

The Bane and Benefits of Computers in Australia's Department of Social Security

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Introduction

Technology is an essential part of contemporary life. For example, I travel to work on a bus, I rely on medical technologies to sustain my life, I maintain contact with my family and friends using the telephone and I wrote this article using computer technologies. Despite the importance of technology in constructing and constituting society, the social sciences generally omit technology from consideration. Because of the reluctance of sociologists to consider technology in their analyses, John Law (1991) argues that technologies are treated as "monsters", while Bruno Latour (1992) refers to technologies as the "missing masses." In the field of policy studies, I have argued that technology is a "political player" in public policy processes (Henman, 1997). Although social analyses which adequately include technology constitute a small domain of social science, such analyses have a long history.

Following from the work of Karl Marx (1954 [1867]), and later Harry Braverman (1974), the use of technology in work places has been a widely studied topic of sociologists of technology (e.g. Byrne, 1988; Hakken, 1993). In these studies, the way in which technologies change the nature of work and the way we think about work is explored. Some feminist scholars of technology have been critical of this narrow focus on production technologies. They have, consequently, provided insightful analyses of both domestic technologies (e.g. Cowan, 1989) and technologies of reproduction, such as In-vitro Fertilisation and contraception (e.g. McNeil, *et al.*, 1990). These feminist analyses draw attention to the ways in which household work is conceptualised and practiced, and to the way sexuality and human reproduction is conceived and acted out. However, the ways in which the understanding and practice of government has changed with the use of technology by the State have hardly been investigated.¹

A limited exploration of changing notions and practices of government has occurred in a few studies of military technologies supporting nation states in battle (e.g. Mann, 1986; Dudley, 1991) and in the more recent focus on surveillance, as a form of government (e.g. Lyon, 1994). Anthony Giddens (1985, pp.172-181) argues that innovations in transportation and communication technologies, the introduction of timetables to coordinate transportation networks and the proliferation, circulation and compilation of written documents in "bureaucracies" led to the "consolidation of the administrative unity of the nation-state." Despite this research, a more comprehensive study of the ways in which particular technologies shape the nature of government and our understanding of governance is yet to be done.

Since the 1960s, computer technology has played an increasing role in the conduct of government bureaucracies, where it is now crucial to government bureaucratic operations. A nuanced appreciation of the role computers play in the nature and practice of government is, therefore, a worthwhile contribution to a project aimed at understanding the contribution of technology to the nature and practice of governance. In addition to the studies of military, transportation, communication and surveillance technologies, it is intended that this empirical study of the use of computers in Australia's Department of Social Security (DSS) will provide another site from which such an analysis of governance can be developed.

The remainder of the article consists of six parts. The first part briefly discusses theoretical perspectives on the relationship between technology and social change, and presents the perspective taken in this article. This is followed by an outline of the nature of my study of the use of computers in DSS from which data was obtained. The third section presents how computers are used in DSS, and their relationship with DSS policy processes. Having described the relationship between DSS policy and computers, in two further sections I present the changes in both social security policy administration and social security policy which, it was found, computerisation enabled, contributed to, extended and intensified.

The article then concludes with a brief discussion on the relationship between technology and governance.

Technology and social change

Conceptualising the relationship between technology, on the one hand, and society and social change, on the other, has proved difficult. Initially, social studies of technology focused on the “impacts” of technology on society, the extreme approach being technological determinism. More recently, the social shaping of technology (e.g. MacKenzie and Wajcman, 1985) and the social construction of technology (e.g. Grint and Woolgar, 1992; Pinch and Bijker, 1984) has been emphasised. Social determinism is the extreme of these contributions. Developing from this tradition, an emerging consensus is that technology and society are not distinct domains. Rather, what is technological is also social, and what is social is also technological. The object of study is heterogeneous and socio-technical (e.g. Bijker, Hughes and Pinch, 1987; Bijker and Law, 1992; Latour, 1993). Such an approach, adopted in this article, transcends the technological determinism/social determinism dichotomy, requiring instead a more sensitive analysis of the factors involved.

Given this approach, any analysis must recognise the role played by a multitude of components — e.g. artefacts, people, natural occurring objects — in contributing to the constitution and change of society. Whilst the *interaction* between multifarious components is important, the role individual elements play must not be overlooked. In particular, given a particular setting, the introduction of technology enables change to occur. Indeed, prior to its introduction, some activities may not have been possible. Further, other activities may be performed more efficiently — using less time, energy or resources — when the technology is employed. However, studies of technology have shown how technology may also constrain action or may be an inefficient replacement of humans. Although technology may play an important role in social change, the importance of the

goals, aspirations and actions of humans in co-constituting such change must not be neglected.

In the study reported below, computer technology is seen in this light. The socio-technical domain of DSS is analysed to identify the effects of the use of computers. Many of the changes identified are mutually constituted by both technological abilities and socio-political ambitions. Indeed, most policy or bureaucratic directions result from a myriad of interlocking technologies, practices and discourses. Consequently, computers do not, on their own "cause" the identified changes. Rather computers have enabled such change, or intensified, exaggerated or extended already present changes evident in both DSS and the Australian Government more broadly. In short, computers are asserted to have played a significant role in the identified broad policy or departmental changes.

The study

The reported study is of the use of computer technology in the policy processes of DSS. Electronic digital computer technology was selected because of its ubiquity, its continuously developing character, and its (perceived) critical role in the operation of high-, late- or post-modern society. DSS was chosen because it is a major bureaucratic institution of Australia's Federal Government, utilising the largest computer network in Australia. Government policy and policy processes illustrate conceptualisations and practices of government.

Data identifying the nature of the use of computer technology in DSS policy processes were obtained through a variety of methods. Case studies of the initiation, development, implementation and administration of two new DSS policies provided comprehensive and detailed data over a relatively short period of time (about three years). In conducting these case studies, DSS staff from many levels and locals were interviewed. They included senior executives, policy makers, computer personnel, local managers, telephone operators and counter staff in local DSS offices. Interviews were also conducted with workers in cognate organisations such as the independent Social

Security Appeals Tribunal and a Welfare Rights Centre. In addition, field research throughout DSS was conducted. This involved watching staff working in three local Regional Offices, a Teleservice Centre, an Area Office and National Administration, including the observation of meetings between DSS policy and computer professionals. This research was supplemented by documentary research.

The insights gained from the case studies were supplemented by a broader historical perspective of the nature of changes in social security policy, policy administration, the use of computers, and their interconnections. This perspective was obtained through the aforementioned interviews (particularly of long-serving staff) and extensive documentary research of Departmental records.

This article reports results on how computer technology has contributed to changes in the administration of Australian social security policy, and in social security policy itself. A forthcoming article will provide a more wide ranging consideration of how the use of computers change the nature and practice of governance.

Computer use in DSS

I turn now to present the use of computers in DSS *vis a vis* social security policy and its administration. In DSS, the relationship of computers with policy is wide and varied. Six uses of computers are listed below.

Firstly, and perhaps most obviously, computers support the *implementation/administration of DSS policy*. Computer support is central to the operation of DSS and therefore to the administration of social security policy. However, computers do not straightforwardly and unproblematically implement policy. For instance, the introduction, on 1 January 1993, of a new computer system to administer the new Family Payment, was accompanied by major computer problems. These technical problems generated additional work for staff and, three years after the introduction of the system, over one hundred "work arounds" — that is, alternative computer procedures used to work around technical problems — were still

being used by staff in order to do their job. Besides failing technologies, other technologies and governmental programmes may need to be aligned or configured to achieve operation. For example, communications between distinct computer systems has become increasingly important with recent policy changes. Indeed, communication between various computer systems, each with different technical and structural realities, was a significant factor in the problems surrounding the above-mentioned introduction of Family Payment.

Whilst computers are used to support the administration and implementation of policy, at times computers more specifically *automate policy*. For instance, computer systems automatically calculate the claimant's rate of entitlement from available information, automatically suspend or cancel a client's benefit if certain conditions are not fulfilled, and automatically check for overpayments and inform the client (via a computer-generated letter) and DSS. Interestingly, the Australian Government was forced to amend the *Social Security Act 1991* to legally recognise that computer-made decisions are decisions with a legal reviewable status (Sutherland, 1994, pp.172-3 & 503; c.f. *Social Security Act 1991*, s. 75A & 75B [for the Age Pension]).

Computer technology is also widely used in client compliance activities, that is, activities which ensure that clients do not willingly or inadvertently contravene social security legislation. In the use of computers for such activities, computers *protect policy* from both intentional and unintentional infringements. Computer technology is used extensively: all new DSS applications are scrutinised by accelerated computer matching to ensure that the claimant is not already receiving benefits; computers automatically generate reviews of clients on group risk-based criteria (based on computer generated statistics) which may involve sending clients computer-generated letters requiring confirmation by clients; and the Data-matching Program (Cahill, 1994; DSS & DMA, 1992, 1994) matches DSS client data with data from various government departments including the Australian Taxation Office, the Department of Immigration and

police records. Apparent data matches from the different databases are examined to detect inconsistencies which may imply fraud.

Computers help to *monitor policy*. Here the generation of volumes of statistics plays an important role. DSS produces many publications at various time intervals listing such things as the number of people receiving each benefit with breakdowns on items like sex and rate of benefit, movements in numbers, and the money spent on each benefit. Such statistics are then available to outside welfare, policy and academic observers and for use in answering Parliamentary questions. This helps ensure that policy is scrutinised.

Computers assist in the *evaluation of policy*. Here again, computer-generated statistics are most pertinent. For example, the publication of changes in the number of long-term unemployed or the number of people receiving Disability Support Pension (the income support payment for people with permanent disabilities) is useful in assessing the relative success or failure of employment and training policies. Comparing actual client numbers with computer-projected client numbers based on Australian Bureau of Statistics (ABS) data, for example, indicates the take-up of payments. This is an important measure of a policy's effectiveness. Further, computers support periodic surveys of clients which are used to help evaluate policies.

Finally, computers *model policy* options. Models range from sophisticated spreadsheets, to hypothetical models based on DSS client data, to models based upon ABS data. Models based on ABS data are used to assess the impact of proposed policies on the entire Australian population, rather than on the DSS client population only. Many models incorporate Australian taxation rules, as well as social security rules, in order to embrace the complex interactions between the social security and tax systems (Oliver, 1994).² This modelling is essential to accurately determine the effects of policy changes, particularly when consequences are non-intuitive. For example, hundreds of thousands of Aged Pensioners would have *increased* tax burdens if the Income Tax Free Threshold is increased!³

Through a variety of methods, all of these models estimate the financial cost to, or savings for, the government of proposed policies. Various models also indicate the numbers and groups of people affected by a proposed policy change, how they are likely to be advantaged or disadvantaged, and by how much they are to be affected. Additionally, some of the models are useful for detecting how much they are to be affected. Additionally, some of the models are useful for detecting poverty traps and those most "at risk." Modelling numerous variations of a proposed policy enables the policy to be refined to achieve the politically desired policy effects.

Having identified the numerous ways in which computers are involved in DSS's policy processes, I now identify how these uses of computers have supported changes to social security policy and its administration. What then have been the consequences of this complex of computer use and policy processes? In the next section, I outline changes in the administration of social security policy. This is followed by a section presenting changes to social security policy *per se*.

Changes in policy administration

According to the rhetoric associated with virtually all workplace introductions of new technology, the use of computers increases efficiency and therefore productivity. Consequently, it might be thought that DSS's use of computers enables policy to be administered more efficiently. Since the 1963 study which considered the introduction of computer technology, DSS documents are replete with expectations and reports that computers will improve (or have improved) administrative efficiency.

Limited historical data appear to suggest efficiency gains in small well-defined areas: the processing time for new claims has decreased; client payments are made more quickly; the speed in making changes to payments has increased; and client records can be administratively transferred more quickly and easily when clients move states. However, when using indicators for efficiency — namely, client-to-staff ratios and the percentage of total costs spent on

administration — a historical analysis indicates that computerisation has not produced efficiency savings for DSS as a whole (Henman, 1996). Instead of improving efficiency, *computerisation has increased productivity*. Instead of computers merely replicating what was done prior to computerisation, computers have enabled DSS to undertake more of the same work and introduce new administrative practices. In particular, computerisation has provided the basis for greater client contact, a massive increase in client surveillance capabilities, a proliferation of statistics, increased policy complexity and accelerated policy change. (These themes will be elaborated below).

Computers, therefore, *extend various administrative practices*. For instance, the use of statistics and accounting techniques were established practices before the introduction of computers. But it is evident that computerisation has extended (or mobilised) such practices far beyond what was previously possible. For example, DSS's Annual Report for 1967-68 states that "the IBM 360/40 computer is capable of producing a wide range of information for statistical, research and management purposes to an extent not previously feasible under punched cards or manual methods" (DSS-AR 1967-68, pp.25-26).⁴ As the intensification of such practices occurs new forms of statistical analysis and of accounting become possible, are developed and are practiced. The adoption of computers and the newer technological practices which they make possible also result in *the abandonment of other ways of doing things*. For example, the use of paper client files is continually decreasing with more information being stored on the computer, electronic mail is replacing office memos and changing the methods of information dissemination, and cheque and cash payments have been almost entirely replaced by electronic bank transfers. Also, reviews of entitlement - an activity of client compliance and surveillance — are supplemented by new computerised forms of surveillance such as overnight Accelerated Computer Matching and Data-Matching. In these new "high tech" forms of compliance and surveillance, computers cross check client records to identify inconsistencies which may indicate fraud. Without computers, such processes would

have been too labour intensive and time consuming to be a feasible administrative practice.

The extension of administrative practices which computers make possible means that computers also enable *policy to be administered differently*. Computers enable data-matching as a process of compliance. They make automatic electronic payments direct to client bank accounts. DSS introduced Teleservice Centres where clients can telephone DSS to request forms, make enquiries or inform DSS of changes to their personal circumstances (Minister for Social Security 1992). As Teleservice Centres are physically separated from local Regional Offices where clients files are held, Teleservice Centre staff rely on computers to access DSS client details. Consequently, Teleservice Centres would not be possible without advanced information and telecommunications technology.

Computers also enable social *policy to be analysed differently*. There is no doubt that computers have made possible (complicated) statistical analyses of the enormous amounts of data held by DSS. Indeed, the storage of immense amounts of data in the one place is only feasible with computers.

As mentioned above, computers also automate policy, certainly a unique form of policy administration. For example, computers calculate the rate of payment to a client and determine client eligibility automatically. Hence, computer systems embody DSS policy. As staff rely heavily on computers to assist policy administration such embodied policy becomes *defacto policy*. This is particularly significant when computer embodied policy differs, either in content or emphasis, from the formal policy embodied in legislation. For example, consider the case when a DSS client's circumstances change, resulting in a change to their payment. For the purposes of deciding when the event takes effect in the DSS system, DSS calculates the Date of Event to be the next pay day. From that, the Date of Effect (of the event in the system) is calculated. Currently, all the DSS's computer systems calculate the Date of Effects as the day after the Date of Event. However, until recently, the *Social Security*

Act 1991, (ambiguously) specified the Date of Effect to be the Date of Event. The ambiguity was removed with policy changes announced in the 1997-98 Federal Budget (DSS 1997, pp.10-11).

A particular form of policy administration is compliance. The experience of the DSS is that *computerisation has led to increased surveillance*. Client surveillance measures may be administrative or inscribed by policy. Data-matching between various Government Departments, accelerated computer matching, and periodic reviews based on ideas of risk, are all examples of computer-supported surveillance techniques (Cahill, 1994; Weatherley, 1993; Nolan, 1997). DSS staff are also monitored through their use of DSS computers.

An often repeated theme in my interviews with DSS staff was the essential and central nature of computers in the work of DSS. In employing computers for more tasks and increasingly difficult tasks, that would not have been possible without computers, DSS develops a *dependence on computers*. As a result, DSS is vulnerable to new dangers or risks related to computer failure. For example, whilst computers have enabled the efficient production of client advices, there have been huge public outcries when printing errors have resulted in clients receiving other clients' personal information. Another consequence of a reliance on computers is the tendency to expect clients to accept computer failure as a technical issue which cannot be helped. For example, consider the sense of inevitability in the following statement:

Despite extensive testing, when the change-over to the new system was made in South Australia some 'teething' difficulties were encountered. This situation is not unusual in the implementation of new ADP systems ... there is inevitably a settling down period while staff become familiar with the new procedures, and systems faults are eliminated ... these initial problems were being overcome progressively by such measures as procedural and programming amendments and the provision, where necessary, of clerical support to ensure that any adverse effects on clients were minimised (DSS-AR 1979-80, p.64).

There seems to be little analysis in DSS of the personal problems that DSS clients and staff may encounter when computer failure occurs. Consequently, with the exception of ad hoc measures to "minimise" the effects, no attempt to systematically address these issues is made. Client service is an afterthought. (Interestingly, my research indicates that clients generally regard the explanation that "the computer is down" as a cover-up for staff incompetence or laziness. Perhaps underlying this assumption by clients is the idea that computers are objective and can not be wrong).

As a result of an increasing reliance on computers, *computer systems staff gain institutional power*. This observation is clearly a specific instance of the classical observations made by such people as Max Weber (1968) and Jacques Ellul (1964). As computers are central to the administration of policy, ensuring policy change is implemented properly requires due consideration be given to the development of appropriate computer system support. For example, computer personnel have a significant influence in determining starting dates for new policy. Policy starting dates also have to correspond with the quarterly system release dates where upgraded software is implemented onto the entire computer network. DSS computer staff can also terminate a proposed policy by indicating that it is either not technically possible or too complex, in which case budgets are "over-estimated" to effectively halt the project. Indeed, DSS's computer division has argued against a number of policies and requested the Minister for Social Security to reduce the complexity of policy on the basis that it is too difficult to administer complex policies, particularly those involving "saved groups."⁵ So far these requests have, it seems, had little effect. Institutional advantages of computer-skilled staff also occurs in local Regional Offices, where it was suggested that staff who are more comfortable with computers and show higher computer literacy have a greater likelihood of promotion.

Due to the fundamental composition of computers, they are more suited to and adept at quantitative rather than qualitative tasks. Consequently, the widespread use of and reliance upon computers

has led to *an increased focus on quantification*. This may mean that only those questions are asked which can be answered quantitatively, or questions are answered by ill-fitting quantitative responses. This increased focus on quantification can be observed in the proliferation of performance indicators, management information and statistics, which are an increasing feature of DSS operation. For example, DSS publishes performance standards for Timeliness and Accuracy in such areas as Claims Processing, Client Inquiries, Reviews and Appeals, and Financial Recovery (DSS, 1992).

Changes in social security policy

I now discuss changes in social security policy which computerisation has supported.

Not only does computer use open up new possibilities for DSS administration, but new policy options are "opened up." That is, *computers change the "landscape of possibility" of policy*. This is due to the ability of computers to provide efficient support for policy administration and to implement more complex formally-defined policy than would be possible with a human-only administration. Also, computer models provide for the development of complex policy. Due to the complex interactions between the social security and taxation systems, computer models are necessary to enable the implications of policy change to be identified, conceptualised and even thought.⁶ Such models thereby assist the consideration and analysis of more complex policies than would otherwise be possible.

With greater scope in policy choice there exists the real possibility that *policy change may increase*. Indeed, Australia's social security policy has undergone massive change in the last decade. For example, Annette O'Neill states that with regard to social security legislation "In the 45 years of consolidated legislation approximately one quarter of the one hundred and twenty eight amending acts have been [sic] in the past four years" (1992, p.275). Since 1992, change has only intensified. Whilst political will has played a major role in these changes, computer models have been crucial in developing some of the more complex policies. Flexibility for policy change is enhanced

by the fact that the administration of (small) changes to policy may be effected by relatively small changes in computer programs. However, computers can also decrease flexibility. For example, recent policy shifts, which challenge the traditional separate social security programmes of pension, benefits and allowances by interlinking and redefining the programmes, have been difficult to implement precisely because of DSS computer systems. This difficulty is due to the historical development of each of the computer systems supporting each payment type. The result is that different systems of different vintages are unable to effectively communicate with each other. It is primarily for this reason that one policy suggestion made by the Social Security Review in 1988 was not introduced until January 1993. It is due to this incompatibility and the antiquitous nature of some of DSS's computer systems that a programme of upgrading is underway. The rhetoric is that an integrated on-line computer system will allow for more flexibility and, consequently, support greater policy change (DSS n.d.).

Whilst computers may technically enable policy change (yet at times stifle such change), policy change may also increase because of the *perception* of politicians and bureaucrats that computers make policy change easier. Perhaps less attention is paid to the costs associated with large policy swings. This perception may be reinforced by DSS computer personnel who may want to give the impression that their expensive equipment are capable of such changes. Indeed, DSS Annual Reports give significant reason for thinking computers increase DSS's ability to make policy change:

The use of computer facilities has once again been a major influence in enabling the Department to implement legislation within a very short time-scale (DSS-AR 1972-73, p.71); and

The use of ADP [Automatic Data Processing] facilities has made a major contribution to the department's ability to implement complex changes to benefits legislation. ... Had it not been possible to utilise computer facilities and ADP systems, it is estimated that several hun-

dred staff would have been required for up to six months to complete these tasks (DSS-AR 1979-80, pp.62-63).

Further, because policy change is perceived as relatively easy, politicians may think about policy change and policy options more than if policy change was a nightmare to contemplate.⁷

Although interviewed DSS staff were not generally negative about change, they were critical when they were unsure and/or ambivalent of the reasons for policy change. In such situations policy change was seen to occur solely for the sake of change. On the other hand, DSS clients seemed to suffer from (continual) policy change. They were less informed about the details of the changes and the policy reasons for them. This uncertainty translated to a feeling of loss of control over one's life. Indicative of this was the emotional expression of anguish, frustration, outrage, and anger by clients at times of policy change, partly because of change and partly because the transition was rarely smooth. Computer failure often caused considerable emotional and financial costs as well as financial uncertainty to clients. Consequently, clients vented their frustration and anger on DSS staff, particularly those in Teleservice Centres. Another consequence of constant change was that staff developing computer systems to administer new policies opted for a minimalist approach; there is no point in expending lots of energy in developing a quality system product if the policy, and therefore the system, is to change shortly after.

Computerisation has also tended to produce *more formal and "universalised" policy*.⁸ Instead of having a more-or-less universal policy in which special cases are dealt with by discretion, handling of special cases has become more and more formalised and the latitude for discretionary decisions has been progressively reduced. For example, the situations in which DSS can waive client debts are now fully prescribed in legislation; all discretionary elements have been removed. Another area where discretion has been considerably reduced is in the assessment of an applicant's disability when applying for Disability Support Pension. Schedule 1B of the *Social Security Act*

1991 consists of approximately 50 pages of tables used for the assessment of impairment. The applicant's lived experience is matched to these tables and if they accumulate enough points they are entitled to receive Disability Support Pension.

Consequently, *policy is applied more uniformly*. As discretionary elements are reduced and people are subject to a greater number of formal rules covering a greater area of human experience, uniformity, of both treatment and decisions, is enhanced. DSS's increasing automation of policy helps to entrench this trend. Moves to further computerise decision-making processes through the use of "expert systems" to ensure that decisions are more uniformly made (Schell, 1991) further this process. Accordingly, DSS staff may be more likely to think of people as belonging to a uniform category: instead of regarding clients with unique needs as exceptions to be considered under discretionary provisions, their circumstances are made to fit, where possible, the available policy requirements. In talking casually with members of the public about my research, I was often told by people how they were "compartmentalised" or how they suffered when their experiences did not readily fit DSS categories.

With computerisation, *policy has become more complex*. This is due both to the ability of computers to easily implement formally-defined procedures (i.e. policy) and to the ability of computer models to explore, and therefore refine, complex policy proposals. The reduction of discretion in increasingly formal policies, which try to formalise the whole spectrum of human experience, also leads to more complex policy.

The complexity of Australia's social security policy has been increasingly recognised, with pressure on the Government to reassess its overall policy package. In response, the Government contracted an independent consultant to assess Pensions payments (Barber, Moon and Doolan, 1994) and both Labor and Coalition Governments have committed themselves to a programme of policy simplification (Baldwin, 1995; Newman, 1996). Simplicity is better for staff, making working life easier, plus it increases the likelihood of

accurate decision making. Furthermore, complex policy means that clients find it increasingly difficult to determine their entitlements and thereby to know when to appeal. In short, complexity effectively undermines clients' rights (Raper, 1994, 1995). Indeed, the previous Minister for Social Security recognised this complexity and that "information technology has made complexity easier to administer, but has yet to make [policy] more comprehensible to individual customers" (Baldwin, 1995, p.46).

Since the mid 1980s, Australian Government policy has been made in a period of self-imposed economic restraint. This imperative, along with social analyses which indicated that if former social security policy persisted, social changes would significantly increase Government expenditure, meant that changes to social security policy had to occur. For the Hawke and Keating Labor Governments, which had a stated commitment to addressing issues of poverty and disadvantage, across the board cuts were not an acceptable solution to this problem. Instead, the Government instituted policy changes which targeted social security payments to the most vulnerable and the most in need. These changes have made policy increasingly complex. There can be no doubt that without computers to model complex policy options, to enable policy and administrative change and to assist the administration of such complex policies, such change would not have been possible.

Hence, under computerisation *policy has become more targeted*.⁹ For example, income and assets tests have been instituted and tightened, young and single unemployed people have experienced reductions in support relative to those with families, and special incentives have been introduced to encourage sole parents and people with disabilities to seek employment. Such policy directions encourage further complexity of policy. Indeed, this is most evident when government introduces new policy with the condition that "no one currently in the system will be disadvantaged." To enact such a policy, DSS creates "saved groups" (see note 5), which require computer support to administer. On the topic of complexity, it is

worth noting that in DSS policy, there exist saved groups within saved groups!

For some time, the Federal Government has required Departmental policy change to be "budget neutral." Under this scheme, when politicians (or bureaucrats) want to target a particular group of people for increases in social security support, another group must be created and identified from which to divert that money. The latter receive reduced financial support for no other reason than to balance the books and because they are seen as "less worthy" than others. This is particularly evident in the treatment of young people under 18 and under 21 receiving either unemployment or educational support. Consequently, *the economic basis of policy decisions increases*. Indeed, critics of recent social security policy changes argue that there are no good policy reasons for some changes, just economic and pragmatic imperatives (Raper, 1994).

With computerisation, *new groups are created*.¹⁰ The above discussion on the economic basis of policy decisions illustrates how new groups are created and then labelled as either "worthy" or "less worthy" poor. Also, computer models may indicate poverty traps, thereby contributing to the definition of groups caught in those traps.

Discussion on the construction of groups has been best developed in the study of statistics. A number of such studies draw attention to the peculiar way in which they construct the world (Hacking, 1975, 1991; Alonso and Starr, 1987; Rose, 1991). Statistics make previously invisible aspects of the world observable, thinkable and, therefore, governable. Statistics actively create the world, for instance, by encouraging the creation of new, statistically defined groups. Consider the idea of long-term unemployment. In the past, unemployment was seen as a temporary state, but as statistical data began to indicate that periods of unemployment were increasing, the concept of *long-term* unemployment was introduced. To this, the term *very long-term* unemployed (i.e. greater than two years) has recently been added (Australia, 1993, p.9). Statistics may also help to redefine groups. As it is not politically advisable for "long-term"

unemployment to be the average experience of unemployed people, increasing political pressure to change the definition of long-term unemployment results. For instance, in the process of developing the 1993 White Paper on Unemployment, a suggestion was made to increase the definition of long-term unemployment from 12 to 18 months. Thus, the statistical mean, rather than anything else, becomes the standard and the basis for determining "reality" (Hacking, 1991). This also reflects an emphasis upon quantification, as discussed above.

Although the use of statistics preceded computers, computerisation has seen a proliferation of statistics and an increase in the number and sophistication of their analysis. Computerisation has also enabled the mobilisation of statistics to a previously unimagined extent. As statistics enable the creation of new groups, the use of computers extend this process significantly. For example, computer-supported and computer-analysed statistics may also "reveal" "at risk" groups, such as those who are more likely to experience long-term unemployment, incur overpayments or attempt welfare fraud. In doing so, a risk is specified and the characteristics and the archetypal personality accompanied with that risk are defined: "detailed statistical analysis [builds] profiles of 'at risk' client behaviour which is then matched against the total clients of the Department" (DSS-AR 1986-87, p.24).

As new groups are created (or identified) they become problematised as a focus for governance. As new groups "emerge," separate policies are developed for separate groups. For example, no longer is there one payment for people who are unemployed. Until recently, Australia's social security system paid a Jobsearch Allowance to the general unemployed population, the Newstart Allowance to long-term, that is greater than twelve months, unemployed people, the Youth Training Allowance to unemployed people under 18 years of age, and the Mature Age Allowance to unemployed people over 60 years of age but not yet entitled to Age Pension.¹¹ Each group has different pay rates and means tests. Indeed, the status of the youngest age group has been entirely uncertain as the

Government has made and attempted to make a number of policy changes to redefine these clients as dependents of their parents instead of independent citizens of the State. The latest change has been to exclude young people under 18 years from income support, unless they are in the education system or undergoing vocational training.

Computers, therefore, have contributed to a great variety of changes in the administration of Australia's social security policy and in the substance of social security policy. New forms of policy administration have emerged. Computers automate policy decision-making and are used to strengthen compliance measures. These changes have resulted in more uniform policy decision-making and increased client surveillance. Policy has become more complex and targeted and has changed significantly in a short period of time. This makes policy administration more difficult, thereby increasing the possibility of error, and has created confusion and uncertainty amongst clients.

Conclusion

There can be no doubt as to the centrality of computer technology for the operation of the Australia's present day Department of Social Security. The question, which up until now, has not been posed nor answered is: Are computers merely tools which provide the technical support to achieve the Department's aims, or does their very use carry with it various modes of operation which "texture" both policy administrative practices and the very content of social security policy?

Through an in-depth and historical study of the policy processes of DSS, a number of changes in Departmental practices and policies have been identified. These changes are partly attributed to DSS's use of computers. They result from a complex combination of numerous, heterogenous factors, of which the use of computers is an important factor.

Computers are used to implement, administer, automate, protect, monitor, evaluate and model policy. Computers have been shown to enable DSS to adopt new or more efficient means of policy

administration, to increase client surveillance and to administer more complex and targeted social security policy. In the process, DSS has become reliant on the use of computers and has increased its focus on quantitative aspects of policy administration. Whilst these changes have provided "adequate" benefits for those "most in need," the policy system has become so intricate, that its complexity effectively undermines clients' rights.

This study therefore shows how the use of computers in Australia's Department of Social Security has contributed to the way in which security policy is organised. This has implications for the governance of DSS clients and of the broader society. The study provides important empirical data which illustrate how computers shape the way we think about government and the way we are governed, and provides the platform for a theoretical consideration of these connections (Henman, 1996, ch. 11).

Notes

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1. In this context, Michel Foucault's conception of "governmentality" usefully portrays these ideas that there are modes of thinking about and of acting out government (1991; Gordon, 1991). Nikolas Rose and Peter Miller (1992; Miller and Rose, 1990a, 1990b) have developed Foucault's work by talking about "political rationalities" and "technologies of government." The project which I am suggesting can thus be expressed as an investigation of the ways in which technological artefacts, and computers in particular, contribute to, shape, influence and precipitate changes in governmentalities, political rationalities and technologies of government.
2. Polette (1994) provides an overview of the two systems and their interactional effects.
3. This is because Pensioners receive the Pensioner Rebate to either eliminate or reduce their tax liability. This Rebate is transferable to the Pensioner's partner. If the Income Tax Free Threshold is increased it would be appropriate to accordingly decrease the Pensioner Rebate by an equivalent amount. As the formula for transferring the Rebate to the partner effectively involves "double dipping," reducing the Rebate whilst increasing the Tax Free Threshold involves a reduction in the total real value of the Rebate for those who transfer it to their partners. See Polette (1994, pp.22-23) for the precise operation of the Rebate.

4. Throughout this article, the reference (DSS-AR 19XX-XY) will abbreviate:

- Australia Department of Social Security (19XY), *Annual Report 19XX-XY*, Australian Government Publishing Service, Canberra; or
- Australia Department of Social Services (19XY), *Annual Report 19XX-XY*, Australian Government Printers, Canberra.

The Department of Social Security was established in 1972 to replace its precursor, the Department of Social Services which came into existence in 1941.

5. When a policy change, which will affect some clients, is introduced, politicians may “grandfather” the old policy so that no current client will be disadvantaged. To operationalise this policy, clients to be treated under the old rules are identified as a “saved group,” which are managed by computers.

6. I say “thought” purposely. Just as language constitutes ideas and enables them to be thought, so do computer models, which extend the domains of what can be thought.

7. Although Australia’s experience has been that the use of computer modelling to develop policy has led to more policy change, the experience in the UK has been the opposite. Computer models clearly show the winners and losers of any policy change. Given the climate of economic restraint and the clear indication of losers, the conservative UK government apparently decided it was better to remain with the current system than to risk public outcry from the losers in any policy change.

8. The term “universal” here refers to policy which is uniformly applied to the whole population and without discretionary elements, and contrasts with the concept of “universal” welfare which is available for the entire population, that is, without income or assets tests.

9. Although Australia’s welfare state has traditionally been targeted, targeting has significantly increased since the mid 1980s. In policy studies, a distinction is made between targeting and selectivity

(Saunders, 1991, pp.305-310); however, I use "targeting" to refer loosely to both formally-defined activities.

10. "Group" refers to the people defined by a category and not to a collection of people who interact with each other. The term "category" itself is insufficient for what I want to portray, because it seems only to refer to an abstract concept.

11. Job Search Allowance no longer exists, having been combined with Newstart Allowance to reduce the complexity of the social security system.

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