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Unpacking multiculturalism in the ICT workplace: Differences in responses to workplace situations for English and non-English speaking backgrounds

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THE CHIASMUS OF DESIGN: PARADOXICAL OUTCOMES IN THE E-GOVERNMENT REFORM OF UK CHILDREN'S SERVICES

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Abstract

This paper presents a detailed ethnographic study of the design problems of a major national IT system in UK child protection and welfare services. The implementation of the Integrated Children's System (ICS) has disrupted social work practice and engendered growing professional resistance, prompting a fundamental review of its design. Marshall McLuhan's concept of chiasmus is a central feature of the analysis presented here of the tribulations of the ICS. Chiasmus refers to the tendency of any system, when pushed too far, to produce unintended contradictory effects, and is an intrinsic feature of the behaviour of complex, socio-technical systems. The dysfunctions of the ICS provide a pertinent, large-scale example. The ICS constitutes an attempt, via technological means, to re-organize child welfare services in the UK. Whilst aimed at improving child safety, the ICS has had the opposite effect of increasing the potential for error. This chiasmus has been exposed through the multi-site ethnography reported here, which shows how rigidly designed processes, enforced by IT systems, force social work professionals into unsafe investigative and recording practices which put children at greater risk. The paper ends by proposing an alternative approach to design, based on proven socio-technical precepts, emphasizing the principles of minimum critical specification, user-centeredness and local autonomy.

Keywords: Integrated Children's System, socio-technical systems, child protection, child welfare, user resistance, chiasmus, user-centred design, performance management, audit.

1 INTRODUCTION

Every process pushed far enough tends to reverse or flip suddenly. Chiasmus – the reversal of process caused by increasing its speed, scope or size (Marshall McLuhan, *The Book of Probes*, p222)

Chiasmus is an integral property of designing, especially so for the design of organisations. In medicine, the general principle is familiar enough: too much of the “active ingredient” harms, even kills, the patient; indeed, the Greek for remedy (pharmakon) also means poison, as Derrida (2004) archly notes. Chiasmus emphasizes the indeterminacy of design, especially in the context of complex systems, where the presence of multiple, interacting variables means that outcomes are inherently non-linear and unpredictable; it thus furnishes a much-needed antidote to simplistic cause-effect thinking. When designing organisations, structure is the active ingredient, and achieving the optimum dose, the golden mean, should be the pre-eminent concern of the designer: too little structure risks anarchy, too much can bring on bureaucratic sclerosis. As Argyris puts it “All organisations are designs... managers specify ahead of time the jobs and roles of the players as completely as possible without the specifications being so complex that they immobilise performance”. The socio-technical theorists propound the same wisdom: “details of a work system should not be overspecified in advance. Sociotechnical analysis proceeds by specifying... only those things that must be defined: the *minimum critical specification*” (Pava, 1983). Weick (1987) makes much the same argument, expressing it in terms of the right balance between centralisation and decentralisation.

In this paper, we present a cautionary tale where an excess of structure produced a chiasmus, i.e. a reversal of the desired organizational outcome. We will examine the vicissitudes of a major national IT project, the Integrated Children’s System (ICS)¹, in UK child protection and welfare services. The failings of the ICS were thrown into sharp relief by the tragic and brutal death of a 17 month old child (“Baby P”) in the London Borough of Haringey in August 2007. The trial of the child’s mother, boyfriend and another man, which concluded in November 2008, was widely reported in the British press and caused considerable moral outrage. Reports drew attention to the deficiencies of the ICS and the role it had played. An article in the Guardian newspaper of 19th November (p. 7) is typical of the coverage. Entitled “Child protection stifled by £30m computer system”, the article highlighted the vast amount of time taken filling out forms on ICS and the pressures created by the system’s deadlines, together acting to “restrict the time available for family visits”. The urgent need to review the design of ICS has been designated as a key priority for the Social Work Force², a body set up by the Government to review all aspects of social work training and practice in response to the Baby P tragedy. Further indications ICS’s deep-seated troubles are reflected in recent reports of industrial unrest, such as the following from the Unison trade union to which many social workers belong:

UNISON wishes to draw attention to the seriousness of the problems being experienced by social work staff with the Integrated Children’s System. The problems appear to be fundamental, widespread and consistent enough to call into question whether the ICS is fit for purpose.... we have reports of a number of industrial disputes or collective grievances brewing or underway and in many more cases staff are voting with their feet and not using the system when they can get away with it (Unison, 2008).

¹ ICS is not a standard software package as such. Rather it is a standard specification, comprising a set of data requirements, a process model, and a reference set of a data collection forms (exemplars), against which suppliers can develop “compliant” software implementations (Cleaver et al., 2008). A number of ICS software products exist purveyed by a range of vendors, either as adaptations of extant systems, or as *de novo* packages. ICS was originally conceived in 2000. Its development evolved over a number of years, before “roll out” on a national basis from early 2007 onwards. Although there is an espoused emphasis through its development on piloting and incrementalism, our research has found that, in practice, its design has been highly centralised, led by a small group of senior civil servants and expert advisers. Input from social work practitioners has been very limited and feedback from the field has had minimal impact on its design; oft-heard are tales of requests to simplify the exemplars, for instance, going routinely ignored. Adverse reactions from practitioners have been dismissed as “teething problems” rather than symptoms of fundamental design flaws (see Cleaver and Walker, 2004).

² As a result of the research reported here, one of the authors (SW) is a member the Task Force

In this article, we shall tease out the fatal flaws in the design of ICS, flaws which were responsible for the chiasmus of a system designed to enhance child safety seemingly having the contrary effect. These paradoxical outcomes are subtle though, only to be brought to light by careful, ethnographic analysis of the local adaptations of practice arising from the user/technology interaction³. It is important to be clear that these failings are not, at root, failings of the IT *per se*, but of the rigid workflow regime and the excessively complex assessment forms which the technology embodies. Having said this, there is no doubt that the all-pervasive nature of the electronic medium has enabled these arrangements to be more efficiently and comprehensively enacted than would have been the case with a paper-based system, and with less flexibility and “wobble room” for workarounds and other improvisations.

As a major national initiative directly aimed at transforming social work practice, ICS is worthy of investigation in its own right. We also believe that the problems inherent in ICS are by no means unique, and that there are lessons to be learned for the design of systems in general. These lessons are especially relevant in the context of public sector reform where technology features so centrally as the instrument of “modernization”, with e-Government now installed as a global phenomenon (Wastell, 2006). In child welfare, an important focus for such reform has been the need to increase child safety, through the formalisation of organizational procedures and their enactment by technology.

Our main interest has centred on the interface (the “front door”) between social services departments and other agencies (e.g. police, health services), and with the general public. We draw attention to the short-cuts that the ICS appears to necessitate, given the procrustean timescales and excessive audit requirements it imposes. Imperatives to safeguard children and support families appeared at odds with the new modes of e-governance and associated performance targets. Equally, the standardised but tortuous assessment forms appeared to engender a range of problematic recording practices. Whilst new tools and methods can clearly play a role in risk management, we will argue that the design of an effective system needs to be based on the needs of users and on a thorough understanding of their working practices. Only this will provide a secure basis for determining the appropriate balance between structure and autonomy.

2 MODERNISING INITIAL ASSESSMENT

In recent years, practices at the front-door of statutory children’s services in the UK have been subject to significant ‘modernisation’ efforts, aimed at improving their safety and efficiency. In 2000, The Framework for the Assessment of Children in Need and their Families was introduced (Cleverly and Walker, 2004) which clearly defined the initial statutory response as a distinct stage in the assessment process (Horwath, 2002). Since its advent, the importance of initial assessment practices has been further reinforced by the public inquiry into the death of Victoria Climbié (Laming, 2003) which heavily criticized the social services department involved (Haringey again) for failings in their referral and assessment processes.

Initial assessment (IA) emphasizes the importance of the first professional response, especially the need to see the child at the earliest point. The Integrated Children’s System (ICS) has accordingly been designed to ensure that workers rigorously follow the various steps specified in a formally defined “model” of the assessment process, leaving behind an indelible, electronic trace for audit purposes (i.e. showing that the correct procedure was followed). A standardized IA form prompts workers to collect information in a systematic way, with the expectation that the data so-garnered will contribute usefully to further assessment. Consistent with the universal application of “Performance Management” throughout the UK public sector (Bevan and Hood, 2006), a burgeoning range of targets and associated timescales have been also stipulated. Within 1 day of a referral being received, social service departments are mandated to make and log a decision about the requisite response. When an

³ We use “technology” in its widest sense to encompass formally-defined procedures and methods (administrative technology) as well as physical machinery, such as the ubiquitous personal computer

initial assessment is deemed necessary, this must be completed within 7 working days, including the requirement to see the child.

Despite these changes, errors continue to occur, not just concerning the risk of serious harm to children but indications have also been found that “children in need” and their families are not receiving appropriate help (Bostock et al., 2005). Our impoverished understanding of these continuing difficulties arises from a key limitation in the evidence-base. There has been a general tendency within the extant social work research literature to bracket off the technological from the human elements of practice. The present study represents an inter-disciplinary collaboration between social work and IS academics. It proceeds from the general principle that to develop a more effective approach to risk management in child welfare, it is important to conceptualise the ICS as a socio-technical system of inter-related human and technological components, and to draw on relevant ideas from systems theory for enhancing safety. We develop this argument in the next section.

3 THE SYSTEMS APPROACH TO ERROR MANAGEMENT

There is a substantive body of work that argues for such a systems approach to error management (Reason, 1997; Munro, 2005a; Bostock et al., 2005). Reason (1997; 2000), perhaps the most well known exponent of this standpoint, argues that errors in human systems have their origins “not so much in the perversity of human nature as in upstream, systemic factors” (p768, 2000). Coining the notion of “latent conditions for error”, he argues that the analysis of errors in organizational settings should focus on general systemic weaknesses, rather than mistakes made by particular individuals on particular occasions. Such latent conditions refer to generalized, immanent characteristics of a designed system (typically non-obvious and unintended) that increase the overall risk of errors occurring in the operational situation. In aviation, for instance, efforts to automate pilot functions were based on the premise that this would improve safety (Norman, 1990). However, by displacing the pilot from the “control loop”, his/her grasp of what was currently going on in relation to the status of airplane was necessarily eroded. Such reduction of “situational awareness” provides an example of a latent condition of error, a direct but paradoxical consequence of infelicitous design. When the pilot was obliged to take over control in exceptional conditions, the likelihood of mistakes could be increased and indeed several serious accidents were attributed to this aetiology (Norman, 1990).

An extensive quotation from Reason (2000, p.769) provides a useful summary of the main features of the concept. Designating latent conditions as the inevitable “resident pathogens” within the system, he goes on:

They arise from decisions made by designers, builders, procedure writers, and top level management... All such strategic decisions have the potential for introducing pathogens into the system. Latent conditions have two kinds of adverse effect: they can translate into error provoking conditions within the local workplace (for example, time pressure, understaffing, inadequate equipment, fatigue, and inexperience) and they can create long-lasting holes or weaknesses in the defences (untrustworthy alarms and indicators, unworkable procedures, design and construction deficiencies, etc). Latent conditions, as the term suggests, may lie dormant within the system for many years before they combine with active failures and local triggers to create an accident opportunity.

From a systems perspective, approaches to error management that focus on individual breaches of procedure or unwanted aberrations of human conduct will be limited in delivering safer worker practices. Individuals are fallible and will always err, the trick is to design safe systems which minimize the likelihood and the consequentiality of such inevitable failures. A systems perspective requires that more attention is focused on minimizing “the number of latent conditions in the system that can contribute to user error” (Lowe, p.2, 2006).

Another core systems concept we shall draw on is the Law of Requisite variety⁴. In his classic paper on the design of “high reliability” systems, Weick (1987) makes the point that failures inevitably occur when “the variety that exists in the system to be managed exceeds the variety in the people who must regulate it”. Pithily the Law proclaims “Only variety absorbs variety”. This, of course, is the exact opposite of the principle of standardisation, which in the limiting case provides for the same response whatever the input. Rules, policies and procedures are all abstractions and intrinsically lack variety; intelligent human agents provide the necessary “variety amplifiers” (Beer, 1994) which enable bureaucratic systems to work effectively.

In the heavily regulated regime of UK children’s services, requisite variety has necessarily been attenuated and the latent conditions for error are all too readily found. Work volumes create severe pressures in most settings. It is estimated that, on average, some 300 referrals must be processed every month by the typical children’s services department. Teams are legally bound to respond to referrals; they receive no extra compensation or flexibility regarding staff sickness levels, rather targets must be met whatever the particulars of local context or individual case. Pressures are further compounded by the widespread problem of recruiting and retaining experienced staff. Where referral rates are high and resources are constrained, trade offs are inevitable between urgent child-protection work and assessments leading to more general forms of family support. The general aim of this paper is to draw attention to the unsafe practices that the ICS appeared to necessitate in its demand for rapid case disposals dictated by standardised procedures, and exacerbated by the work pressures and conflicting imperatives that apply in the operational situation.

4 THE FIELD-WORK AND FINDINGS

The project comprised a multi-site ethnographic study, based in five local authorities in England and Wales and drawing data from 15 social work “initial assessment” teams. The five local authority areas comprise: a London borough (Metroville); a county council (Shire); a metropolitan borough in the North of England (Westford); a unitary authority (Seaton); a Welsh rural authority (Valleytown). The field-work began in 2007 and is still underway. Informed by appropriate standards for ethical research, the ethnographies have involved various levels of engagement across the sites. Everyday interactions between team leaders and social workers, middle and senior managers have been observed as well as more formal meetings. In total, we estimate that this has amounted to around 240 days of observation and analysis of everyday practice at the time of writing, supplemented by the inspection of key documents and case files. In addition, a total of 10 focus groups and 60 formal interviews have also been conducted. Transcripts and fieldnotes have been uploaded to a dedicated project web-site to allow the research team to share and discuss the data. Regular meetings have been held to examine and validate emergent themes, supported by group email exchange and discussion. Through these means, we have ensured that the pattern of findings reported below provides an accurate depiction of the situation across the five sites.

Each of the five initial assessment teams is tasked to respond to initial contacts and referrals that come by way of telephone calls, faxes, emails, multi-agency assessment forms etc. These various external contacts cover the range from reports of serious injuries to children, more uncertain concerns about children’s welfare, right through to simple requests for information and advice. In all sites, there is increasingly little opportunity for a “customer” to walk in and directly request help, rather all approaches are mediated through some form of “front of house” customer service interface, either

⁴ The Law was coined by the British psychiatrist W. Ross Ashby, one of the founding fathers of the systems movement, in his *Introduction to Cybernetics* (1956). Imagine a system (e.g. a family) to be “controlled” in the sense that we seek certain desirable outcomes (e.g. children do not suffer harm and achieve their full potential). Variety simply denotes the number of different “states” that the system can be in, which in the case of a human system (e.g. a family) is both large and dynamic. All families are different and the variety of the social care system must therefore possess a comparable degree of variety (repertoire of responses) in order to deal effectively with this variety.

centralized or within the team. Whilst practices varied across our sites, we found a number of distinct commonalities reflecting the influence of the performance management elements of ICS, and the concomitant preoccupation of staff with maintaining “workflow”. Workers consistently claimed that it was easy to lose sight of the primary activities of supporting families and safeguarding children, to the second order activities of targets and audit. In the rest of this Section, we will focus on the latent conditions for error created by this administrative regime embodied within the ICS. We illustrate these risky adaptations in the sub-sections that follow, limiting our report to three discrete aspects of the initial assessment process, (i) accepting a contact/referral (ii) making further enquiries and seeing the child and (iii) the completion of the IA record.

4.1 Accepting a contact/referral

Our assessment teams reported variable referral rates, ranging from 80 to figures significantly higher than 300 per month. In all but one site, far more contacts/referrals were received than could be managed. The requirement for an initial decision within 24 hours necessitated a rapid but not necessarily reliable response, and where workloads are high, the potential for error is clear:

Admin worker: ‘The phone will be ringing continuously, you put the phone down and it rings straight away...one comes and another one comes... and your mind just gets frazzled, I might have written 5 or 6 pages of A4 paper ...and when I come back to reading them, it’s all looking a bit messy...I can’t quite make out what I’ve got down...’

Such pressures created significant anxieties for experienced staff workers, who understood that the pace of work created less than ideal conditions for practice, but there was also evidence of ‘speed-practices’ becoming habituated and normalized, especially in newer staff. For staff higher up the hierarchy, it was critical that only a manageable number of referrals were actually allocated for initial assessment. In the extract below, taken from one of our busiest teams, the team leader makes clear her reasons for clearing contacts by the end of the day, with the mandate for her actions directly invoking the exigencies of managing work-flow dictated by performance timescales.

Team leader: ‘There are 50 contacts in your inbox... you are under pressure because you have to clear them by the end of the day ...and the question of whether you are more likely to close them in these circumstances? Well yeah.. so, really we are looking to close cases not open them... that’s why we work to the highest thresholds’

The IT systems maintained the pace of work, typically by providing digital reminders of deadlines and timescales. In one site, we found an ‘e-tracking device’ in the form of traffic lights, which informed workers about how much time was left before the specific episode was deemed out of timescale. In another site, ‘higher management’ were planning to print out weekly graphs of levels of attainment in meeting targets, alongside tables exposing individual failures.

In order to manage the volume of referrals, we consistently observed the presence of well established ‘general deflection strategies’ that included: *strategic deferment*, i.e. sending the referral back to the referrer to ask for more information; and *signposting*, deflecting the case to a more ‘appropriate’ agency. Whilst such adaptations are sensible if proportionate, the inherent risks are also clear. Where insufficient time precluded the pursuit of more detailed information from a referrer, other decision-making heuristics came into play. These included the routine categorization of anonymous referrals as malicious (indeed referrals from neighbours and family members were also often treated as suspect). We were told that children aged over 13 were routinely ‘NFA-ed’ (an outcome of no further action was recorded) on the basis that these young people ‘must have lived with these concerns for a long time and be quite resilient’. Similarly we found questionable methods for dealing with domestic violence notifications through automatic letters generated without any attempt at investigation. In general, we found that well-intentioned, but very busy workers, became habituated to such methods of rationing, with little time to reflect on such rationales and the risks they entailed.

In the following extract, the worker indicates how the imperative to prioritize a case already categorized as child protection (S47, i.e. section 47, Children Act 1989) required that she give less priority to an incoming referral, which also sounded malicious. Although she acknowledges her lack of knowledge, she justified her decision as follows:

Social worker: 'I've got this S47 and actually this family are in crisis and I want to put support in for them, before I worry about this other family that don't even know I'm coming, because it's an anonymous referral from a neighbor ... and you think, well OK, I don't know if there's a real risk or not, but from reading it, it sounds a bit malicious, well this family, actually are about to fall apart if you don't put something in'

In order to manage workflow, we also observed some 'safer' locally-improvised methods for meeting timescales, that generally amounted to holding a case open for 'review', but logging the IA as complete on the system so as to meet the target. In cases where the seven days had not provided sufficient time to establish confidence about the child's welfare, this 'review space' could enable further information to be gathered. However, such workarounds, even when they are constructive, by their very nature can only survive while they remain undetected by the gaze of senior management.

4.2 Making further enquiries and seeing the child

A number of cases will get through the first layer of filtering and be allocated to a social worker for initial assessment, which will include making further enquiries and seeing the child. At this second stage, we also found short-cuts in operation. There was a tendency to abort an assessment whenever the 'opportunity' arose. In the case of the referral from a grandmother below, the routine treatment of referrals from family members as potentially suspicious, and that the health visitor had seen the child, together enabled swift disposal of the case.

Team leader: 'Being a bit cheeky...we contacted the health visitor and said when did you last see the child and lucky enough the health visitor had seen the baby recently and it wasn't as bad as the grandmother had alleged... so we didn't take it any further, no further action'

The tempo and volume of work, together with the 7-day target for IA completion, were widely reported as making cases at this second stage equally susceptible to partial analysis and rapid disposal.

Social worker: 'If it's not looking that serious...sometimes you don't get all the information and the temptation is then to take a short-cut and maybe not contact the school, or because the school are on holidays you say I think I've got sufficient information to make a decision- NFA'

Needless to say, school holidays are not factored into the 7 day timescale! Neither are parents and children who are not at home, nor health visitors who are on sick leave and so forth. These factors necessarily interrupt the expeditiousness of the assessment process, but the system offers no accommodating room for manoeuvre. Thus, timescales can create perverse incentives to dispose early on the basis of incomplete information. Whilst in many cases, an "NFA" decision may be quite appropriate, our file analysis of open cases did find a common pattern of repeated initial assessments of escalating severity, before the case eventually found its way through the front-door.

Front-line team managers played a key role in the operation of ICS. In some teams, acutely aware of the possibility of error, managers worked closely alongside new recruits to defuse their inevitable frustrations and induct them into 'local methods' which would enable them to get them to the best out of ICS. However, we also found some tension between workers and their managers regarding the primacy of meeting targets. For example, in a particularly pressurized team, managers described their frustrations with workers spending too much time 'social chatting' or needing lessons in 'diary management'; such critical attitudes would seem likely only to exacerbate anxiety in work that was already stressful enough. Invoking 'safeguarding' could buy a worker more time, but only in cases where there was a clear moral mandate to set aside the all-important target. The degree of assertiveness required to challenge the performance system could also lead to overt conflict:

Social worker: ‘My manager said to me “why haven’t you finished that yet?”... and I said “well the health visitor hasn’t called me back”... and they said, “well no, if you’ve decided that it’s family support, then the outcome won’t change, whatever they say”. I said “I disagree” and of course that information informs my assessment, I’m not putting my name to that.’

Where workers were juggling between the completion of IAs and serious cases needing to progress for further investigation, ‘NFA’ was described as a welcome relief. Again, we see the latent potential for errors in this expediency; in the busiest of teams and in spite of the good intentions of workers, time precludes, for example, getting back to the referrer to inform him/her of a decision, which closes down any immediate challenge to the categorization. Seeing ‘the child’ is a central and critical part of initial assessment. However, even in relation to this imperative, we found worrying short-cuts, as the following extract illustrates:

Social worker: ‘My new manager...she comes back and says, it [the IA] doesn’t say have you seen the child, it says “has the child been seen?”, you can put “yes” and then make it clear that the teacher has seen the child. I thought hmm... what’s the point me even doing an assessment if I haven’t seen the children’

Children are not easy to ‘see’ under the conditions of initial assessment, for a variety of reasons. First, there is a requirement to see all children irrespective of ages, but older children can be difficult to track down. Second, ‘seeing’ should involve talking to the child alone to make an assessment of the child’s development and needs, but this can be hard to achieve within 7 days in a single visit. With initial response to telephone calls increasingly mediated by administrative staff and home visits curtailed to a single visit, the space between help-seeker and help-provider is steadily widening. Skilled workers might attempt to reduce this space, but for many, in the absence of knowledge derived from face-to-face work with families, they fall back on readily auditable, bureaucratic justifications, often offered by fellow professionals, which invoke missed health appointments, school attendance problems and the like.

4.3 Completing the record

The standardized initial assessment record invites workers to comment on a range of factors relating to the child, his/her parents or carers and the presenting concerns. A general observation across our sites was the paucity of information recorded on the actual IA document. In one site, we examined 65 records of individual children; the scantiness of the information, compounded by the difficulties of piecing together fragments of narrative scattered across multiple boxes⁵, made it very difficult for the reader to construct a holistic picture of the child and his/her family. The IA record presents as a rather badly designed tool, requiring copious information that is difficult to glean from one home visit and from other professionals; it thus invites workers to discard the majority of its sections as irrelevant. With not unsurprising consistency, we found an expedient method of ‘front and back-ing’ (or ‘back-to-back-ing’) had spontaneously sprung up across all our sites, wherein middle sections of the document were omitted altogether:

Researcher: ‘So what about the middle of the document, because everyone seems to miss this out?’

Social worker: What middle document?

Researcher: You know, practitioners are concerned with the referral and the outcome on the back, but what about all those pages in between about the child?

Social worker (laughing): To me well... yes, there is a page about the child, I would always put in something, depending on what the child is like...I would always put something in, but in IA you wouldn’t...this is initial assessment’

It was clear that workers were trying desperately to make the form fit their work. Whilst most practitioners welcomed the general principle of electronic recording, the IA was not only overly long,

⁵ The initial assessment form is typically 10 pages in length. Apart from the usual administrative fields for structured data, there are well over twenty free text fields addressing the developmental status of the child and relevant environmental factors: including the child’s ‘social presentation’ or ‘self-care skills’, the ‘family’s social integration’ etc.

but the standardized questions and sub-headings were not easily adapted for this or that case (c.f. White et al. 2008), so workers went straight to ‘analysis’ of ‘that dreadful form’, putting ‘nothing-in-between’. Scrolling through the pages of the record ourselves, we found it difficult to distinguish between the material typed by workers and material already on the form, i.e. the numerous sub-headings and explanatory notes provided. Workers have become experts with the copy-and-paste function, as material is regularly and mechanistically repeated. In addition, the principle that for every family, a record of each child was required, tended to encourage practitioners to produce a general homogenizing account that ‘fitted’ all the children.

Social worker: ‘If I know that the IA is more than likely going to turn into no further action, and I know that after I’ve had my conversation with the family, then I will massage the information on each of the children and talk in plural “the children presented” ’.

Whilst workers were clearly attempting to work-around the excessive audit demands of ICS, to salvage some time to spend with families, even the most perfunctory response to audit left too little time for the real work of face-to-face communication (Peckover et al. 2008; White et al. 2008). The speed with which workers attempted to complete the IA record also meant that errors of recording were common. In the busiest teams, such errors were compounded when ‘students’ (for example) were asked to catch up with recording cases they knew nothing about! Whilst workers were aware of these errors, they also reported that it was difficult to make corrections as material was ‘locked down’ in the system after 24 hours. After that period, a worker would have to seek special permission to undertake corrections. This stricture, entirely rational in the logic of rigorous audit, is however hardly conducive to good practice. Very obvious errors, such as putting a case note in the wrong file might prompt such requests, but simply improving wording was just too much trouble, though vital to the comprehensibility of the record, especially for other professional readers.

5 DISCUSSION

The Platonic approach can be described as Utopian engineering, as opposed to ... piecemeal engineering. The Utopian approach is the more dangerous... the Utopian engineer will claim that mechanical engineers plan even very complicated machinery as a whole and that their blueprints cover not only a certain kind of machinery, but even the whole factory.... (Karl Popper, *The Open Society and its Enemies*, 1999)

Since the Laming report (2003) there has been a very significant reconfiguration of children’s statutory services in the UK. Rigorous information recording and performance management are the mantras of this brave new world; however it is important that the tools we provide for our workers are fit for purpose (Munro, 2005b). We would argue, however, that the increased audit demands of ICS, together with on-going resource constraints, have served to increase the burden on front-line workers (Peckover et al., 2008). From our analysis, it is clear that the design of the modernized initial assessment system of children’s services, embodied within the ICS, is not only flawed, but that its dysfunctions provide the latent conditions for error. In response to the intractability of the IA process, the workers in our study had devised a range of artful “work-arounds”. However, errors are inevitable in the context of such expediencies, which have been extemporized to maintain an overly rigid workflow. An excessive zeal for structure and standardization has thus engendered a reversal of the intended outcome. A chiasmus has been produced in which, rather than improving safety, the latent conditions for failure have been exacerbated and risks increased.

The short-cuts that have been fashioned in the “electronic cage” of the ICS typically take the form of early categorizations based on incomplete information, or the fudging of details of a ‘home-visit’, and so on. As illustrated in our ethnography, it is preferable to dispose of a seemingly nebulous referral in the face of the more immediate performance demands of the ICS. But it is often just those kinds of referrals that appear to be irrelevant, or somebody else’s business, that can provide the warning signs of a more serious malaise (Laming, 2003). Scarcity of resources will inevitably mean that giving priority to one part of the system, the most immediate, will result in cuts in another. It is no surprise to

have found that workers pursue opportunities to deflect incoming work, and dispose of cases on the basis of superficial analysis, or fall back on fallible heuristics such as “it’s probably malicious”. In social services, priority needs to be given to reduce the distance between workers, family and community which many studies have cited (by both service users and front-line workers) as central to good practice (Pithouse and Holland 1999; Gray, 2002). We have seen that the performance-driven ICS only detaches the professional further and further from the possibility of meaningful engagement with service users, offering instead a scientific veneer of codes, risk scores and metrics.

Lipsky’s concept of the “street level bureaucrat” (Lipsky, 1980) emphasizes the importance of professional discretion in front-line practice in the public services. Lipsky saw such discretion as essential in order to get the job done: “the situations they face are too complex to reduce to prescribed responses”. This is simply a reflection of the ineluctable writ of the Law of Requisite variety; discretion is not some incidental feature, it is fundamental to the operation of any “viable system”, and of particular importance in designing reliable systems for risky environments where failure is highly consequential (Weick, 1987). In a different context, Bourdieu (2003) makes the same point in defining the ability to improvise, to adjust responses to local, situated contingencies, as being the hallmark of competent practice. In the IS field, Ciborra (2002) also exalts improvisation in the modern organisation, as the artistry needed “to fill the gaps of planning, cope with unexpected consequences, with events and situations that do not fit the planned hierarchical procedures” (pp. 153-154).

The findings we present are controversial and are presented in a designedly polemical tone. We draw attention to the multiple opportunities for errors on the part of front-line social work professionals that are exacerbated given the current configuration of initial assessment process and its technological embodiment in the ICS. Performance management (the paraphernalia of targets and indicators) is designed to enhance rather than inhibit quality performance, yet our study has found this regime paradoxically worsens the latent conditions for errors. Whilst it is tempting to berate the maverick professional who subverts correct procedure, it is important to remember that there are “good” organizational reasons for such behaviours, i.e. they are an attempt to reconcile the competing elements of the ICS with imperatives to safeguard children and to support families. The latter role, however prominent in current welfare policy, is particularly vulnerable. Perhaps the real tragedy of ICS is that in busy teams, demands to support families will inevitably be subordinated to pressures to maintain workflow.

Although this paper challenges the huge investment in systems of performance management and IT, we are not arguing for a wholesale Luddite abandonment of new modes of governance and new technology. The remedy, we believe, lies elsewhere, in a radically different approach to design. Radical it would seem for present times, in the public services at least, though hardly ground-breaking; rather the reclaiming of an older design wisdom, sundered-off, ignored, or never encountered. Sociotechnical systems design (STSD) embodies much of what we have in mind. Core principles of STSD include: user participation, minimum critical specification and the optimization of local autonomy (Pava, 1983; Mumford, 2003). Above all, it is essential to focus the design of systems on the needs of users, founded on a rigorous understanding of their working practices. The case for user-centred design (UCD) has been cogently made in many design disciplines, including information systems and human-computer interaction (Norman, 1998). UCD is essential in order to gain reliable knowledge for designing new tools and processes. Failure to involve users in the development of systems inevitably engenders alienation, and there were unmistakable signs of practitioner disquiet (complaints of additional workload and excessive “bureaucratization”) in pilot studies of the ICS (Cleaver and Walker, 2004; Cleaver et al., 2008). It is regrettable, unconscionably-so, that such early warning signals apparently went unheeded, written off with oracular reasoning as “implementation issues” rather than more fundamental problems of design dogma. As a result, the strictures of the work regime imposed by ICS have not only produced unsafe practices but, as we have seen, are now provoking overt resistance from an increasingly frustrated and mutinous workforce (Unison, 2008).

We believe that new systems and technologies can be developed which both assist the users in their daily work and achieve desired organizational goals, but without an ethnographically-informed

understanding of human practice (such as this paper provides), this virtuous circle will not be achieved. Ethnographic studies have shown time and again that even work which seems highly routine is a skilled accomplishment (Gasser, 1986); its orderliness is a product of the artful worker, not determined by the imposition of a formal rule-base. It is noteworthy that some design methods explicitly call for ethnographic engagement in order to develop a valid evidence base for design, e.g. the SPRINT methodology which has been specifically developed for the public sector (Wastell et al., 2007). There is no final guarantee against chiasmus, but the deployment of such user-centred approaches certainly offers a less hubristic way forward.

We claimed in the Introduction that our findings have relevance beyond the domain of children's services. Certainly, there appear to be parallel examples of similar problems in other large scale IT-enabled modernization projects, such as the gargantuan National Programme for Information Technology (NPfIT) in the UK health service. Eason (2007, p. 258) argues that NPfIT has generally followed a "push strategy, thrusting new technology into the healthcare practices of the NHS", leaving little room for local design. Eason finds strikingly similar local adaptations (workarounds etc.) to those unmasked here, as well equally concerning symptoms of stress and "mis-use". He goes on to argue a similar case for a flexible socio-technical approach fostering local diversity, based squarely on user needs. The command-and-control, performance management regime (combining "targets and terror"!) which we have seen in children's services is pervasive across all UK public services, producing a common pattern of dysfunctional effects (Bevan and Hood, 2006). It is surely time to move away from such crude and self-defeating managerialism. Rather than pressing ever more urgently the cause of top-down centralization, salvation surely lies in reversing the direction of travel, reclaiming an older mode of "control" founded on common values, decision premises and assumptions, i.e. the culture deriving from the shared professional task. Public service agencies (schools, welfare, health etc.) are loosely-coupled organizations; systems such as the current incarnation of ICS, which attempt to over-screw this coupling, inevitably impair performance (Perrow, 1984). Only by loosening the electronic yoke and amplifying discretion will requisite variety, and therefore reliability, be augmented. On this point, it is fitting to end with another sagacious utterance from Karl Weick (1987, p.124):

[A] system in which both centralization and decentralization occur simultaneously is difficult to design. And this is where culture comes in. Either culture or standard operating procedures can impose order.. but only culture also adds in latitude for interpretation, improvisation , and unique action

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