workshop Report, RSNZ, Wellington
- Shields, R. (2003) *The Virtual*, London, Routledge, London
- TEC (2003) Building Research Capability in the Social Sciences Tender Documents, Wellington.
- Thorns, D.C.(2003) The Challenge of Doing Sociology in a Global World: The Case of Aotearoa/New Zealand. *Current Sociology* 51, 6, 689-708
- Thorns, D.C. and Spoonley, P. (2005) Innovative Networking: A National Social Science Network in New Zealand. Paper presented at the First International E-Social Science Conference, Manchester UK June 22-25.
- Wellman, B (2001) Community Question, *Canadian Journal of Sociology*, 26.3, 1203-1228.
- Wenger, E., R McDermott and Synder, W. (2002) *Cultivating Communities of Practice. A Guide to Managing Knowledge*, Boston Mass, Harvard Business School Press
- Woolgar, S (2002) *Virtual Society? Technology, Cyberbole, Reality*. Oxford, Oxford University Press.